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High-performance work system and employee performance: the mediating roles of social exchange and thriving and the moderating effect of employee proactive personality

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Research on high-performance work systems (HPWS) has drawn primarily from social exchange theory and human capital theory to unlock the underlying mechanisms in relation to employee performance. In addition to social exchange and human capital theory, a personal resources perspective can also be used to explain the effects of HPWS. In this cross-level research, we examined the mediating roles of social exchange and thriving, and the moderating effect of proactive personality in the relationships between HPWS and task performance and organizational citizenship behavior (OCB) by analyzing a sample of 391 employees and 84 supervisors from 21 firms in China. Using multi-level analyses, social exchange and thriving were found to mediate the effects of HPWS on employee task performance and OCB. Furthermore, proactive personality attenuated HPWS's direct effect on thriving and indirect effects on employee task performance and OCB through thriving. Finally, we discuss theoretical contributions, and practical implications of the study, as well as future research directions.

Keywords: high-performance work system, organizational citizenship behavior, proactive personality, social exchange, task performance, thriving

Key points

1 High-performance work systems (HPWS) can enhance employee performance.
2 The effects of HPWS manifest not only through social exchange but also by contributing to employees' personal resources.
3 Employee proactive personality attenuates the effects of HPWS.

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Research has suggested that a high-performance work system (HPWS) serves as an important component that enables firms to become more effective and gain core competitive advantages (Aryee et al. 2012; Bowen and Ostroff 2004; Liao et al. 2009). HPWS refers to a group of internally coherent and consistent human resource (HR) practices that are designed to enhance employee competence, motivation, and commitment (Aryee et al. 2012; Datta, Guthrie, and Wright 2005). Research has shown that HPWS is associated with various desirable outcomes for employees, such as enhanced job performance and organizational citizenship behavior (OCB) (Jiang, Takeuchi and Lepak 2013; Kehoe and Wright 2013), increased organizational commitment and job satisfaction (Korff, Biemann and Voelpel2017; Messersmith, Patel and Lepak 2011; Takeuchi, Chen and Lepak 2009).

Given the positive impacts of HPWS on employee outcomes, there has been a growing interest among researchers in explaining how HPWS affects its presumed outcomes. Extant research has predominantly drawn from social exchange theory and human capital theory to unlock the underlying mechanisms in the HPWS literature (Jiang et al. 2012; Kehoe and Collins 2017). A social exchange process argues that employees perceive HPWS as benefits received from the organization and thus, reciprocate by engaging in task performance and OCB. A human capital view suggests that HPWS can improve employees' knowledge, skills, and abilities needed to perform better. In addition to developing a strong employee–employer relationship and enhancing employees' human capital, HPWS may carry more meanings for employees because excellent performance not only requires reciprocation (i.e. social exchange perspective) and employees' knowledge and skills (i.e. human capital approach), but also requires employees' personal resources, especially when encountering sustained stress or challenge (Buruck et al. 2016). Personal resources are positive self-evaluations that are linked to resiliency, and refer to individuals' sense of ability to control and influence their environment successfully (Xanthopoulou et al. 2009). It is imperative to explore how to promote personal resources because they play a crucial role in influencing employee behaviors (Clauss et al. 2018; Gilbert, Foulk and Bono 2018). However, this perspective has been neglected in the HPWS research. Thriving can be considered as a key personal resource (see Gerbasi et al. 2015) as it refers to the combined psychological experience of vitality and learning at work (Spreitzer et al. 2005).

Conservation of resources (COR) theory explains the relevance of personal resources. This theory assumes that when individuals have resources, they are likely to use them to gain new resources, a process referred to as the gain spiral effect (Hobfoll 2001). Likewise, HPWS may have the potential to induce resources gain spirals. When individuals are thriving through obtaining resources from HPWS, they have sufficient resources to engage in task performance and OCB. Thus, we extend the HPWS research by testing the mediating role of thriving in the relationships between HPWS and employee task performance and OCB beyond social exchange and human capital mechanisms.

Finally, we argue that the relationship between HPWS and employee thriving may differ among employees because they vary in their needs for HPWS. As the investment in HPWS is costly, it is critical to identify the boundary conditions under which organizations can reap more benefits from HPWS. Previous HPWS research has focused almost

exclusively on the moderating effects of situational factors, such as team characteristics, e.g. team cohesion and task complexity (Chang et al. 2014), and leadership styles (Jiang, Chuang and Chiao 2015). However, less is known about how personality traits moderate the effects associated with HPWS. As HPWS is theorized to offer employees resources in their work to conduct their jobs more effectively, a crucial issue pertains to which employees benefit most from HWPS. Employees who are by personality not proactive may, in particular, be interested in HPWS. HPWS offers a system in which employees are entitled to resources. This may be especially beneficial to workers low in proactivity, as they may be less inclined to negotiate special arrangements and may depend strongly on HPWS that offers a more structured, collective approach to motivate them (Bakker, Tims and Derks 2012). That is, proactivity is likely to serve as a key moderator distinguishing between those workers who need HPWS to be able to thrive at work and those who are able to thrive and perform without necessarily relying upon HPWS. Thus, we propose that the effect of HPWS on thriving may be contingent upon employees' proactive personality.

In sum, our study theorizes how thriving bridges the relationships between HPWS and employee task performance and OCB by establishing an incremental validity over the social exchange approach and the human capital view, and examines the moderating role of employee proactive personality.

Literature review and hypotheses development

In this study, we focus on HPWS including comprehensive recruitment, rigorous selection, extensive training, developmental performance management, performance-based compensation, flexible job design, participative decision-making, and information sharing (Jiang 2013; Sun, Aryee and Law 2007). Previous research has theorized and proposed the conceptualization of HPWS primarily based on the system view because HPWS can create mutually reinforcing, synergistic effects. Thus, the reasoning behind HPWS research is that the combined effects of the different components of HR practices are stronger than the sum of the individual ones (Aryee et al. 2012). In addition, the bundles of HR practices have been found to be more strongly related to organizational performance than individual practices combined (Subramony 2009). Hence, we analyze HPWS in line with dominant views postulating that HR practices should be regarded as synergetic.

Our study conceptualizes HPWS at the department level. Department supervisors play a vital role in carrying out HPWS (Brewster, Gollan and Wright 2013; Sikora and Ferris 2014). Accordingly, researchers usually use department supervisors to report HPWS (Jensen, Patel and Messersmith 2013; Pak and Kim 2018; Sikora, Ferris and Van Iddekinge 2015). Variability frequently exists at the department level because department supervisors may differ incompetence and willingness to deal with HR affairs, workload, and HR responsibility (Kuvaas, Dysvik and Buch 2014; Vermeeren 2014). As a result, we

operationalize HPWS at the department level, as the department is the crucial level in between organizational policies and employee experiences of available policies and practices.

Several theoretical perspectives have been used to unlock the black box in the HPWS research. Specifically, many studies have employed social exchange theory to explain the mediating mechanism of HPWS by focusing on perceived organizational support and organizational commitment as the mediators (Kehoe and Wright 2013; Messersmith, Patel and Lepak 2011). Some researchers have adopted human capital theory to argue that human capital is a major source of sustainable competitive advantage (Jiang et al. 2012). HPWS has an important role in attracting, fostering, and retaining talent, which is beneficial for organizational operational and financial performance (Jiang, Takeuchi and Lepak 2013).

Personal resources view (in particular thriving) is different from social exchange and human capital views. Human capital refers to employees' knowledge, skills, and abilities (Liao et al. 2009). Personal resources are positive self-evaluations that are linked to resiliency and refer to individuals' sense of ability to control and influence their environment successfully (Xanthopoulou et al. 2009). Personal resources and human capital overlap somewhat but also differ considerably. Personal resources are similar to human capital in that they refer to the resources that are subtle or intangible, yet are measurable, open to development, and can be managed for more effective job performance (Clauss et al. 2018; Liao et al. 2009). Nevertheless, personal resources and human capital do have important differences. First, personal resources focus on the positive psychological state that reflects how individuals evaluate themselves, whereas human capital is employees' knowledge, skills, and abilities that are used at work. Second, personal resources are 'who you are', whereas human capital is 'what you know'.[1]

The norm of reciprocity is the core rule underlying social exchange theory which proposes that individuals who receive favors from another party are likely to return these benefits as they feel obligated to repay the favors (Blau 1964). In contrast, thriving does not solely create felt obligations of individuals to reciprocate by increasing their efforts to the organizations because thriving results from a process of accumulating resources in line with COR theory (Hobfoll 1989).

The influence mechanisms of HPWS on employee task performance and OCB

First, we examine the influence processes of HPWS on employee task performance and OCB. We posit that HPWS is positively associated with employee task performance and OCB by facilitating social exchange and thriving.[2] Task performance refers to employees' behaviors that are assigned to accomplish their formal job requirements. In contrast to task performance, OCB is defined as 'extra-role performance that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization' (Organ 1988, 4). Task performance and OCB can be distinguished based on the work behaviors that fall within

the realm of formal job requirements. Task performance and OCB are relevant employee outcomes to both social exchange and personal resources.

Social exchange as a mediator between HPWS and employee performance

Social exchange theory provides a rationale for explaining how HPWS affects employee performance via social exchange. This theory suggests that when individuals receive favors from the other party, they are likely to return benefits to the giver in exchange (Blau 1964). Social exchange, a long-term and socio-emotional exchange relationship, is characterized by mutual trust, obligation, and commitment between employees and organizations (Colquitt et al. 2014). In line with social exchange theory, employees enjoying a high level of social exchange with the organization are likely to reciprocate the beneficial treatment by engaging in behaviors that the organization values (e.g. task performance and OCB). Prior work has also shown the positive links between social exchange and employee task performance and OCB (Shore et al. 2006; Song, Tsui and Law 2009).

We further argue that HPWS will enhance social exchange relationship between employees and their organizations. HPWS encompassing HR practices such as extensive training, comprehensive recruitment, rigorous selection, and developmental performance management reflect organizational investment in employees' development, and communicate messages to employees regarding organizations' intentions to develop long-term relationships with them (Takeuchi et al. 2007). HR practices such as flexible job design, participative decision-making, and performance-based compensation show organizations' trust and recognition for employees (Liao et al. 2009). In other words, HPWS is interpreted by employees as expressing trust, recognition, as well as investment – all signaling a social exchange relationship (Shore et al. 2006). Thus, we postulate that social exchange acts as a potential pathway through which HPWS influences employee task performance and OCB.

Hypothesis 1a: Social exchange mediates the relationship between HPWS and employee task performance.

Hypothesis 1b: Social exchange mediates the relationship between HPWS and employee OCB.

Employee thriving as a mediator between HPWS and employee performance

We introduce personal resources, and in particular employee thriving, as an explanatory mechanism in the relationship between HPWS and employee performance. Thriving is defined as the joint experience of vitality and learning at work (Spreitzer et al. 2005). Vitality, the affective component of thriving, refers to individuals having the energy and zest for work. Learning refers to the acquisition and application of new knowledge and skills, and represents a cognitive component of thriving. Gerbasi et al. (2015) argued that thriving can be perceived as a personal resource. We build on this argument and postulate that employees can experience more thriving through the resources offered by HPWS.

Conservation of resources theory helps to explain how HPWS contributes to employee performance through the mediating role of thriving. COR theory argues that individuals strive to retain, protect, develop, and invest resources. Resources are defined as 'objects,

personal characteristics, conditions, or energies that are valued by the individuals' (Hobfoll 1989, 516). COR theory states that individuals who have access to more resources are prone to reinvest these resources to realize a resources gain spiral (Hobfoll 2001). Hence, in line with COR theory, HPWS contributes to the accumulation of resources for employees, including learning and vitality as the indicators of thriving at work. Furthermore, COR theory explains that when employees have access to resources, and thrive at work, they are enabled to perform better and engage in OCB. In sum, thriving is likely to follow from HPWS, and relates to higher task performance and OCB.

To more specifically explicate the mediating effect of thriving, Spreitzer et al. (2005) argued that agentic work behaviors are the engine of thriving. Spreitzer et al. (2005) focused on three agentic work behaviors that enhance thriving: task focus, exploration, and heedful relating. Task focus refers to the degree to which individuals concentrate on their job requirements. Exploration occurs when individuals seek new ways of working by experimentation, risk-taking, discovery, and innovation behaviors. Heedful relating describes individuals' increased attention to co-workers' needs. The effectiveness of these three agentic work behaviors in boosting thriving has been supported in previous studies (Niessen, Sonnentag and Sach 2012; Paterson, Luthans and Jeung 2014).

We assume that HPWS, with such practices as comprehensive recruitment, rigorous selection, extensive training, information sharing, and developmental performance management, may enable three agentic work behaviors and therefore, employee thriving. Comprehensive recruitment and rigorous selection help firms acquire employees with knowledge and skills that are necessary for task performance. Extensive training provides employees with knowledge and skills with which to complete their tasks (Jiang et al. 2012). Information sharing encourages employees to disseminate their knowledge and information with their co-workers. When performance management has a developmental purpose (i.e. as a developmental performance management), it informs employees about improvements in their knowledge, skills, and performance (Chang et al. 2014). The enhanced knowledge and skills resulting from these five HR practices enable employees to be absorbed in their work. In addition to fostering task focus, these HR practices also contribute to exploration.

Learning theory posits that individuals learn by developing associations between the existing knowledge of individuals and the new domains of learning, and learning is the greatest when what they already know dovetails with new knowledge (Ellis 1965). Much of the knowledge resulting from these five HR practices assists employees to construct connections between the existing knowledge and new knowledge more easily (Chang et al. 2014), which facilitates exploration and learning. Such enhanced exploration further leads to employee thriving. Finally, when employees have broad knowledge and skills, they are more likely to understand the interconnections of tasks between themselves and co-workers, and pay attention to co-workers' needs (Carmeli and Spreitzer 2009). Such heedful relating ultimately promotes employee thriving. Research also suggests that knowledge resources enhance these three agentic work behaviors (i.e. task focus, exploration, and

heedful relating) and consequently, employee thriving (Niessen, Sonnentag and Sach 2012; Spreitzer et al. 2005).

Other aspects of HPWS such as flexible job design and participative decision-making also contribute to employee thriving via agentic work behaviors. Flexible job design and participative decision-making are often associated with enhanced job autonomy (Aryee et al. 2012; Chang et al. 2014; Liao et al. 2009). Individuals who feel autonomous will be more able to take on work responsibilities, which lead them to concentrate on their work, i.e. task focus (Spreitzer and Porath 2014; Spreitzer et al. 2005). In addition, when employees experience autonomy in work, they are more likely to have an opportunity to perform heedful relating (Spreitzer et al. 2005). In summary, we argue that flexible job design and participative decision-making offer job autonomy to employees which in turn augments agentic work behaviors. These agentic work behaviors further enhance employee thriving.

Moreover, flexible job design also reflects organizational trust for employees, as organizations believe in them and allow them to arrange their tasks themselves. Participative decision-making demonstrates organizational respect for employees' suggestions, which represents organizational trust and appreciation for them. Performance-based compensation signals organizational recognition for employee contributions (Gardner, Wright and Moynihan 2011; Liao et al. 2009). Employees who feel organizational trust and recognition are more likely to be motivated in their work and engage in heedful relating (Carmeli and Spreitzer 2009; Spreitzer et al. 2005). Organizational trust and recognition also induce exploratory behaviors, in part because employees feel it is safe to take risks (Spreitzer and Porath 2014). Taken together, HPWS enhances thriving by offering employees knowledge and skills, and by creating a better environment in which employees experience the sense of autonomy, trust, and recognition, which are the critical sources of agentic work behaviors necessary for thriving.

In line with COR theory, we further argue that thriving will positively predict employee task performance and OCB. As mentioned above, employees can thrive through the resources provided by HPWS. When employees are thriving, they have more resources available to engage in task performance and OCB. More specifically, vitality represents the affective component of thriving, which is pivotal to employee task performance and OCB (Fredrickson 2001; Porathet al. 2012). Furthermore, OCB is a way to learn new things, and learning is inherent in thriving (Spreitzer and Porath 2014). Thus, employees who thrive are likely to perform OCB. Some empirical studies have also demonstrated the positive effects of thriving on task performance and OCB (Porath et al. 2012; Spreitzer and Porath 2014). Therefore, we argue that the relationships between HPWS and employee task performance and OCB occur in part through employee thriving.

Hypothesis 2a: Thriving mediates the relationship between HPWS and employee task performance.

Hypothesis 2b: Thriving mediates the relationship between HPWS and employee OCB.

Proactive personality as a moderator between HPWS and employee thriving

The argument that HPWS enhances employee thriving is based on the premise that all employees have the same needs for resources. However, the effectiveness of HPWS will depend on the individual features of employees because they will vary in their needs for HPWS. In light of COR theory, we examine the moderating role of employee proactive personality in the HPWS–thriving link. Proactive personality refers to the extent to which individuals take action to influence their environment (Bateman and Crant 1993). Proactive personality differs from thriving. In particular, proactive personality refers to the personality trait that determines the tendency to which people initiate changes in their environment (Bateman and Crant 1993), while thriving refers to an experience of vitality and learning, which is not dispositional, but is subject to some contextual and individual enablers, such as involvement climate (Wallace et al. 2016), supervisor support climate (Paterson, Luthans and Jeung 2014), promotion focus (Wallace et al. 2016), and political skill (Cullen, Gerbasi and Chrobot-Mason 2018).

Employee proactive personality is likely to moderate the relationship between HPWS and thriving because it is closely aligned with agentic work behaviors, which are crucial in this link. More proactive employees will be better able to acquire sufficient resources through their proactive behaviors and depend less on resources that are provided by HPWS to increase employee agentic work behaviors.[3] Thus, HPWS will be particularly important for employees with low proactive personality to enhance thriving. By definition, proactive employees create favorable conditions and identify opportunities to improve things for themselves at work, regardless of whether the system has provided them with the necessary resources to do so (Crant 2000). Their initiatives may result in behaviors such as updating their knowledge and skills (Seibert, Kraimer and Crant 2001). Additionally, proactive employees are more likely to ask for feedback and help from their co-workers and supervisors (Li et al. 2011), which help to enrich their knowledge and skills. Research has also revealed that proactive personality is associated with increased motivation to learn (Brown et al. 2006; Major, Turner and Fletcher 2006). Moreover, proactive employees effectively regulate their work behaviors and work environments, which contributes to a greater sense of autonomy (Greguras and Diefendorff 2010). As depicted above, resources such as knowledge, skills, and senses of autonomy boost agentic work behaviors, and thus, ultimately lead to employee thriving. As HPWS and proactive personality overlap in their functions to foster employee thriving, the resources provided by HPWS are less important for employees with high proactive personality to increase thriving.

In contrast, HPWS is critical for less proactive employees to facilitate employee thriving. Rather than proactively shaping the environment, employees with low proactive personality only passively adapt to their work situations, fail to show initiative, and do not easily identify opportunity (Crant 2000). Therefore, less proactive employees do not easily acquire resources such as autonomy. As Bakker, Tims and Derks (2012) suggested, compared to employees with high proactive personality,

employees with low proactive personality are less likely to enrich their resources. In other words, employees with low proactive personality augment the need for resources provided by HPWS, making HPWS more important for thriving. Prior empirical studies indirectly support this idea. For instance, Li et al. (2011) demonstrated that developmental feedback has stronger impacts on task performance and helping for less proactive employees. Based on the above arguments, we hypothesize:

Hypothesis 3: Proactive personality moderates the relationship between HPWS and employee thriving, such that the relationship is stronger when employee proactive personality is low than when employee proactive personality is high.

Taken together, the combined relationships under study are summarized in a moderated mediation model. Specifically, thriving mediates the relationship between HPWS and employee task performance (OCB). This indirect effect, however, depends on employee proactive personality. For employees with low proactive personality, the relationship between HPWS and thriving will be stronger than for high proactive employees. Consequently, the indirect effect between HPWS and employee task performance (OCB) via thriving will be more pronounced when proactive personality is low than when proactive personality is high. Therefore, we state the following hypotheses:

Hypothesis 4a: Proactive personality moderates the indirect effect of HPWS on employee task performance through thriving, such that the indirect effect is stronger when employee proactive personality is low than when employee proactive personality is high.

Hypothesis 4b: Proactive personality moderates the indirect effect of HPWS on employee OCB through thriving, such that the indirect effect is stronger when employee proactive personality is low than when employee proactive personality is high.

In summary, the research model is presented in Figure 1.

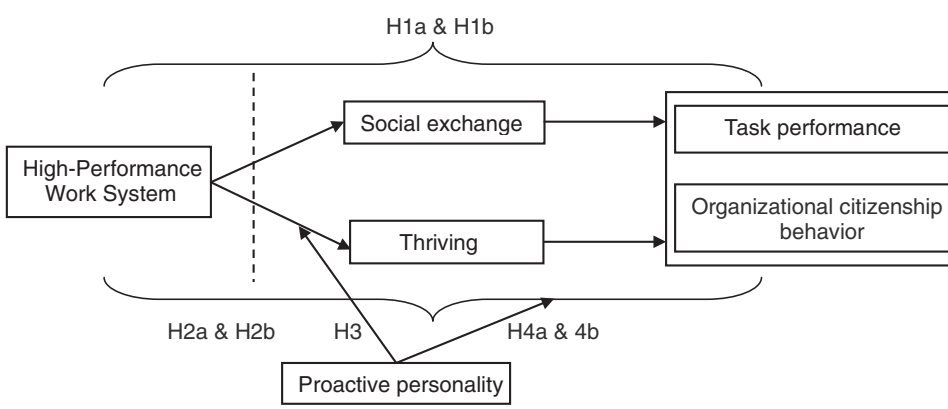

Figure 1 Theoretical model

Methods

Sample and procedures

Data for this study were collected from Shandong, Hubei, and Zhejiang provinces in China. The sample covers the software development, manufacturing, and electric power generation industries. To control for common method bias, separate questionnaires were developed and administrated to employees and department supervisors. A cover letter attached to each questionnaire explained that participation was voluntary, that the purposes of the survey were only for research, and that the confidentiality of their responses was assured. Employees completed a survey including items tapping thriving, proactive personality, social exchange, employee competence, and demographic information. The department supervisors provided the assessment of task performance and OCB for their subordinates. Furthermore, department supervisors also rated HPWS that the firms implemented for their department employees. Prior to collecting the study data, we contacted HR executives in each company and asked them to randomly pick departments in their firm.

A total of 442 employees and 88 department supervisors from 21 firms participated in the survey. We used a matched code to identify each employee's response and that of the corresponding supervisor. We received responses from 413 employees (response rate = 93.44%) and 86 supervisors (response rate = 97.73%). Twenty-two employees and two supervisors had to be excluded because supervisors of 10 employees belonging to two departments failed to respond, eight employee surveys had incomplete information, and four employees belonged to two departments in which <3 members had responded. Thus, our final sample included 391 employees and 84 department supervisors from 21 firms. The average number of employee respondents per department was 4.65 (with a range of 3–10 employees). Among 391 employees, about half of participants were male (53.20%); 82.10% had college or undergraduate degrees, 5.63% had postgraduate degrees; their average age was 29.28 years old (SD = 5.80); their average tenure in the organization was 4.69 years (SD = 4.70). The average department size was 18.98 (SD = 14.58) employees. The average age of these firms was 16.53 years (SD = 17.13). A majority of firms had <500 (61.90%) employees.

Measures

All of the original scales were developed in English and were presented in Chinese. To ensure the validity and reliability of scales, we used back-translation procedures.

High-performance work system

We adopted Jiang's (2013) 18-item HPWS scale developed in the Chinese context. We conceptualized HPWS at the department level, department supervisors were asked to assess the use of HPWS. Sample items in their survey are 'The company invests considerable time and money in training for department employees', and 'Performance appraisals provide department employees feedback for personal development'. A 5-point Likert scale

ranging from 1 ('strongly disagree') to 5 ('strongly agree') was used. Following the prior literature (Aryee et al. 2012; Liao et al. 2009), we calculated the mean scores of all HR practices to represent HPWS. The Cronbach's alpha for the overall scale was 0.91. The loadings of the 18 items used to measure HPWS were all higher than 0.62, and the average variance extracted (AVE) value was 0.65, demonstrating high levels of both internal consistency and convergent validity (Hair et al. 2013).

Task performance

We measured task performance using four items from Chen, Tsui and Farh's (2002) scale. This scale was evaluated by department supervisors based on a 7-point response scale ranging from 1 ('strongly disagree') to 7 ('strongly agree'). A sample item is 'Always completes job assignments on time'. The coefficient alpha for the scale was 0.90. The loadings of the four items were all higher than 0.78, and the AVE value was 0.70. These results indicated high levels of both internal consistency and convergent validity for this measure.

Organizational citizenship behavior

We measured OCB using a 9-item scale developed by Farh, Hackett and Liang (2007). This scale contains three dimensions: altruism, voice, and conscientiousness. Department supervisors were asked to report this scale using a 7-point response format (1 = 'strongly disagree' through7 = 'strongly agree'). Altruism was measured by three items. A sample item is 'Initiates assistance to co-workers who have a heavy workload'. Voice was rated by two items. One sample item is 'Actively raises suggestions to improve work procedures or processes'. Conscientiousness includes four items. A sample item is 'Willing to work overtime without receiving extra pay'. The coefficient alpha for the overall scale was 0.94. The loadings of the nine items were all higher than 0.73, and the AVE value was 0.63, displaying high levels of both internal consistency and convergent validity.

Thriving

We adopted a 10-item thriving scale from Porath et al. (2012). This scale consists of two dimensions: vitality and learning. Employees assessed five items representing vitality (e.g. 'I feel alive and vital at work.') and five items representing learning (e.g. find myself learning often at work.') using a 5-point Likert scale ranging from 1 ('strongly disagree') to 5 ('strongly agree'). The coefficient alpha was 0.82 for the overall scale. The loadings of the 10 items were all higher than 0.58, and the AVE value was 0.51. These results suggested a high level of internal consistency and an acceptable convergent validity.

Social exchange

We adopted an 8-item social exchange scale from Shore et al. (2006). Employees were instructed to report this scale on a 5-point Likert scale (from 1 = 'strongly disagree' to 5 = 'strongly agree'). A sample item is 'My organization has made a significant investment in me'. The Cronbach's alpha for this scale was 0.76 in our study. The loadings of the eight

items were all higher than 0.64, and the AVE value was 0.54, demonstrating an acceptable internal consistency and an adequate convergent validity.

Proactive personality

We measured this variable using 10 items from Seibert, Crant and Kraimer's (1999) scale. This scale was rated by employees based on a 5-point scale (1 = 'strongly disagree', 5 = 'strongly agree'). One sample item is 'I am constantly on the lookout for new ways to improve my life'. The Cronbach's alpha for this scale was 0.86 in our study. The loadings of the 10 items were all higher than 0.64, and the AVE value was 0.497. These results displayed a high level of internal consistency and an acceptable convergent validity.

Control variables

In addition to employee demographic variables such as gender, age, education level, and organizational tenure, we also controlled for department size, firm age, and firm size. We included these control variables to test whether the outcome variables could be explained on the basis of the immediate contexts in which employees operate, and in particular the size of their departments and organizations. This also allows us to rule out an alternative explanation, which is that HPWS may be more likely to be implemented in larger organizations, through which employee outcomes are facilitated by the fact that they are working in larger organizations rather than due to HPWS (Sun, Aryee and Law 2007). Firm age was included as a control variable because firm age was involved with evolution or adoption of HR practices and learning curve advantages in performance (Guthrie 2001). Finally, previous studies have suggested that employee competence (e.g. human capital) mediates the effects of HPWS (Aryee et al. 2016; Chang and Chen 2011; Liao et al. 2009; Nieves and Quintana 2018; Raineri 2017). Therefore, we controlled for employee competence. We measured this variable using a 3-item scale developed by Sheldon et al. (2001). A sample item is 'I felt very capable in what I did'. The Cronbach's alpha for competence scale was 0.84.

Analytical strategy

The present data have a nested structure as employees are nested in departments, and departments are nested in firms. Thus, we adopted Hierarchical Linear Modeling 3 (HLM3) with HLM software to test hypotheses. To check whether our focus on department-level HPWS was appropriate, we ran a two-level null model with department-level HPWS as the dependent variable. The result showed that within-firm variance and between-firm variance of department-level HPWS were 0.48 and 0.07, respectively. Within-firm variance accounted for 87.3% of total variance, revealing a large proportion of variance in HPWS among different departments in the same organization. As a result, it is appropriate that we use department-level HPWS to test our research hypotheses.

We estimated the three-level null models with thriving, task performance, OCB, and social exchange as the dependent variables, respectively. The results showed that the within-department, between-department, and between-firm variance of thriving were 0.27, 0.13,

and 0.02, respectively. $ICC(1)_{department}$ associated with thriving was 30.95%. As such, $ICC(1)_{department}$ for task performance, OCB, and social exchange were 61.06%, 63.25%, and 34.55%, respectively. These results justified HLM as the appropriate analytical technique.

With regard to moderated mediation effects (hypotheses 4a and 4b), we conducted a parametric bootstrap procedure (Preacher and Selig 2012) to estimate the indirect effects at high (1 SD above mean) and low (1 SD below mean) levels of the moderator and their effect differences. In addition, we constructed the Monte Carlo confidence intervals adopting R software.

Results

Confirmatory factor analyses

We performed confirmatory factor analyses (CFAs) to examine the discriminant validity of individual-level variables (Akhtar et al. 2016) included in our study: thriving, social exchange, competence, task performance, OCB, and proactive personality. Following Little et al. (2002), we treated the first-order dimensions of thriving (e.g. Vitality and learning) and OCB (e.g. altruism, voice, and conscientiousness) as the indicators of their respective latent variables in the CFAs. Furthermore, as recommended by Bagozzi and Edwards (1998) (see also Lam et al.'s (2015) empirical study), we formed five parcels of items as indicators for proactive personality by averaging the items with the highest and lowest loading. The results of CFAs in Table 1 showed that the six-factor base model fit data best among all models we examined, χ^2 = 768.99, df = 260, χ^2/df = 2.96, RMSEA = 0.07, Tucker-Lewis

Table 1 Comparison of measurement models

Model	χ^2	df	χ^2/df	$\Delta\chi^2(\Delta df)$	RMSEA	TLI	CFI
Six-factor base model	768.99	260	2.96		.07	.90	.91
Five-factor model 1	879.99	265	3.32	111.00***(5)	.08	.88	.89
Five-factor model 2	1012.12	265	3.82	243.13***(5)	.09	.85	.87
Five-factor model 3	953.22	265	3.60	184.23***(5)	.08	.86	.88
Five-factor model 4	999.26	265	3.77	230.27***(5)	.08	.85	.87
Three-factor model	1480.32	272	5.44	711.33***(12)	.11	.77	.79
One-factor model	3448.73	275	12.54	2679.74***(15)	.17	.39	.44

N = 391. ***p < 0.001.

RMSEA = root mean square error of approximation. TLI = Tucker-Lewis index. CFI = comparative fit index. Six-factor base model: thriving, social exchange, competence, task performance, organizational citizenship behavior (OCB), and proactive personality. Five-factor model 1: thriving and social exchange were combined into one factor. Five-factor model 2: thriving and competence were combined into one factor. Five-factor model 3: task performance and OCB were combined into one factor. Five-factor model 4: thriving and proactive personality were combined into one factor. Three-factor model: thriving, social exchange, and competence were combined into one factor; task performance and OCB were combined into one factor. One-factor model: all six factors were combined into one factor.

Table 2 Means, standard deviations, and correlationsamong study variables

Variables	*M*	SD	1	2	3	4	5	6	7	8	9
Level 1 variables											
1 Gender	.47	—									
2 Age	29.28	5.80	.02								
3 Education level	2.92	.47	.07	−.07							
4 Tenure	4.69	4.70	.03	.72***	−.12*						
5 Social exchange	3.58	.72	−.04	−.07	.10*	−.13**					
6 Employee competence	4.04	.76	−.01	.04	−.06	.13*	.39***				
7 Thriving	3.89	.64	.01	.09	.03	.01	.59***	.41***			
8 Task performance	5.55	1.07	.03	.13**	.01	.14**	.22***	.29***	.33***		
9 Organizational citizenship behavior	5.26	1.09	.01	.23***	−.05	.17***	.16**	.22***	.27***	.73***	
10 Proactive personality	3.74	.59	−.05	.05	.02	.10*	.33***	.48***	.44***	.27***	.32***
Level 2 variables											
1 Department size	18.98	14.58									
2 High-performance work system	3.92	.73	.12								
Level 3 variables											
1 Firm size	1.48	.68									
2 Firm age	16.53	17.13	.05								

N (Level 1) = 391; *N* (Level 2) = 84; *N* (Level 3) = 21. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
Gender: 0 = male, 1 = female. Education level: 1 = junior high school and below; 2 = senior high school; 3 = college or undergraduate; 4 = post-graduate and over. Firm size: 1 = <500; 2 = between 500 and 2000; 3 = more than 2000.

index (TLI) = 0.90, comparative fit index (CFI) = 0.91. The value of RMSEA meets the suggested criteria of below 0.08, and the values of TLI and CFI also meet the recommended criteria of at least 0.90 (Hoyle 1995). In addition, the results of Chi-square difference tests reported in Table 1 demonstrated that the six-factor base model was superior to the six alternative models. These results provided clear evidence for the distinctiveness of the six variables in our study.

Descriptive statistics

The means, standard deviations, and correlations for all study variables are shown in Table 2. Thriving was positively associated with task performance ($r = 0.33$, $p < 0.001$) and OCB ($r = 0.27$, $p < 0.001$). Social exchange was positively related to task performance ($r = 0.22$, $p < 0.001$) and OCB ($r = 0.16$, $p < 0.01$). These results provided preliminary support for the hypotheses.

Hypothesis testing

Table 3 displays the results of the HLM analyses. As presented in model 1, HPWS was positively related to task performance ($\gamma = 0.49$, $p < 0.05$). Model 3 showed that HPWS was also positively associated with OCB ($\gamma = 0.72$, $p < 0.001$).

Hypotheses 1a, 1b, 2a, and 2b proposed that social exchange and thriving would mediate the relationships of HPWS with employee outcomes. As reported in Table 3, HPWS was positively related to social exchange ($\gamma = 0.15$, $p < 0.05$) and thriving ($\gamma = 0.19$, $p < 0.05$). Next, we simultaneously entered HPWS, thriving, and social exchange in models 2 and 4. Results showed that social exchange was associated with higher task performance ($\gamma = 0.20$, $p < 0.05$) and OCB ($\gamma = 0.16$, $p < 0.05$). The relationships between thriving and the two performance outcomes were significant (for task performance, $\gamma = 0.16$, $p < 0.05$; for OCB, $\gamma = 0.11$, $p < 0.05$). Meanwhile, the impacts of HPWS on two performance outcomes (for task performance, $\gamma = 0.38$, $p < 0.05$; for OCB, $\gamma = 0.58$, $p < 0.01$) were weaker than models 1 and 3. Hence, hypotheses 1a, 1b, 2a, and 2b were supported.

In order to further confirm the significance of the cross-level indirect effects, we used a parametric bootstrap procedure written in R software as recommended by Preacher and Selig (2012). With 20 000 Monte Carlo re-samples, the results revealed that there were positive indirect relationships between HPWS and task performance (indirect effect = 0.03, 95% CI = 0.002, 0.070) and OCB (indirect effect = 0.021, 95% CI = 0.001, 0.051) via thriving. Both CIs excluded zero, demonstrating the significance of the indirect effects. Moreover, HPWS had significant indirect effects on task performance (indirect effect = 0.03, 95% CI = 0.001, 0.074) and OCB (indirect effect = 0.024, 95% CI = 0.002, 0.055) via social exchange. These results provided further support for hypotheses 1a, 1b, 2a, and 2b.

Hypothesis 3 predicted an interaction effect between HPWS and proactive personality in relation to thriving. As recommended by Hofmann and Gavin (1998), we used the group means centering approach for employee proactive personality and added group means of proactive personality, and the interaction term between HPWS and group mean of proactive personality when assessing cross-level interaction effect. Model 6 showed that

Table 3 Results of hierarchical linear modelinganalyses

Outcome variables	Task performance		Organizational citizenship behavior		Thriving		Social exchange
Predicting variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Level 1 variables							
Intercept	5.59*** (.09)	5.60*** (.09)	5.31*** (.09)	5.30*** (.09)	3.87*** (.05)	3.87*** (.05)	3.57*** (.05)
Gender	−.06 (.07)	−.04 (.06)	−.14* (.07)	−.09 (.05)	−.03 (.07)	.001 (.05)	−.09 (.06)
Age	−.01 (.01)	−.01 (.01)	.01 (.01)	.003 (.01)	.007 (.007)	.01 (.01)	−.01 (.01)
Education level	.06 (.15)	.02 (.14)	.03 (.18)	−.005 (.16)	.02 (.04)	.06 (.04)	.10 (.07)
Tenure	.02* (.01)	.01 (.01)	.01 (.01)	.01 (.01)	−.005 (.01)	−.01 (.01)	−.01 (.01)
Social exchange		.20* (.09)		.16* (.06)			
Employe ecompetence		.04 (.05)		.02 (.05)			
Thriving		.16* (.06)		.11* (.05)			
Proactive personality						.42*** (.06)	
Level 2 variables							
Department size	−.01 (.01)	.001 (.005)	−.002 (.007)	−.004 (.006)	−.002 (.004)	.001 (.004)	−.002 (.005)
High-performance work system (HPWS)	.49* (.18)	.38* (.16)	.72*** (.16)	.58** (.19)	.19* (.08)	.09 (.06)	.15* (.06)
Mean proactive personality						.23** (.07)	
HPWS × Mean proactive personality						−.19 (.19)	
Level 3 variables							
Firm size	−.07 (.13)	−.07 (.12)	−.13 (.13)	−.14 (.13)	−.02 (.06)	−.04 (.05)	−.01 (.06)
Firm age	.001 (.004)	.003 (.004)	.004 (.004)	.004 (.005)	−.01 (.01)	−.01 (.01)	−.01 (.01)
Cross-level interaction							
HPWS × Proactive personality						−.24*** (.05)	

N (Level 1) = 391; N (Level 2) = 84; N (Level 3) = 21. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
Unstandardized coefficients are presented, with the corresponding standard errors in parentheses.

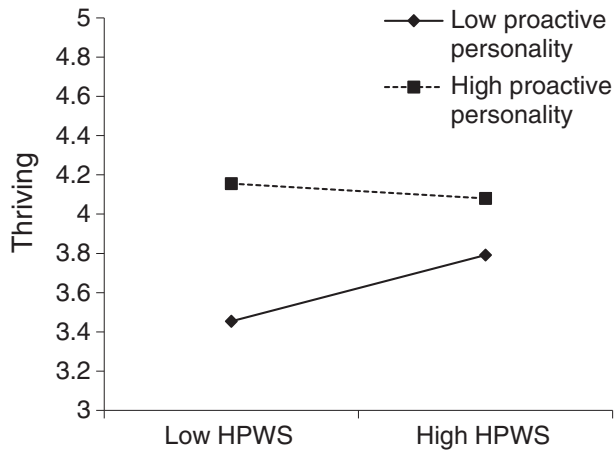

Figure 2 The moderating effect of proactive personality in the relationship between high-performance work system and thriving

the interaction term of HPWS and proactive personality on thriving was significant ($\gamma = -0.24$, $p < 0.001$). To depict the moderating effect of proactive personality, we plotted the moderating effect and calculated the simple slopes, adopting Aiken and West's (1991) procedure. Figure 2 showed that there was a significant and positive relationship (simple slope = 0.23, $p < 0.01$) between HPWS and thriving when proactive personality was low, but a non-significant relationship (simple slope = −0.05, ns) when proactive personality was high. Thus, hypothesis 3 was fully supported.

Hypotheses 4a and 4b expected a moderated mediation model in which the indirect relationships between HPWS and outcomes via thriving vary with different levels of proactive personality. To examine these two hypotheses, we again used the parametric bootstrap procedure to estimate the indirect effects of thriving at higher and lower level of proactive personality. For task performance, the indirect effect was significant when proactive personality was low (indirect effect = 0.037, 95% CI = 0.008, 0.078), but not significant when proactive personality was high (indirect effect = −0.008, 95% CI = −0.035, 0.013). The indirect effect difference between the two levels was significant (difference = −0.045, 95% CI = −0.089, −0.011), lending support to hypothesis 4a. Additionally, for OCB, the indirect effect was significant when proactive personality was low (indirect effect = 0.025, 95% CI = 0.002, 0.056), but not significant when proactive personality was high (indirect effect = −0.006, 95% CI = −0.025, 0.009). The indirect effect difference between the two levels was significant (difference = −0.031, 95% CI = −0.066, −0.003). Therefore, hypothesis 4b was supported.

Discussion

The current study showed that, in line with the social exchange approach, social exchange mediated the effects of HPWS on employee task performance and OCB. In addition,

consistent with the personal resources explanation, thriving mediated the positive relationships between HPWS and employee task performance and OCB. Furthermore, the results showed that proactive personality moderated the indirect effects of HPWS on employee task performance and OCB through thriving, such that the indirect effects were stronger when proactive personality was low than when proactive personality was high. Hence, we show that HPWS fuels the personal resources of employees, and enhances thriving at work. This is important as employees who perceive to be thriving at work are better able to perform their jobs, and indeed contribute more in terms of task performance and OCB. Moreover, the study shows that less proactive employees may have higher needs to receive formal practices by the organizations to obtain working conditions which stimulate them to thrive at work. These findings extend the prior HPWS literature and offer important implications for organization practices.

Theoretical contributions

This study contributes to previous research in many ways. First, by testing the mediating effects of social exchange and thriving, our study sheds light on the influence processes through which HPWS facilitates employee performance, and responds to calls in prior HPWS research. Scholars have argued that future study should be from different approaches to better clarify the process by which HPWS fosters employee desirable behaviors and attitudes (Jiang, Takeuchi and Lepak 2013). Previous work has drawn upon social exchange theory and human capital theory to explore how HPWS affects employee performance (Liao et al. 2009; Takeuchi et al. 2007). However, these mediating relationships fail to fully capture personal resource linkages that may have important effects on employee outcomes (Clauss et al. 2018; Xanthopoulou et al. 2009). Our findings show that after controlling for the human capital mechanism, i.e. competence; HPWS indirectly affects employee task performance and OCB through thriving and social exchange. That is, thriving is a novel explanatory mechanism linking HPWS to employee performance, and has an incremental contribution over and above the social exchange approach and the human capital view. Moreover, the results of models 2 and 4 in Table 3 displayed the positive relationships between HPWS and employee task performance ($\gamma = 0.38$, $p < 0.05$) and OCB ($\gamma = 0.58$, $p < 0.01$) when simultaneously adding HPWS and mediators (social exchange, thriving, as well as employee competence) as predictors, which suggest that there may be other mediators accounting for such relationships, such as organization-based self-esteem (OBSE). OBSE refers to 'the self-perceived value that individuals have of themselves as organization members acting within an organizational context' (Pierce et al. 1989, 625). HPWS reflects organizations' investment in employees, and communicates messages to employees concerning how much organizations value them (Liu et al. 2013). Consequently, we argue that HPWS may boost employee OBSE. We encourage scholars to conduct additional research testing whether HPWS facilitates employee task performance and OCB via OBSE.[4]

Furthermore, by examining the moderating role of employee proactive personality, this study identifies a boundary condition under which organizations can reap more benefits from HPWS. Previous HPWS research has almost exclusively focused on the

moderating effects of situational factors, such as team characteristics, e.g. Team cohesion and task complexity (Chang et al. 2014), and leadership styles, e.g. empowerment leadership and service leadership (Chuang, Jackson and Jiang 2016; Jiang, Chuang and Chiao 2015). However, few studies have explored how personality traits influence the relationship between HPWS and employee performance. In this study, we postulated that the cross-level effect of HPWS on thriving relies on employee proactive personality. Our findings suggest that proactive personality weakens the relationship between HPWS and thriving. This result complements prior HPWS literature that investigated the moderating effects of environmental factors. Additionally, there is a debate between a universalistic approach and the contingency approach in the HPWS research (Delery and Doty 1996). A universalistic approach posits that there is an ideal HPWS which can drive organizational performance in any conditions for any organizations. Yet, a contingency approach emphasizes that the extent to which HPWS facilitates organizational performance depends on certain boundary conditions. Consistent with the prediction of the contingency approach, this study finds that the relationship between HPWS and thriving is significant and positive when employee proactive personality is low, but is non-significant relationship when employee proactive personality is high. These results thus lend support to the contingency approach. Moreover, we do not propose the hypothesis that employee proactive personality moderates the effect of HPWS on social exchange because there is no theoretical research or empirical evidence to guide this prediction. However, we ran the analysis by adding social exchange as an outcome of the interaction effect between HPWS and proactive personality but the result was not significant ($\gamma = -0.19$, *ns*).

Moreover, the multi-level design our study uses is a strength as well. Some recent studies on the black box of 'HRM-outcomes' have suggested that HRM research lacked use of the multi-level paradigm (Jiang, Takeuchi and Lepak 2013; Peccei and van de Voorde in press).This is an important omission in that HR practices are usually perceived at the department level. Hence, it is necessary to utilize the multi-level approach in the research on HPWS. Our findings also respond to and extend the HPWS literature.

Finally, this study contributes to the thriving literature. Prior research has indicated that thriving is a result of contextual factors and individual characteristics, such as involvement climate (Wallace et al. 2016), servant leadership (Walumbwa et al. 2018), transformational leadership (Niessen et al. 2017), psychological capital (Paterson, Luthans and Jeung 2014), promotion focus, and prevention focus (Wallace et al. 2016). Thus far, there has been limited insight into the issue of whether HPWS can result in thriving. Our findings that HPWS is a situational trigger, and that thriving is a mechanism to employee performance, enrich our understanding of the enablers that shape thriving.

Practical implications

This study has important management implications for organizations. We find that HPWS is an important predictor of employee task performance and OCB. This result suggests that the investment in HPWS pays off. As a result, managers should pay more

attention to the implementation process when introducing HPWS into organizations. Research has suggested that supervisors' HR responsibility and goal congruence with their organizations are the pivotal factors facilitating their implementation efforts of HPWS (Whittaker and Marchington 2003; Zhang et al. 2018). Thus, the implementation of HPWS should be included in a supervisor's job description. In addition, when supervisors' goals are consistent with those of their organizations, mutually beneficial outcomes may occur (Ozcelik 2013). The implementation of HPWS is an effective approach to achieve organizational goals (Becker and Gerhart 1996). Consequently, firms should take the interests of supervisors into full consideration when designing organizational strategies, which enables supervisors to effectively carry out HPWS.

Moreover, equal attention should be focused on thriving that also contributes to employee performance. Previous research has shown that thriving can be promoted through decision-making discretion, and building up involvement climate (Porathet al. 2012; Wallace et al. 2016). Therefore, managers should provide job autonomy and opportunities to participate in decision-making so employees feel energized by the work they do. Besides, as the implementation of HPWS is costly, managers should be aware of the boundary conditions under which organizations can gain more benefits from HPWS. We find that HPWS and employee proactive personality may substitute each other in predicting thriving. Consequently, managers should move away from a 'one-size-fits-all' logic and consider individual differences which can enable organizations to make optimized choices with regard to the implementation of HPWS.

Study limitations and future research directions

As with all research, our study has several limitations that could be explored in future research. First, we collected data from two sources (i.e. employees and department supervisors) which mitigated the potential impacts of common method variance on our findings. However, the data we obtained were cross-sectional in nature, which limited our ability to make conclusions about causal inferences. We collected data from different sources and bootstrapped the regression analyses to obtain robust results but it might have been that higher performing employees experience thriving at work, and may be more likely to be offered HPWS by their managers. Hence, reversed causality might exist. Thus, future research needs to adopt longitudinal research designs to rigorously test the hypothesized relationships over time. Second, as our study was conducted in the Chinese context, the generalizability of our findings to other cultural contexts remains an empirical question. Therefore, future research should examine whether our findings are also applicable to other parts of the world.

A third potential limitation of this study is that we used department supervisors to report HPWS. Research has argued that department supervisors undertake added HR responsibilities (e.g. recruitment, training, performance appraisal, and promotion) today (Jiang 2013; Kuvaas, Dysvik and Buch 2014). Department supervisors may acquire HPWS information from HR departments and implement and convey HR practices to employees. As a result, department supervisors play a crucial role in implementing HPWS

(Brewster, Gollan and Wright 2013; Sikora and Ferris 2014). Correspondingly, some researchers have used department supervisors to assess HPWS (Jensen, Patel and Messersmith 2013; Pak and Kim 2018; Sikora, Ferris, and Van Iddekinge 2015). However, that approach did pose a weakness in the current research. For example, HPWS rated by department supervisors may not be consistent with HPWS experienced by the employee. Extant research has indeed suggested that this misalignment may exist (Liao et al. 2009; Nishii and Wright 2008), as managers may have imperfect understanding of the available HR practices as well as of the needs of their employees for HPWS. Future research should explore the factors that narrow the discrepancy between department-level HPWS and employee-experienced HPWS.

Another suggestion for future research pertains to the question of how HPWS may contribute to employee thriving at work. We have used a personal resources perspective to argue that employees may thrive at work when appropriate HPWS is available to them. However, future research may dig deeper into the issue of how the bundles of practices assist employees to thrive in their jobs. For instance, it may be that employees see HPWS as contributing to a perception of organizations as taking care of all the different aspects of the employment relationships (such as performance management, training, and development), and that these positive attributions of the organizations contribute to psychological safety and a feeling that one is thriving at work.

Conclusion

This study integrated a personal resources perspective and a social exchange approach to theorize and test the mediating mechanisms of the relationship between HPWS and employee performance. With multi-level multisource data, results showed that thriving and social exchange mediated the effect of HPWS on employee performance. In addition, we hypothesized and found that HPWS and employee proactive personality reduced the impact of one another on employee thriving. Through this study, we not only advanced new knowledge concerning how HPWS affects employee performance but also inspired scholars to explore other explanatory mechanisms in relation to the HPWS–performance association.

Notes

[1] We thank the anonymous reviewer for this suggestion.

[2] We thank the anonymous reviewer for this suggestion. To examine the incremental contribution of thriving in explaining how HPWS affects employee task performance and OCB, we should control for the explanations of social exchange theory (i.e. social exchange) and human capital theory. In our study, social exchange is treated as a key variable rather than a control variable in that prior research commonly adopted perceived organizational support and organizational commitment as proxy variables of social exchange perspective to explore the underlying mechanisms associated with HPWS (Kehoe and Wright 2013; Liao et al. 2009; Messersmith, Patel and Lepak 2011), and did not directly measure social exchange. Hence, it is imperative to theorize and

test the mediating role of social exchange in the relationship between HPWS and employee performance. Additionally, extant work employed human capital theory to investigate the influence process of HPWS by directly measuring employees' competence, knowledge, and human capital as the mediators (Chang and Chen 2011; Liao et al. 2009; Liu et al. 2017; Lopez-Cabrales, Pérez-Luño and Cabrera 2009). Thus, the human capital mechanism (i.e. competence) is included as a control variable in our study.

[3] We thank the anonymous reviewer for this suggestion. Proactive personality belongs to neither personal resources nor human capital by its nature. Proactive personality refers to the personality trait that is difficult to change (Bateman and Crant 1993), whereas both personal resources and human capital can be built and enhanced with the help of training and interventions (Clauss et al. 2018; Gilbert, Foulk and Bono 2018; Liao et al. 2009). However, employees with high proactive personality acquire resources more easily than employees with low proactive personality (Bakker, Tims and Derks 2012). This is one reason why we propose proactive personality as a moderator of the relationship between HPWS and thriving.

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