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Running head: HPWS: THE ROLES OF PSYCHOLOGICAL CAPITAL AND JUSTICE CLIMATE

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Abstract

While there is evidence that high performance work systems (HPWS) are related to positive employee attitudes, the underlying mechanism is not yet thoroughly understood. Similarly, though the benefits of employees' psychological capital (PsyCap) in the workplace are well documented, little is known about the extent to which PsyCap stems from the context in which people work. Adopting a multi-level approach and using the ability-motivation-opportunity (AMO) framework and the conservation of resources (COR) theory as theoretical backdrop, we develop and test a moderated mediation model to explain how organization-level HPWS relate to individual employee work attitudes (job satisfaction and affective organizational commitment) that reflect well-being through the mediating mechanism of employees' PsyCap. Analysis of multi-source data from 569 employees in 44 firms showed that HPWS were positively related to job satisfaction and affective commitment, and that these relationships were partially mediated by PsyCap. Furthermore, moderated path analysis revealed that an interactional justice climate strengthened the direct effect of HPWS on PsyCap and work attitudes as well as the indirect effects of HPWS on work attitudes. The theoretical and practical implications of these findings are discussed.

Keywords: High performance work systems; employee attitudes; employee well-being; psychological capital; interactional justice climate; ability-motivation-opportunity; conservation of resources; multi-level

High-Performance Work Systems and Key Employee Attitudes: The Roles of Psychological Capital and an Interactional Justice Climate

High performance work systems (HPWS) are seen as a group of separate but interconnected Human Resource (HR) management practices that work in synergy to enhance employee and organizational outcomes (Appelbaum, Bailey, Berg & Kalleberg, 2000; Huselid, 1995). HPWS are linked with positive outcomes that include favorable individual employee attitudes (Gkorezis, Georgiou & Theodorou, 2018; Kehoe & Wright, 2013; Zatzick & Iverson, 2011). Employee attitudes are often indicators of employee well-being (Grant, Christianson & Price, 2007), the most typical such attitudes being job satisfaction and organizational commitment (Grant et al., 2007; Van de Voorde, Paauwe & Veldhoven, 2012). Though until recently not in the foreground within the mainstream discourse of HPWS, employee well-being is important both as an end by itself (ethical considerations) and as a means to an end (Guest, 2017; Heffernan & Dundon, 2016). The latter refers to the idea that HPWS that enhance well-being also improve performance through the enhancement of well-being (Guest, 2017; Huang, Ahlstrom, Lee, Chen & Hsieh, 2016; Peccei, Van de Voorde & Van Veldhoven, 2013; Van de Voorde et al., 2012), for which there appears to be some support (Ogbonnaya, Daniels, Connolly & Van Veldhoven, 2017; reviews by Peccei et al., 2013; Van Voorde et al., 2012). For the above reasons, the study of how HPWS relate to the workplace attitudes of job satisfaction and organizational commitment is important.

HPWS is an organization- (or unit-) level phenomenon while employee attitudes (and well-being) are (or start as) an individual level phenomenon (Peccei et al., 2013; also, Renkema, Meijerink, & Bondarouk, 2017). Though most empirical research that studied the

relationship has adopted same-level designs, studies that looked at the link between organization- (or unit-) level HPWS and individual employee's job satisfaction and organizational commitment are in existence (Gong, Law, Chang & Xin, 2009; Heffernan & Dundon, 2016; Messersmith, Patel, Lepak & Gould-Williams, 2011; Takeuchi, Way & Tian, 2018; Wu & Chaturvedi, 2009). However, maybe as a reflection of the general state of research in HPWS (e.g., Boxall, Guthrie & Paauwe, 2017; Chapman, Sisk, Schatten & Miles, 2018; Jiang, Takeuchi & Lepak, 2013; Fu, Flood, Bosak, Rousseau, Morris & O'Regan, 2017) knowledge about the mechanisms underlying the link between organization-level HPWS and workplace attitudes at individual level is not yet exhaustive (Heffernan & Dundon, 2016; Takeuchi et al., 2018). Hence, adding to our knowledge of the mechanism underling this link is important.

In this study we argue that employees' psychological capital offers an account for the link between HPWS at the level of the organization and individual employees' job satisfaction and organizational commitment. Psychological capital (PsyCap) refers to the psychological resources, in the form of self-efficacy, optimism, hope and resilience, an individual possesses and can draw upon (Luthans & Youssef, 2004). PsyCap can be enhanced (Newman, Ucbasaran, Zhu & Hirst, 2014; Luthans, Youssef-Morgan & Avolio, 2015), and because it pertains to employees' capacities it is a resource that organizations can use to their advantage (Youssef & Luthans, 2013; Luthans & Youssef-Morgan, 2017). We argue herein that organization-level HPWS nourish individual employees' PsyCap, which in turn improves their attitudes towards their jobs (job satisfaction) and their employers (affective organizational commitment).

Our argument is complementary to, rather than negating, the social exchange account that has been the dominant so far. That account is based on social exchange theory (Blau, 1964), and argues that because employees appreciate the benefits of HPWS (e.g., opportunities for training and learning, valued rewards, career development, and opportunities for participation) they reciprocate in the form of positive attitudes (Gong et al., 2009; Kehoe & Wright, 2013; Takeuchi, Lepak, Wang & Takeuchi, 2007; Takeuchi et al., 2018; Wu & Chaturvedi, 2009). In this respect, the positive attitudes are the result of employees' perception that their interests are served. PsyCap pertains to "who you are" (Luthans, Luthans & Luthans, 2004; Luthans, Youssef & Avolio, 2007), hence, the principle is different: HPWS do not only invoke thoughts of personal benefit to employees who in turn reciprocate; but also HPWS cause actual change to the psychological capacities of individual employees for the better, which in turn improves their attitudes towards their job and their employer.

Being cognizant that contextual (e.g., Peccei et al., 2013) and cultural (e.g., Farndale & Sanders, 2017; Fu, Bosak, Flood & Ma., 2019) factors are likely to affect the way HPWS relate to outcomes, we study the interactional justice climate in the organization – employees' beliefs about whether organizational agents treat employees with respect and convey sufficient and timely information – as moderator. It has been pointed out that the benefits of HR practices are contingent upon employees' belief that these are fairly implemented (Blader & Tyler, 2003).

We chose to focus on interactional justice, instead of other forms of justice, for the following reasons: first, HR systems are primarily implemented by organizational agents (managers and supervisors) who interact with employees for that purpose (e.g., Frenkel,

Sanders & Bednall, 2013; Russell, Steffensen, Ellen, Zhang, Bishoff & Ferris, 2018; Townsend, Wilkinson, Cameron & Bamber, 2012; Zhang, Akhtar, Bal., Zhang & Talat, 2018). Amongst all forms of justice, it is interactional justice that is more under the control of organizational agents (Folger, 2001; Rafferty & Restubog, 2011; Scott, Colquitt & Paddock, 2009); second, unlike events that trigger perceptions of distributive and procedural justice that are only occasional, those events that trigger judgments about interactional justice are very frequent because interactional justice is involved in most encounters between organizational agents and employees (Bies, 2005; Bies & Moag, 2006). That means employees have multiple opportunities to form interactional justice beliefs, and also interactional justice beliefs are salient; third, and equally important, the study took place in China, where interpersonal relationships and the treatment employees receive at personal level have a central role in organizational life (Bozionelos & Wang, 2007; Wu, Huang, Li & Liu, 2012). We focused on justice climate because HPWS were considered at the level of the organization; hence, it should be employees' shared belief about how the organization via its agents treats people that should matter most in the way HPWS relates to attitudinal outcomes.

The Ability-Motivation-Opportunity (AMO) framework (Appelbaum et al., 2000; Bailey, Berg & Sandy, 2001; Lepak, Liao, Chung & Harden, 2006) and the conservation of resources (COR) theory (Hobfoll, 1988, 1989) serve as our theoretical backdrop. The AMO is an established framework within the HPWS discourse, while COR theory is seen as a promising theoretical lens to understand how HPWS relate to subjective outcomes such as attitudes that reflect employee well-being (Peccei et al., 2013; Shantz, Arevshatian, Alfes & Bailey, 2016). Drawing from the AMO framework, we argue that when employees have the

abilities needed to perform well, the motivation to achieve, and the opportunity to input and contribute their PsyCap increases. COR theory argues that individuals strive to retain, maintain and gain resources, contextual and personal (Hobfoll, 2002). We pose that HR practices in the form of HPWS are contextual resources that foster development of employees' personal psychological resources, namely their PsyCap. Furthermore, COR theory suggests that environmental features may facilitate the process by which one resource type fosters acquisition of another resource type (Hobfoll, 2001). The interactional justice climate can be seen as such an environmental feature, whether employees perceive that people in the organization are treated fairly at personal level should impact the degree to which HPWS cultivate employees' PsyCap.

Using multi-level data from HR managers and 569 employees in 44 Chinese firms, we show that organization-level HPWS render employees more satisfied with their jobs and more committed to their employers by means of enhancing their PsyCap, and that the relationship becomes especially strong under organizational climates of high interactional justice.

Hence, the study contributes as follows: First, it demonstrates that one route for the beneficial effect of HPWS is via the increase of employees' capacities in terms of enhanced PsyCap that is what employees can do. Second, it further consolidates evidence on the top-down influence of organization-level HPWS on two key individual level employee attitudes that are also reflective of employee well-being. Third, it addresses a similar gap in the PsyCap literature where there is insufficient knowledge of the effects of organization-level factors on individual employees' PsyCap (Hsu & Chen, 2017; Mills, Fleck & Kozikowski, 2013; Newman, Ucbasaran, Zhu & Hirst, 2014). Fourth, the identification of a moderator, that is a

boundary condition, provides firms with useful insight about contextual factors that must be looked after if HPWS are to fulfil their promised potential, a topic the literature has not sufficiently focused on so far (Hong, Jiang, Liao & Sturman, 2017; Zhong, Wayne & Liden, 2016).

Theoretical Background and Hypotheses

High-Performance Work Systems and Psychological Capital

Though there is no universal agreement upon the specific practices that compose HPWS (other terms utilized include high-performance, high-involvement, and high-commitment work systems or work practices, best HR practices, and strategic human resources management, Lepak et al., 2006; Posthuma, Campion, Masimova & Campion, 2013), HPWS have typically been conceptualized and operationalized as the degree of organizational investment in key HR practices that include selective recruitment, systematic training and development, results-oriented performance appraisal, valued rewards, open communication, and employee participation and autonomy (e.g., Huselid, 1995; Posthuma et al., 2013; Subramony, 2009; Sun, Aryee & Law, 2007). This approach to the definition and measurement of HPWS was also adopted in the present study.

Psychological capital (PsyCap) is defined as "an individual's positive psychological state of development characterized by (1) having confidence (efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering towards goals, and when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain

success" (Luthans et al., 2007, p. 3). Empirical research attests to its developable nature, that it is malleable and can be cultivated by workplace conditions (Luthans & Youssef-Morgan, 2017). Considering this, we pose and test the hypothesis that PsyCap is enhanced by HPWS.

Argumentation based on the AMO framework.

The AMO framework posits that HPWS enhance a workforce's ability with practices that mostly fall within the "people flow" component of HPWS (Bamberger & Meshoulam, 2000): ensuring with sound staffing practices (e.g., targeted recruitment and sophisticated selection techniques) that the right individuals enter the organization who, along with existing employees, are consistently trained and developed (e.g., Appelbaum et al., 2000; Jiang, Lepak, Hu & Baer, 2012; Lepak et al., 2006; Subramony, 2009). Being cognizant that they possess the knowledge, skills, and other qualities required to perform their roles, but also that these skills will be updated or recalibrated when needed, should enhance employees' PsyCap. For example, belief in one's competence to face job demands and deliver performance should raise self-efficacy and optimism: self-efficacy increases with task mastery (Bandura, 1997), and optimism pertains to faith in one's capacity to positively influence future outcomes (Carver & Scheier, 2002). Moreover, constant updating or recalibrating of skills should nurture resilience, the ability to adapt to change, deal with uncertainty, and rebound from setbacks (Masten & Reed, 2002). Finally, extensive training to develop broad skills (Bamberger & Meshoulam, 2000; Pfeffer & Veiga, 1999) should cultivate hope, because such training would nourish capacity to generate alternative routes towards solving problems and overcoming obstacles (Snyder, 1994; 2002).

The AMO model also posits that HPWS enhance motivation by means of HR policies

that mainly fall within the "appraisal and rewards" component of HPWS (Bamberger & Meshoulam, 2000): results-oriented performance appraisals, availability of valued rewards, and internal career ladders (e.g., Appelbaum et al., 2000; Jiang et al., 2012; Lepak et al., 2006; Prieto & Santana, 2012; Subramony, 2009). This should also augment individual employees' PsyCap. For example, results-oriented appraisals serve as goal-setting mechanisms: challenging targets are agreed upon and ways to reach them are negotiated. Challenging goals along with roadmaps and tools to attain them should nurture hope, energy directed towards a goal along with awareness of different pathways to reach that goal (Snyder, Irving & Anderson, 1991; Snyder, 2002). Furthermore, clear goals, the skills to achieve them, and feedback on goal attainment create a positive psychological state of flow (Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005). Flow is accompanied by the conviction that one is able to meet demands and bring positive outcomes on one's own (Bakker, 2008), which means self-efficacy (Bandura, 1997) and optimism (Seligman, 1998), respectively.

Finally, according to the AMO model HPWS enhance opportunity via the "employee relations" component (Bamberger & Meshoulam, 2000): offering employees chances to participate in decision making, setting open communication channels, and allowing autonomy in utilization of skills, knowledge and experience (Lepak et al., 2006; Prieto & Santana, 2012; Subramony, 2009). Opportunity enhancement should also be linked with PsyCap increase. Knowing they can mobilize skills and knowledge according to their own choices should foster employees' self-efficacy, a firm belief that one can organize, utilize, and direct one's resources as needed (Bandura, 1997). Belief that they can influence future directions by inputting decisions should boost optimism, positive expectations about future outcomes

(Schneider, 2001). Open communication and involvement in decision making should increase awareness of developments and changes, hence, the capacity to react and bounce back in the face of challenging and adverse events, which is resilience (Masten & Reed, 2002). Finally, autonomy and opportunities to deploy the entire repertoire of one's talents should boost hope, through an awareness that alternative routes to reach a goal are available (Snyder et al., 1991).

The components of HPWS operate in synergy (e.g., Delery, 1998; Horgan & Mühlau, 2006; Huselid, 1995), hence, the effect of organization-level HPWS on individual PsyCap will be characterized by cumulativeness and efficiency. Cumulativeness means that the same component resource of PsyCap may be nourished by various components of HPWS, augmenting the effect. For example, we contemplated that broad skills training (ability-enhancing component of HPWS) should boost resilience. However, resilience should also be strengthened by open communication and employee participation in decision-making – opportunity-enhancing component. This means a stronger effect on PsyCap because of the cumulative effects of different HPWS components. Efficiency signifies greater certainty for the realization of the hypothesized effect (i.e., increase in PsyCap): if a HPWS component does not operate optimally, another component will be in place to accomplish the outcome (e.g., Delery, 1998). For example, in a particular organization performance appraisal (motivation-enhancing component) may fail to develop a clear view of alternative ways to achieve set goals, and hence, will not be effective in cultivating hope. This deficiency, however, may be compensated for by autonomy and choice in the utilization of one's talents (opportunity-enhancing component), which should promote hope (as seen earlier).

Argumentation based on COR theory.

The conservation of resources (COR) theory (Hobfoll, 1988, 1989, 2002) provides further theoretical justification for expecting a relationship between organization-level HPWS and individual employees' psychological capital. According to COR theory, individuals seek to retain, protect and accumulate resources. Resources are objects, conditions, energies or personal attributes that are functional and valued either in their own right or because they facilitate attainment of valued goals (Halbesleben, Neveu, Paustian-Underdahl & Westman, 2014; Hobfoll, 1988, 1989). Resources are distinguished into contextual and personal (Hobfoll, 2002). The former are located in an individual's immediate environment. Examples from the work context include learning and development opportunities, performance feedback, autonomy, and opportunities to input decisions (Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Fan, Liu & Zou, 2018; Hobfoll, 2011; Ten Brummelhuis & Bakker, 2012), all these practices have been characterized as HPWS. Personal resources are located within the individual and can be physical, affective, psychological and intellectual (Hobfoll, 2002). Personal psychological resources pertain to individuals' evaluations of their own capacity to control and influence their environment successfully (Hobfoll, Johnson, Ennis & Jackson, 2003), and this is where the components of PsyCap (self-efficacy, hope, optimism and resilience) fall (also Constantini, De Paola, Ceschi, Santori, Meneghini & Di Fabio, 2017; Hobfoll, 1989, 2002; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009).

A central assumption of COR theory, which is supported by empirical research (Weigl, Hornung, Parker, Petru, Glaser & Angerer, 2010; Xanthopoulou et al., 2009), is that the resources individuals possess help them to obtain additional resources (Hobfoll, 1989, 2002)

in a process of "gain spiral" (Hobfoll, 2001, 2011; Ten Brummelhuis & Bakker, 2012). The gain spiral may start from contextual resources that stimulate the generation of personal resources (Ten Brummelhuis & Bakker, 2012). Indeed, Hobfoll (2011) notes that whether employees have the resources to develop and grow depends on whether organizations provide the appropriate environment in terms of necessary systems, policies and opportunities. Based on this reasoning, we argue that contextual resources in the form of HPWS should foster the development of personal psychological resources in the form of PsyCap.

In addition, within the boundaries of COR theory different resources may contribute to the same effect (Halbeslehen et al., 2014). This concurs with the synergetic operation of practices contained within HPWS (e.g., Delery, 1998; Horgan & Mühlau, 2006; Huselid, 1995; Saridakis, Lai & Cooper, 2017), and means that the effect of organization-level HPWS on individual PsyCap will be characterized by effectiveness and cumulativeness. Effectiveness means increased certainty for the realization of the hypothesized effect (i.e., increase in PsyCap), because in the event that one HPWS sub-system does not operate optimally another sub-system will act as substitute. Cumulativeness means that the same component resource of PsyCap may be nourished by various HPWS practices, augmenting the effect. This means that cumulatively these different HPWS practices will have stronger effects on PsyCap.

Finally, the notion of resource caravans within COR theory (Hobfoll, 2001, 2002) suggests that certain resources do not exist in isolation but rather in aggregate, when one of them is present other related resources are also present and increase their potency. The four constituent resources of PsyCap act as a resource caravan because they mutually reinforce

each other and form a higher-order core factor (Gavrilov-Jerkovic, Jovanovic, Zuljevic & Brdaric, 2014; Youssef & Luthans, 2013; Luthans et al., 2015). This implies that enhancement of one PsyCap resource by HPWS is likely to help boost the other PsyCap resources, leading to an overall increase in PsyCap.

Hypothesis 1: Organization-level HPWS will be positively related to individual employees' PsyCap.

HPWS, Psychological Capital and Employee Attitudes

There is burgeoning evidence of a relationship between PsyCap and desirable employee attitudes (Datu, King & Valdez, 2018; Karatepe & Talebzadeh, 2016; Paek, Schuckert, Kim & Lee, 2015). Attitude formation is influenced by individuals' affective states, positive affect leads to positive evaluations and interpretations of events, conditions and interactions, and hence to more favorable attitudes and *vice versa* (Forgas, 2006; Weiss & Cropanzano, 1996). Strong PsyCap should, therefore, lead to the experience of positive affect because it brings sanguine expectations for future outcomes and a belief in one's ability to control one's fate and deal with potential challenges and setbacks (Avey, Luthans, Smith & Palmer, 2010; Tugade & Fredrickson, 2004). This enables us to posit that employees with stronger PsyCap will report greater job satisfaction and affective organizational commitment because their positive affect drives them to evaluate their jobs and employers more favorably. In other words, PsyCap is an antecedent to job satisfaction and organizational commitment.

Hypothesis 2: PsyCap will be positively related to job satisfaction (H2a) and affective organizational commitment (H2b).

From the viewpoint of COR theory, the process of resource gain, where contextual

resources generate personal resources, leads to positive work outcomes (Hobfoll, 1989; Ten Brummelhuis & Bakker, 2012). These include favorable work attitudes such as job satisfaction and organizational commitment (Ten Brummelhuis & Bakker, 2012). According to COR theory, therefore, we may expect organization-level HPWS to generate positive workplace attitudes amongst employees by means of developing their PsyCap, given that PsyCap is more proximal to individual work attitudes than HPWS. In the meanwhile, we have seen that empirical research highlights a link between HPWS and employee work attitudes. The above discourse directs towards a mediating role of PsyCap in the relationship of HPWS with job satisfaction and affective organizational commitment.

Hypothesis 3: PsyCap will mediate the cross-level relationship between organization-level HPWS and individual employees' job satisfaction (H3a) and affective organizational commitment (H3b).

The Moderating Role of an Interactional Justice Climate

It has long been argued that whether organizations meet their goals depends upon the creation of climates where employees perceive that organizational practices are fairly implemented (Gelens, Dries, Hofmans & Pepermans, 2013; Greenberg, 1990). This is in line with COR theory's suggestion that environmental conditions may facilitate (or hinder) the process of resource gain (Hobfoll, 2011; Ten Brummelhuis & Bakker, 2012), which helps explain why resources that appear valuable do not always have the expected effect (Hobfoll, 2001; Halbesleben et al., 2014). Specifically, authors point that HPWS may sometimes fail to deliver because their effectiveness is contingent upon the way managers communicate and implement them (Fan et al., 2018; Russell et al., 2018; Zhang et al., 2018). Applying this idea

to the present study, we speculate that HPWS, which are contextual resources, are more effective in producing gains in employees' PsyCap, a personal resource, when there is a climate of high interactional justice within the organization.

Organizational justice climate is the extent to which employees believe that organizational agents treat members of the organization fairly (Li & Cropanzano, 2009; Naumann & Bennett, 2000). Interactional justice refers to the personal treatment employees believe they receive from the organization and its agents (Bies & Moag, 1986; Tyler & Bies, 1990), and has two components: informational - communication of sufficient information with respect to policies and decisions - and interpersonal - treatment with respect and propriety (Bies, 2005; Colquitt, 2001; Greenberg, 1993). Following from the general definition of justice climate, we view interactional justice climate as the extent to which organizational members believe that line managers treat employees fairly when they interact with them at the personal level. Given the considerable variance across firms in the way organizational agents implement HPWS (Nishii & Wright, 2008; Sikora & Ferris, 2014), there should also be substantial variance between organizations in the way employees perceive that managers treat members of the organization when performing HR-related activities.

A climate of high interactional justice renders employees more trusting towards management (Den Hartog, Boon, Verburg & Croon, 2013; Kernan & Hanges, 2002) and their own line managers (Ambrose & Schminke, 2003). Trust, in turn, makes resource acquisition by individuals more likely (Halbesleben & Wheeler, 2015). Given that PsyCap is a resource, a high interactional justice climate should magnify the effects of HPWS on the development of

employees' PsyCap. From the perspective of the AMO model, there are also reasons to expect that a climate of high (vs. low) interactional justice magnifies the effects of organization-level HPWS on employee PsyCap. From the viewpoint of gained trust (above), higher trust in management should further boost the gains in PsyCap (articulated in H1). To illustrate this with respect to the ability-enhancing dimension, if employees trust organizational agents in the way they handle selection, training and career management the gains in self-efficacy and optimism (articulated in the development of H1) will be augmented. From another perspective, in a climate of high interactional justice (employees share the belief that people are treated cordially and communication is timely and sincere) the nourishing effects of HPWS on PsyCap will be stronger. To illustrate with the opportunity-enhancing dimension, chances to input decisions and autonomy in skill utilization should have a stronger nourishing effect on confidence (self-efficacy), hope and optimism when people believe that their views and choices will be met with propriety, consideration and will be given sincere feedback.

Hypothesis 4: Interactional justice climate will moderate the cross-level relationship between HPWS and PsyCap in such a way that when the interactional justice climate is high the relationship between HPWS and PsyCap will be stronger.

The Moderated Mediation Model

It follows, therefore, that HPWS will more strongly relate to employee attitudes through PsyCap when the interactional justice climate is high. This is because of the hypothesized stronger relationship of organization-level HPWS with individual employees' PsyCap under a climate of high interactional justice, meaning that these elevated levels of PsyCap will nurture especially positive attitudes towards the job and the organization. We therefore propose a

moderated mediation model (James & Brett, 1984; Preacher, Rucker & Hayes, 2007) in which HPWS and the justice climate interact to influence work attitudes through PsyCap.

Hypothesis 5: The interactional justice climate will strengthen the indirect effects of HPWS on employee job satisfaction (H5a) and affective organizational commitment (H5b) through PsyCap, in such a way that when the interactional justice climate is high HPWS will have a stronger relationship with employee attitudes.

The conceptual model is summarized in Figure 1.

Method

Participants and Procedure

Data were collected from 44 high-tech manufacturing enterprises located in six urban cities (Shenyang, Anshan, Dalian, Changchun, Qiqihaer, and Harbin) in northeast China. We focused on high-tech manufacturing enterprises because in the Chinese context such enterprises are more likely to make use of HPWS. Each company had at least 100 full-time employees and was more than five years old. Sixty-five companies that met these criteria were approached in the first stage, of which 44 (employee number *range* = 117 – 588, *M* = 291) agreed to participate. There were no significant differences in size and age between companies who agreed and did not agree to participate. Each HR department provided a list of full-time employees from which a random sample was selected (15 to 20 employees in each company). In total, 720 questionnaires were distributed, accompanied by an envelope to enclose the response and a cover letter that stressed the voluntary nature of participation. Employees returned 569 valid responses (78.8% response rate) that were matched with the 44 responses from HR managers. The mean number of employees who responded per firm was

12.93 (*SD* = 7.79), which allowed meaningful multi-level analysis. We tested whether the probability of remaining in the final sample (*n* = 569) among those who were contacted (*n* = 720) could be explained by demographics (i.e., age, organizational tenure and gender). The result showed that the demographic profile of those who responded was not different from those who were sent the questionnaires ($\chi^2 = 9.07$, *ns*).

HR managers (72.7% women) had a mean age of 41.5 years (*SD* = 5.89) and mean organizational tenure of 10.67 years (*SD* = 8.51). Employees (52.8% men) had an average age of 34.88 years (*SD* = 7.24), a mean tenure of 5.75 years (*SD* = 4.6), and 62.4% of them held bachelor's degrees or beyond.

Measures

The scales were translated using the back-translation procedure (Brislin, 1986) and were piloted with 16 full-time employees from a company that did not take part in the main study. Unless otherwise stated, all scales were Likert-type with 1 to 7 response format.

High-Performance Work Systems. The HR manager within each firm assessed on a scale of 22 items the extent to which their organization made use of seven core HR practices: extensive training, empowerment, results-oriented performance appraisal, employee competition and discipline management, employee selection, information sharing, and reward management. Items were adapted from existing measures (Evans & Davis, 2005; Su & Wright, 2012; Sun et al., 2007), or were originally developed to capture facets of HPWS, including employee competition and discipline management that are especially relevant to the Chinese context (e.g., Danford & Zhao, 2012; Su & Wright, 2012). Cronbach α was .94. The scale is found in the Appendix.

A confirmatory factor analysis (CFA) with HPWS treated as second-order factor and the seven practices treated as first-order factors indicated reasonable data fit [$\chi^2(188) = 341.57$, NFI = .897, IFI = .935, TLI = .919, CFI = .933, RMSEA = .056] with strong individual item factor loadings (range = .530 – .724), in line with the theorization of HPWS as an aggregation of multiple dimensions (Takeuchi et al., 2007; Takeuchi, Chen & Lepak, 2009). This supported operationalizing HPWS as a higher-order latent construct composed of the seven dimensions. Accordingly, we averaged items in each dimension to create dimension scores and we used these as indicators for the latent construct of HPWS in the analysis.

Psychological capital. This was measured with the Psychological Capital Questionnaire (PCQ) (Luthans, Avolio, Avey & Norman, 2007; Luthans, Youssef et al., 2007) that contains four six-item sub-scales. Cronbach α was satisfactory for all subscales (self-efficacy = .90, hope = .87, optimism = .85, and resilience = .82) and for the overall PCQ scale (.94). As suggested by Luthans, Avolio et al. (2007), PsyCap was modelled as a latent second-order factor comprising four first-order factors. A CFA suggested that the second-order factor model fitted the data reasonably well [$\chi^2(244) = 469.35$, NFI =. 904, IFI = .927, TLI = .913, CFI = .926, RMSEA = .068], with all items loading significantly ($p < .001$) on their corresponding factors, and each first-order factor loading heavily on the higher-order factor (loadings range = .873 – .956). Hence, the four dimensions were combined into one aggregate index reflecting an individual's PsyCap.

Interactional justice climate. This was assessed with an adaptation of Colquitt's (2001) nine-item scale (α = .92). The study focused on the climate of interactional justice, hence, the original items were reworded to refer to all employees and not only to the respondent. In

addition, "organization" was used as the reference entity. Sample items include "have supervisors treated employees in a polite manner in your organization?" and "have supervisors been candid in their communications with employees in your organization?" Consistent with theory and past research (Walumbwa, Hartnell & Oke, 2010; Walumbwa, Wu & Orwa, 2008), individuals' evaluations were aggregated at the level of the organization. Further support for the aggregation was provided by the intra-class correlations [ICC(1) and ICC(2)] and the within-group agreement [$r_{WG(j)}$]. The ICC(1) and ICC(2) value of .21 and .77, respectively, and the mean [$r_{WG(j)}$] value of .78 supported the aggregation of individual responses at organization-level (e.g., Liao & Rupp, 2005; Liu, Chen & Yao, 2011).

Job satisfaction. This was measured with the six-item scale (e.g., "I am satisfied with the nature of the work I perform") of Tsui, Egan and O'Reilly (1992). Cronbach α was 87.

Affective organizational commitment. This was measured with the six-item scale (e.g., "I really feel as if this organization's problems are my own") of Meyer, Allen and Smith (1993). Cronbach α was .78.

Correlational analysis showed a strong relationship between job satisfaction and affective commitment ($r = .68$, $p < .001$). That was in line with the fact that despite being clearly distinct constructs job satisfaction and organizational commitment tend to correlate highly, which may raise doubts as to whether respondents perceive them differently (Harter & Schmidt, 2008). To remove any concerns we performed a CFA that indicated reasonable data fit for the two-factor model [χ^2 (73) = 217.33, NFI = .883, IFI = .915, TLI = .901, CFI = .914, RMSEA = .081], but poor fit for the single-factor model [χ^2 (74) = 420.59, NFI = .774, IFI = .817, TLI = .803, CFI = .816, RMSEA = .151]; thus, demonstrating that the constructs

measured by the scales were perceived as different by respondents.

Controls. At individual level, we controlled for employee demographics, including gender, age, education level, and organizational tenure. At organizational level we controlled for organizational size and age, because these might relate to variations in HPWS across organizations (Liao, Toya, Lepak & Hong, 2009; Snape & Redman, 2010; Sun et al., 2007; Takeuchi et al., 2009).

Data were collected from two different sources (HR managers and employees). However, because a number of variables (i.e., PsyCap, interactional justice, job satisfaction, affective organizational commitment) were assessed via employee self-reports we tested for the possibility of common method bias (CMB). The Harman single factor test (Podsakoff, MacKenzie, Lee & Podsakoff, 2003; Podsakoff & Organ, 1986), which has substantial sensitivity in detecting CMB (Fuller, Simmering, Atinc, Atinc & Babin, 2016), yielded four factors with eigenvalues greater than one that accounted for 69.85% of the total variance. The first factor accounted for 23.53%, which is way below half of the total variance accounted for (Podsakoff & Organ, 1986). As additional testing, we utilized the unmeasured latent factor construct (ULMC) test (Podsakoff et al., 2003). The addition of a common method factor to the four-factor model did not improve the fit: the changes in the fit indexes ($\triangle\chi^2 = 388.541$, $\triangle df = 52$, $p < .01$, $\triangle$NFI = .009, $\triangle$IFI = .012, $\triangle$TLI = .012, $\triangle$CFI = .013, $\triangle$RMSEA = .003) were clearly below the recommended values to indicate a more parsimonious model (i.e., increase for at least .02 in CFI, Vandenberg & Lance, 2000; decrease of at least .015 in RMSEA, Chen, 2007). These results suggested against presence of CMB.

Analytical Approach

Given the multi-level nature of the data (individuals nested within groups), we utilized Hierarchical Linear Modelling (HLM2) with HLM 6.06. The moderated path analysis approach (Edwards & Lambert, 2007) was utilized to test the mediated moderation hypotheses 5a and 5b. This approach addresses the shortcomings of Baron and Kenny's (1986) moderated causal steps approach, and more clearly delineates the moderated and mediated nature of the relationships among variables (Liu, Liao & Loi, 2012). Finally, we conducted simple slope tests at low and high levels of the interactional justice climate (i.e. at values of one standard deviation below and above the mean score of the variable, Preacher et al., 2007), and plotted the positive cross-level moderating effects following the procedure recommended by Aiken and West (1991).

Results

The main and mediating effects of PsyCap.

Table 1 presents descriptive statistics and inter-correlations. Table 2 summarizes the results of the multi-level analyses that tested hypotheses 1 to 4. Hypothesis 1 predicted a positive relationship between HPWS (level 2) and PsyCap (level 1). Model 2 suggested a significant positive relationship of HPWS with PsyCap ($\gamma = .28$, $p < .01$), lending support to Hypothesis 1. Hypothesis 2 (H2a and H2b) proposed a positive relationship of PsyCap (level 1) with job satisfaction (level 1) and affective commitment (level 1). Models 6 and 10 indicated significant positive relationships of PsyCap with job satisfaction ($\gamma = .52$, $p < .01$) and affective commitment ($\gamma = .50$, $p < .01$). Therefore, H2a and H2b were both supported.

Hypothesis 3 (H3a and H3b) posited that PsyCap (level 1) would mediate the cross-level relationships of HPWS (level 2) with job satisfaction (level 1) and affective

commitment (level 1). Considering that testing for indirect effects should be conducted with the use of a product of coefficients (MacKinnon, Lockwood, Hoffman, West & Sheets, 2002), we utilized the PRODCLIN program (MacKinnon, Fritz, Williams & Lockwood, 2007) to test that hypothesis. Models 5 and 9 indicate significant relationships between HPWS and job satisfaction ($\gamma = .44$, $p < .01$) and affective commitment ($\gamma = .39$, $p < .01$). Models 7 and 11 show that HPWS remained significantly related to job satisfaction ($\gamma = .30$, $p < .01$) and affective commitment ($\gamma = .18$, $p < .05$) after the inclusion of PsyCap, which was significantly related to job satisfaction ($\gamma = .44$, $p < .01$) and affective commitment ($\gamma = .39$, $p < .01$). The PRODCLIN results indicated that the indirect effects of organization-level HPWS on individual-level job satisfaction and affective commitment via PsyCap were significant. Specifically, the 95% confidence intervals (CI) of the indirect effects were [.07, .21] and [.12, .27] for job satisfaction and organizational commitment, respectively, none containing zero. These results together suggested that PsyCap partially mediated the effects of HPWS on job satisfaction and affective commitment, lending support to H3a and H3b.

The multi-level interaction between HPWS and the interactional justice climate.

As seen in Table 2, the interaction effect of HPWS (level 2) with the interactional justice climate (level 2) on PsyCap (level 1) was significant ($\gamma = .33$, $p < .05$). We plotted this positive cross-level moderating effect and conducted simple slope tests (Aiken & West, 1991). Low and the high interactional justice climate were operationalized at one standard deviation below and above the mean score of the variable (Preacher et al., 2007). Figure 2 shows that under a high interactional justice climate the relationship between HPWS and PsyCap was stronger ($\gamma = .61$, $p < .01$) than under a low interactional justice climate ($\gamma = .15$,

$p < .01$). Therefore, Hypothesis 4 was also supported.

The moderated mediation model.

Hypothesis 5 (H5a and H5b), which posited that the interactional justice climate moderates the indirect effect of HPWS on job satisfaction and affective commitment via PsyCap, was tested with the use of the moderated path analysis approach (Edwards & Lambert, 2007). As shown in Table 3, under a high interactional justice climate the indirect effect of HPWS on job satisfaction via PsyCap was stronger and significant at higher level ($\gamma = .29$, $p < .01$) than under a climate of low interactional justice ($\gamma = .08$, $p < .05$). The difference was significant ($\triangle\gamma = -.21$, $p < .01$), lending support to H5a. The results (Table 3) also indicated that the indirect effect of HPWS on affective commitment via PsyCap was stronger and significant at a higher level under a high interactional justice climate ($\gamma = .24$, $p < .01$) than under a low interactional justice climate ($\gamma = .08$, $p < .05$). The difference was significant ($\triangle\gamma = -.16$, $p < .01$), which lent support to H5b. We conducted simple slope tests and charted these moderating indirect effects (Figures 3 and 4).

The results (Table 3) also revealed partial significant second-stage moderation effects (Edwards & Lambert, 2007). Specifically, the relationship of PsyCap with affective commitment controlling for HPWS varied significantly across different levels of the interactional justice climate ($\triangle\gamma = .13$, $p < .05$), whereas the difference in the second-stage effect of PsyCap on job satisfaction was not significant ($\triangle\gamma = .03$, *ns*). The differences of the direct effects of HPWS on job satisfaction ($\triangle\gamma = -.15$, $p < .01$) and affective commitment ($\triangle\gamma = -.24$, $p < .01$) were significant at different levels of the interactional justice climate. Hence, overall the results provided evidence for first-stage moderation, second-stage

moderation, moderated direct effects, and moderated indirect effects via PsyCap.

Discussion

The main objectives of the study were to address gaps in the literature by investigating the mediating role played by PsyCap in the relationship between organization-level HPWS and the key work attitudes of job satisfaction and organizational commitment that reflect employee well-being; and to test whether an interactional justice climate moderates the effects of HPWS on these attitudes through employees' PsyCap. By supporting the hypotheses, the findings vindicated the motives behind the investigation and have a number of theoretical and practical implications.

First, by demonstrating that PsyCap mediates the relationship between organization-level HPWS and individual employee job satisfaction and organizational commitment, the study contributes towards further opening up the so-called "black box" of the relationship between HPWS at the level of the organization and individual well-being, an issue of importance that is now receiving attention (e.g., Guest, 2017; Ogbonnaya et al., 2017). More specifically, building on the AMO model and the key tenets of COR theory, the work at hand shows that the resources provided by organization-level HPWS nourish the personal psychological resource of PsyCap, which in turn results in higher job satisfaction and organizational commitment. PsyCap pertains to "who you are" (Luthans et al., 2007), meaning that HPWS cause actual changes to the psychological capacities of individual employees for the better. Given that gains in PsyCap persist over time (Dello Russo & Stoykova, 2015), the effect can be enduring. The present study complements the research that draws on the social exchange account to explain the effects of HPWSs on job satisfaction and

organizational commitment, as it illustrates the veracity of an alternative – but not mutually exclusive – route. The idea that the two accounts should be seen as complementary is reinforced by the fact that we only found evidence of partial mediation.

Second, by showing that the direct and indirect relationships studied depend upon the climate of interactional justice in the organization, the study highlights the need to understand how the organizational context in which HPWS are implemented affects their impact. More specifically, the findings imply that the benefits of HPWS for key employee attitudes can only be fully realized when organizational agents provide adequate information and act in a fair and respectful manner when implementing such practices. This is in line with the view that the effectiveness of HPWS is contingent upon whether they are implemented under climates of fairness (Gelens et al., 2013; Greenberg, 1990), but also with the more general view that the effectiveness of HPWS depends on characteristics of the environment (e.g., Boxall, 2012).

Third, by considering and confirming an organization-level factor, HPWS, as a source of development of PsyCap the study responds to calls for identifying organization-level antecedents of individual employees' PsyCap by means of appropriate methodologies, such as multi-level designs (Newman et al., 2014). Knowledge of organization-level antecedents of PsyCap is still limited (Hsu & Chen, 2017), and the present study contributes to this domain.

Finally, a secondary contribution of the study was that it was conducted in China. Allegedly, East Asian economies started paying systematic attention to HR systems with some delay compared to western economies, while they display different cultures and workplace traditions (Ahlstrom, Levitas, Hitt, Dacin & Zhu, 2014; Chang, Wu & Liu, 2018). The findings, therefore, serve as evidence for the positive relationship of HPWS to attitudes

that reflect employee well-being regardless of national culture and economic context.

Practical Implications

Authors, including Hobfoll (2011), suggest that if organizations are to maximize the chances of meeting their objectives they must provide environments with resources that enable workers to grow. Our results concur with this point by suggesting that HPWS relate to individual employees' psychological resources, which in turn relate to key work attitudes that likely bring performance benefits (Van de Voorde et al., 2012). Given that increases in PsyCap can last for considerable periods (Dello Russo & Stoykova, 2015) the advantages HPWS bring should also be long-lasting. In addition, considering that the positive effects of PsyCap extend to a variety of work outcomes beyond employee attitudes (Newman et al., 2014; Luthans & Youssef-Morgan, 2017), the implication for management is that HR practices that fit into the notion of HPWS add substantial value.

However, the findings also demonstrate that to maximize these benefits of HPWS, firms must strive to build climates of high interactional justice. This means that organizations should carefully manage the elements of this form of justice. That may involve providing training and rewards to assure that managers and supervisors offer timely, clear, and plausible explanations about decisions and new policies and communicate at every level in a considerate and respectful manner.

PsyCap enables people to successfully deal with excessive demands (Luthans et al., 2015). Therefore, an allusion of the study is that via their cultivation of PsyCap HPWS could buffer or mitigate the negative effects of work intensification, which refers to work situations that are perceived to impose excessive and constantly increasing demands to employees

(Franke, 2015). Work intensification is allegedly common, including in Chinese firms (Dai & Tao, 2019; Yuan, 2017), and can have negative consequences for employees and subsequently employers (e.g., Mariappanadar, 2016; Omari & Paull, 2015).

Limitations and Future Research

Although we believe that there is no serious reverse causality problem in the study, the cross-sectional research design limits confidence in causal explanations. As a result, future research is encouraged to adopt designs in which independent, mediator, and outcome variables are measured at different points in time. In addition, the sample was restricted to a single industry (i.e., high-tech manufacturing enterprises). Though the AMO model itself was developed by studying manufacturing firms (Appelbaum et al., 2000), a more diverse sample of firms across different industries would allow for greater confidence in making generalizations.

Although we found that the interactional justice climate moderates the relationships between HPWS, PsyCap, and key employee attitudes, research on contextual moderators is in its relatively early stages. Investigation of additional boundary conditions is in order. Furthermore, interpersonal relationships and the treatment received by management occupy a central role in Chinese organizational life. National culture, which affects the way people experience and interpret events, may influence the nature of relationship between HPWSs and employee attitudes (Farndale & Sanders, 2017). Whether interactional justice climate strengthens the relationship of HPWS with individual-level employee attitudes that reflect well-being in societies where interpersonal relationships matter less is an issue that needs testing in future research.

HPWS were measured from the point of view of HR managers regarding the HR systems in place. Though this appears reasonable, there are two caveats to keep in mind. First, it is not necessarily the case that employees experience these systems as intended (Bowen & Ostroff, 2004; Kehoe & Wright, 2013). Notwithstanding that empirical research finds moderate to strong associations between organizational agents' ratings' and employees' perceptions of HPWS (Liao et al., 2009; Messersmith et al., 2011), future research could tap employees' own perceptions of HPWS (Kehoe & Wright, 2013). Second, the ratings of HR managers may not be accurate reflections of HR practices in place (Gardner & Wright, 2009; Wright, Gardner, Moynihan, & Allen, 2005). Hence, future research should consider utilizing ratings from multiple organizational agents, for example agents chosen according to their knowledge of HR practices that are specific to particular employee groups (Gardner & Wright, 2009; Bou-Llusar, Beltrán-Martin, Roca-Puig & Escrig-Tena, 2016).

Interactional justice climate was considered at the level of the organization, and was measured by means of aggregating responses of participants within each firm. Evidence attests to the conceptual and empirical validity of organizationally focused interactional justice (Byrne, 1999; Griffin, 2010; Rupp & Cropanzano, 2002). Using the organization as referent was in line with the fact that HPWS were also considered at the level of the organization, but also with the fact that the focus of commitment - one of the outcomes studied - was the organization (Lavelle, Rupp & Brockner, 2007). However, workplace justice is embedded within a social context, and the most salient social context in the case of interactional justice is arguably the immediate work group of the individual, such as the team or work unit who share the same line manager (Ambrose, Schminke & Mayer, 2013; Liao &

Rupp, 2005). Hence, future studies to replicate and extend the present work should consider employing interactional justice climate at the level of the work unit. Furthermore, taking into account that similarity of source or referent is likely to reveal stronger relationships (Rupp & Cropanzano, 2002; Lavelle et al., 2007), future studies may also consider the interaction between HPWS at work unit level (Den Hartog et al., 2013) and interpersonal justice climate at that same level.

Finally, in the present work we argued for the PsyCap perspective as alternative and complementary to the social exchange perspective for the link between HPWS and individual employee attitudes. The results vindicated the theoretical argumentation behind the PsyCap account. However, our case would be stronger if we had included in the design of the study variables that reflect the social exchange account and we had controlled for them. Future studies, therefore, should employ variables that reflect both perspectives in order to evaluate their relative merits.

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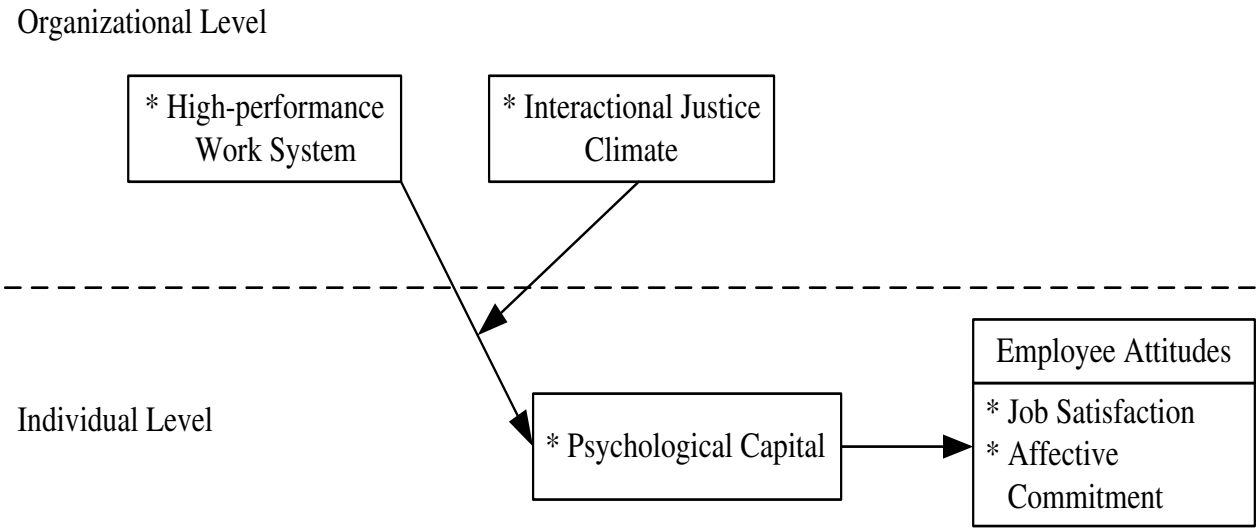


Figure 1. The conceptual multi-level model.

Table 1. Means, standard deviations and inter-correlations (N = 569 employees from 44 firms).

Variables	*Mean*	*SD*	1	2	3	4	5	6	7	8	9
1.Gender	0.59	0.41	_								
2. Age	34.88	7.24	.15*	_							
3. Educational level	4.54	1.71	-.08	-.20**	_						
4. Organizational tenure	5.75	4.60	.07	.67**	-.01	_					
5. Unit size	12.93	7.79	.01	.05	.13*	.07	_				
6. HPWS	4.85	0.77	-.06	-.03	-.22**	-.11	.15*	_			
7. Interactional justice climate	5.16	0.95	.02	-.05	.01	-.12	.03	.42**	_		
8. PsyCap	4.72	0.91	.01	-.06	.03	-.12	.14*	.29**	.49**	_	
9. Job satisfaction	4.94	0.84	.11	.02	-.13*	-.13*	.02	.50**	.53**	.45**	_
10. Affective commitment	5.10	1.04	- .01	.02	-.06	- .07	- .03	.46**	.52**	.35**	.68**

* $p < .05$, ** $p < .01$.

Table 2. Results of hierarchical linear modelling analysis.

Variables	*PsyCap*			*Dependent Variables*							
				Job Satisfaction				*Affective Commitment*			
	M1	*M2*	*M3*	*M4*	*M5*	*M6*	*M7*	*M8*	*M9*	*M10*	*M11*
Intercept (γ_{00})	4.65**	4.65**	4.69**	4.78**	4.79**	4.82**	4.80**	4.97**	4.99**	5.05**	5.01**
Level 1 control variables											
Gender (γ_{10})	.05	.05	.07	.16*	.11	.09	.08	−.02	−.03	−.04	−.07
Age (γ_{20})	.03	.05	.06	.08	.07	.08	.04	.06	.07	.06	.04
Educational level (γ_{30})	.05	.04	.05	−.06	−.04	−.06	−.07	−.05	−.06	−.10	−.11
Organizational tenure (γ_{40})	−.08	−.07	−.09	−.12	−.09	−.09	−.07	−.06	−.05	−.07	.05
Level 1 mediators											
Psychological Capital (PsyCap) (γ_{50})						.52**	.44**			.50**	.39**
Level 2 control variables											
Organizational size (γ_{01})	.14*	.11	.08	.07	.07	.05	.09	.07	.04	.09	.05
Organizational age (γ_{02})	.08	.06	.04	.06	.09	.07	.06	.08	.07	.07	.06
Level 2 independent variable											
HPWS (γ_{03})		.28**	.13		.44**		.30**		.39**		.18*
Level 2 moderator											
Interactional Justice Climate (γ_{04})			.37**				.34**				.45**
Cross-level Interaction											
HPWS×Interactional Justice Climate (γ_{05})			.31*				.20*				.33*
R^2	.02	.07	.14	.05	.11	.11	.26	.04	.10	.12	.22

* $p < .05$, ** $p < .01$.

Table 3. HLM results: The mediated moderation effects based on moderated path analysis.

Hypothesis/variable	HLM results			
Moderator variable: interactional justice climate	HPWS (X) →PsyCap (M) → Job Satisfaction (Y1)			
	stage		effect	
	First	Second	Direct	Indirect
	$P_{M,X}P_{M,X}$	$P_{Y_1,M}P_{Y_1,M}$	$P_{Y_1,X}P_{Y_1,X}$	$P_{M,X}\times P_{Y_1,M}P_{M,X}\times P_{Y_1,M}$
Low (-1 *SD*)	.15**	.50**	.37**	.08*
High (+1 *SD*)	.61**	.47**	.52**	.29**
Differences low and high	−.46**	.03	−.15**	−.21**
Moderator variable: interactional justice climate [b]	HPWS (X) →PsyCap (M) → Affective commitment (Y2)			
	stage		effect	
	First	Second	Direct	Indirect
	$P_{M,X}P_{M,X}$	$P_{Y_2,M}P_{Y_2,M}$	$P_{Y_2,X}P_{Y_2,X}$	$P_{M,X}\times P_{Y_2,M}P_{M,X}\times P_{Y_2,M}$
Low (-1 *SD*)	.15**	.53**	.20**	.08*
High (+1 *SD*)	.61**	.40**	.44**	.24**
Differences low and high	−.46**	.13*	−.24**	−.16**

* $p<.05$, ** $p<.01$.

$P_{M,X}$: path from HPWS to PsyCap; $P_{Y_1,M}$: path from PsyCap to job satisfaction; $P_{Y_2,M}$: path from PsyCap to affective commitment; $P_{Y_1,X}$: path from HPWS to job satisfaction; $P_{Y_2,X}$: path from HPWS to affective commitment.

Figure 2. The interactive effect of HPWS and the interactional justice climate on PsyCap.

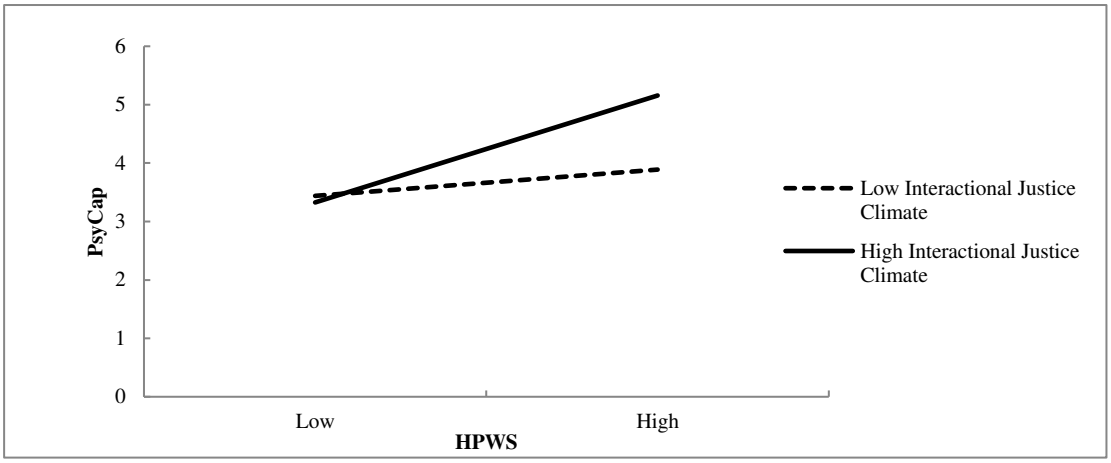


Figure 3. The interactive effect of HPWS and the interactional justice climate on job satisfaction.

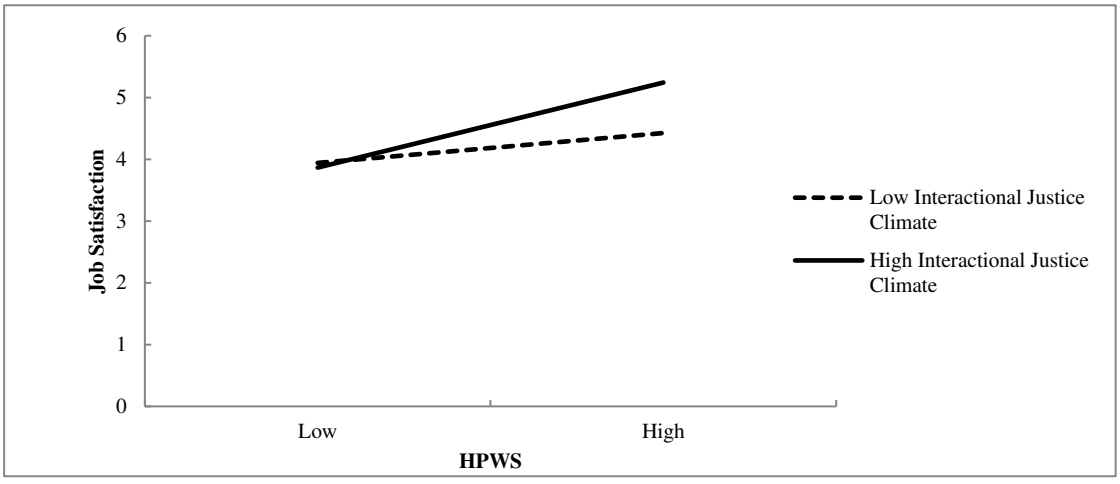
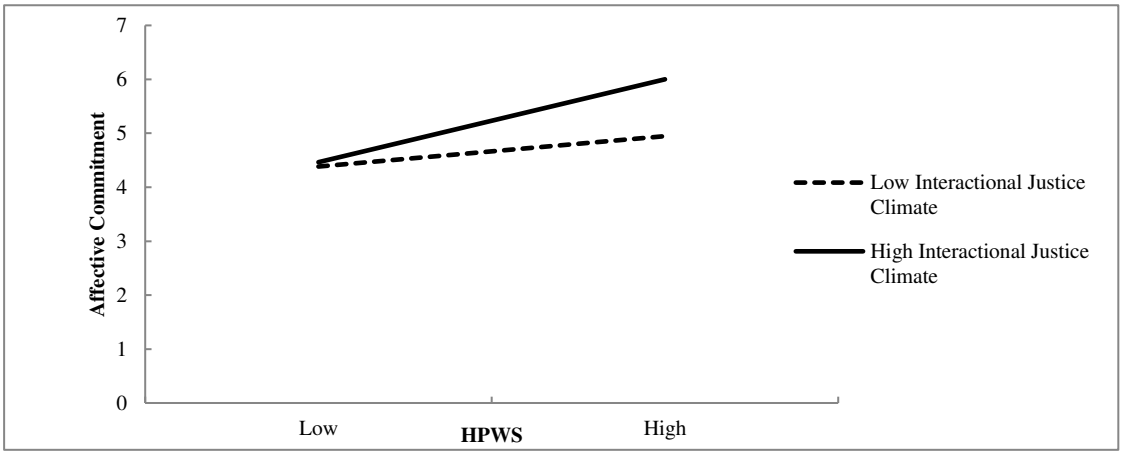


Figure 4. The interactive effect of HPWS and the interactional justice climate on affective commitment.



Appendix

The High Performance Work Systems scale.

1. More time and money is spent on employee training compared to our competitors.

2. Employees are provided with systematically structured training.

3. Both new and old employees are provided with systematically structured training.

4. Training programs are evaluated on a regular basis.

5. Regular surveys are conducted on employee attitudes and opinions.

6. A constructive feedback system is in place.

7. Teams where employees participate in management have been established.

8. Employees are empowered to make decisions .

9. Employee performance is based on objective, quantifiable results.

10. Results-based reward and punishment practices are utilized.

11. Pay is linked to employee performance appraisals.

12. There are concrete and clear performance appraisal indicators in place for employees.

13. Managers can be demoted according to performance.

14. There is open competition for critical positions.

15. We implement more strict discipline management than our competitors.

17. We dismiss or transfer employees by a forced ranking.

18. We focus on general competency (learning capacity) rather than skills in recruiting employees.

19. Employees are recruited from a large job market pool.

20. Employees have clear communication of news through multiple channels (e.g., e-mail and voice mail bulletins, intranet, newsletters).

21. The business strategy of the organization is frequently communicated to employees.

22. Short-term incentive compensation is offered to employees (e.g., performance bonus).

23. Key talents are offered competitive remuneration packages.