

**Friend or Foe? The Impact of
High-Performance Work Practices on Workplace Bullying**

Denise Salin, PhD, Professor
Department of Management and Organization
Hanken School of Economics
P.O.Box 479, 00101 Helsinki, Finland
E-mail: denise.salin@hanken.fi
(Corresponding author)

Guy Notelaers, PhD, Professor
Department of Psychosocial Science, Faculty of Psychology,
University of Bergen,
P.O.Box 7807, 5020 Bergen. Norway
guy.notelaers@uib.no

Acknowledgements: This work was supported by the Academy of Finland under Grants 266294 and 308843 and by the Research Council of Norway under Grant 250127. The authors would like to thank Micaela Rosenlew for help with data collection.

Friend or Foe? The Impact of High-Performance Work Practices on Workplace Bullying

Abstract

The aim of this paper is to examine the relationship between high-performance work practices (HPWPs) and workplace bullying, and identify possible mediators. The study presents hypotheses based on two competing perspectives: a mutual gains perspective, arguing that HPWPs lead to higher perceptions of justice and less role conflict, thereby reducing the risk of bullying; and, a critical perspective, arguing that HPWPs lead to work intensification and competition among colleagues, and thereby to more bullying. A two-wave survey (n=209) was conducted among business professionals in Finland. The results show that HPWPs are associated with less bullying, and justice and role conflict mediated the relationship. Thus, the results provide support for the mutual gains perspective on HPWPs, challenging prevailing assumptions in the bullying literature that suggest performance-enhancing HR practices are a risk factor. Instead, the results point to the significance of HPWPs as an important tool to prevent bullying.

Keywords: high-performance work practices; justice; workplace bullying; role conflict; work intensification

Practitioner note:

What is currently known

- It is unclear how high-performance work practices (HPWPs) affect employee well-being
- in particular, little is known about how HPWPs affect social well-being
- it is debated whether HPWPs reduce or increase the risk of workplace bullying

What this paper adds

- this study examines how HPWPs affect the risk of workplace bullying
- the results suggest that HPWPs reduce bullying by increasing justice and decreasing role conflict
- according to this study, HPWPs do not increase competition or perceived workload

Implications for practitioners

- work environment factors affect the risk of workplace bullying
- HPWPs can be seen as an important tool for reducing the risk of workplace bullying
- to do so, HPWPs should be designed so that they increase perceived justice and decrease role conflict

Friend or Foe? The Impact of High-Performance Work Practices on Workplace Bullying

Extensive research has shown that workplace bullying has severe negative consequences for both the individuals and organizations concerned, including negative effects on employee well-being and attitudes, and costs for organizations (Hoel, Sheehan, Cooper, & Einarsen, 2011; Nielsen & Einarsen, 2012). This makes it important to better understand the risk factors for bullying, and how management may reduce that risk through their policies and decisions. The prior research has shown strong support for the work environment hypothesis, which attributes the risk of bullying to factors in that environment (Hauge, Skogstad, & Einarsen, 2007; Salin & Hoel, 2011). Yet, the possible relationship between human resource (HR) practices and bullying has to date been largely overlooked in the literature. To the extent that HR practices have been discussed, they have typically been portrayed as potential risk factors (e.g. Rayner & Lewis, 2003), and HR practices designed to elicit high performance have often been feared to lead to abusive work climates (Ashkanasy, Bennett & Martinko, 2016; Pichler, Livingston, Ruggs & Varma, 2016; Samnani & Singh, 2014). However, the empirical evidence is to date scarce, and prevailing assumptions largely based on theoretical argumentation.

This paper provides a first empirical examination of a broad range of HR practices and the risk of workplace bullying. We focus on a set of HR practices typically labelled high-performance work practices (HPWPs), as the previous research has shown they affect a range of employee outcomes, attitudes and behaviors (Messersmith, Patel, Lepak, & Gould-Williams, 2011; Ogonnaya & Messersmith, 2019; Peccei & Van De Voorde, 2019; Wu & Chattervedi, 2009). First, we study the relationship between HPWPs and workplace bullying, and second,

explore the mechanisms explaining a possible relationship. More specifically, we draw our hypotheses from two competing models. These are a positive, “mutual gains” perspective arguing that HPWPs lead to higher perceptions of justice and less role conflict, thereby reducing the risk of bullying, and a critical, “conflicting outcomes” perspective arguing that HPWPs lead to work intensification and competition among colleagues, and in turn to more bullying. The arguments for each of these perspectives are set out in more detail in the next section.

The contribution of this paper is thus two-fold. First, it furthers our understanding of how HPWPs affect interpersonal behavior and social well-being, and the mechanisms through which that occurs. Thus, it contributes to the debate on mutual gains versus conflicting outcomes, providing support for the former by showing that HPWPs reduce the risk of interpersonal problems in the form of bullying. Also, this work responds to calls for more research on employee outcomes and employee-centered HRM (Guest, 2017), specifically as the effects of HPWPs on interpersonal behavior and social well-being have, to date, received surprisingly little attention in HR research (cf. Van De Voorde, Paauwe, & Van Veldhoven, 2011). Second, the results challenge prevailing assumptions in the literature on workplace mistreatment, which typically portray HPWPs as a risk factor for abuse, incivility and bullying (Ashkanasy et al., 2016; Lewis & Rayner, 2003; Salin & Hoel, 2011; Samnani & Singh, 2014). Finding instead support for a protective effect calls for a more nuanced discussion on the relationship between HPWPs and workplace bullying. The results suggest that HPWPs may in fact be helpful in reducing bullying, an important finding given the negative effects of bullying on both employee well-being and organizational performance (Hoel et al., 2011; Nielsen & Einarsen, 2012).

High-Performance Work Practices and Employee Outcomes

High-performance work practices (HPWPs) have been defined as “a group of separate but interconnected human resource (HR) practices designed to enhance employees’ skills and efforts” (Takeuchi, Lepak, Wang, & Takeuchi, 2007; p. 1069). While there is no absolute agreement among either scholars or practitioners on what exactly the group comprises, there is typically widespread agreement that it at least includes sophisticated approaches to recruitment and selection, incentive-based compensation systems, extensive employee involvement, rigorous performance appraisal processes, and both generic and company-specific training (Chuang & Liao, 2010; Huselid, 1995; Messersmith et al., 2011). A central tenet is the idea of high-performance work systems, where synergies arise from bundling practices together, giving rise to mutually reinforcing impacts (Boon, den Hertog, & Lepak, 2019; Huselid, 1995). Attention has typically been paid to HPWPs for their potential to raise performance (Appelbaum et al., 2000; Huselid, 1995). This is often explained through the AMO framework: HPWPs are seen to affect employee abilities and skills, motivation, and opportunity to contribute (Appelbaum et al., 2000; Ogbonnaya & Messersmith, 2019).

The literature typically highlights the positive outcomes of HPWPs, suggesting the practices are associated with greater job satisfaction, commitment, and empowerment (Messersmith et al., 2011; Peccei & Van De Voorde, 2019; Takeuchi et al., 2007). At the same time, more critical voices have been raised, and results concerning effects on employee well-being have been mixed, with some studies finding relationships between HPWPs and decreased well-being, including stress and burnout (Kroon et al., 2009; Ogbonnaya & Messersmith, 2019; Zhang, Zhu, Dowling, & Bartram, 2013). This has fueled a more critical perspective on HPWPs, emphasizing that they are ultimately a management tool designed to control employees, in order

to maximize performance and, thus, profit (Legge, 1995). Improved performance may therefore come at the expense of individual employees' well-being, through work intensification and management-by-stress (Ramsay, Scholarios, & Harley, 2000). Rather than building on a unitary win-win view, where employee and organizational interests are aligned, HPWPs might be based on the exploitation of employees and thus affect workers negatively (Kroon et al., 2009; Zhang et al., 2013).

Overall, there is mixed evidence on the outcomes of HPWPs with regard to individual employees and in particular their well-being (Kilroy et al., 2016; Kroon et al., 2009; Ogbonnaya & Messersmith, 2019; Zhang et al., 2013). Studies on HPWPs and well-being have often been restricted to aspects of happiness rather than other forms of well-being (Peccei & Van De Voorde, 2019). The effects of HPWPs on social well-being and interpersonal relations have to date received limited attention, with the exception of some studies examining effects on trust, climate, and cooperation (see Van De Voorde et al., 2011). This paper aims to address the gap by analyzing the effects of HPWPs on workplace bullying, an interpersonal phenomenon with substantial implications for employee well-being.

Workplace Bullying, Risk Factors and the Potential Role of HPWPs

Workplace bullying refers to “harassing, offending, or socially excluding someone or negatively affecting someone’s work” (Einarsen et al., 2011, p. 22). Persistent and regular exposure to negative social behaviors over a longer period of time, together with a perceived position of inferiority, that is, an inability to successfully defend yourself, are typically core elements of definitions of workplace bullying (Nielsen & Einarsen, 2018). Bullying has been shown to have a great impact on both employee well-being and attitudes (Nielsen & Einarsen,

2012), and most likely also on employee performance (Hoel et al., 2011). Despite this, bullying and also its prevention have to date largely been studied in isolation from the traditional HR literature. In fact, in the bullying literature, the HRM discipline and HR function have often been approached with a fair degree of skepticism. For instance, Lewis and Rayner (2003) described HRM as a wolf in sheep's clothing and argued the philosophy and components of HRM "may create an environment in which bullying can remain unchallenged, allowed to thrive or actually encouraged in an indirect way" (p. 370). Similar arguments have been echoed in research on incivility and abusive supervision, where it has been argued that work intensification and competition stemming HPWPs may create fertile ground both for abusive supervision and for rude behavior and undermining among colleagues (Pichler et al., 2016; Samnani & Singh, 2014).

As discussed earlier, the research on HPWPs has found some support for a work intensification effect (Ehrnrooth & Björkman, 2012; Heffernan & Dundon, 2016; Kroon et al., 2009; Ogonnaya & Messersmith, 2019). The relationship between a stressful work environment and bullying has been studied extensively, and a large number of empirical studies, both cross-sectional and longitudinal, point to a positive association between job demands and workplace bullying (see Salin & Hoel, 2011 for an overview). Stress causes frustration, which employees may try to cope with by engaging in aggression and counterproductive workplace behaviors (cf. Fox & Spector, 1999), such as bullying. Furthermore, employees experiencing very high workloads may have little time for constructive conflict management, which may in turn allow conflicts to escalate into bullying over time. If HPWPs lead to greater job pressures and stress (e.g. Ehrnrooth & Björkman, 2012; Kroon et al., 2009; Ogonnaya & Messersmith, 2019), it is likely they may also lead to more bullying.

HPWPs may also give rise to more bullying through another complementary mechanism, that is, increased competition. Samnani and Singh (2014) discuss how performance-enhancing compensation systems, an important and integral part of high-performance work practices, may generate counterproductive behaviors as an unintended, undesired consequence. Performance-enhancing work practices may stimulate competition among colleagues, particularly when rewards are scarce and the total amount of rewards available is fixed, thus setting individual employees up to compete with each other (Pichler et al., 2016; Samnani & Singh, 2014). Workplace bullying researchers have reported that bullying is more common in competitive environments, where employees may be motivated to take to aggressive methods to prove their worth and hinder competitors (cf. Salin & Hoel, 2011).

On the other hand, while there are strong arguments as to why HPWPs may lead to more competition and work intensification, which are likely to be associated with more bullying, we can also identify processes through which HPWPs are likely to improve working conditions and the work environment in ways that could be expected to reduce the risk of bullying. According to the work environment hypothesis, workplace bullying can largely be attributed to a poorly functioning work environment (e.g. Hauge, Skogstad, & Einarsen, 2007; Salin & Hoel, 2011). HPWPs typically seek to stimulate higher performance by empowering and involving employees in decision-making, improving competence and knowledge sharing, creating shared mental models, and clarifying expectations (Boxall & Macky, 2009; Ehrnrooth & Björkman, 2012; Evans & David, 2005). They are thus likely to improve the employee's feeling of control and increase autonomy (Evans & Davis, 2005; Kilroy et al., 2016). More specifically, Evans and Davis (2005) examined how HPWPs led to improved performance by affecting the internal social structure. One of the mechanisms they studied in more detail was role making. They

argued that HPWPs psychologically empower employees to adopt an active work orientation, and proactively define their individual role within the organization. Thus, employees are better equipped to negotiate their role, and less subject to the whim of other role holders' static expectations. Similarly, Kilroy et al. (2016) found that HPWPs decreased role conflict and role clarity among health care professionals. Role stressors, both role ambiguity and role conflict, have been shown to be associated with a higher risk of bullying (Reknes, Einarsen, Knardahl, Lau, 2014). In fact, of all the work environment characteristics, role conflict has been found to be one of the strongest predictors of workplace bullying and harassment (Bowling & Beehr, 2006; Hauge et al., 2007). It is thus logical to assume that in reducing role conflict, HPWPs could be associated with less bullying.

Previous research has further shown that HPWPs are a strong predictor of perceived justice, and perceptions of justice have in some studies been shown to mediate the relationship between HPWPs and employee attitudes and behavior (Farndale, Hope-Hailey, & Kelliher, 2011; Heffernan & Dundon, 2016; Wu & Chaturvedi, 2009). According to social exchange theory, employees repay a favorable work environment and conditions through better performance and other favorable behaviors, while reacting to unfavorable conditions with downward shifts in attitudes and behavior (Robinson, 2008). In line with this, it has been argued that to the extent employees perceive their organization to be fair they react with organizational citizenship behaviors, whereas perceptions of unfairness increase the risk of counterproductive behavior towards both the organization and organizational members (Cohen-Charash & Spector, 2001; Organ & Moorman, 1993). Meta-analyses support such relationships, pointing to associations between injustices on the one hand, and on the other, counterproductive behavior, aggression, and interpersonal conflicts (Cohen-Charash & Spector, 2001; Colquitt et al., 2013; Hershcovis et

al., 2007). The meta-analytic evidence further suggests that employees do not necessarily match their negative behavior with the source, but may also target co-workers who bear no responsibility for the perceived injustices (Colquitt et al., 2013). In line with this, it might be assumed that the increased levels of perceived justice reported to be associated with HPWPs could also result in lower levels of bullying.

A Model of Competing Mediators

The possible relationship between HPWPs and workplace bullying has been presented in the section above from two different perspectives: a positive, mutual gains perspective, and a critical, conflicting outcomes perspective (cf. Peccei & Van De Voorde, 2019). We thus construct four hypotheses, based on the two different perspectives, presenting different routes by which HPWPs can be assumed to affect levels of workplace bullying (see Figure 1):

H1a) High-performance work practices are associated with lower levels of role conflict, which in turn reduces the risk of bullying.

H1b) High-performance work practices are associated with higher levels of perceived justice, which in turn reduces the risk of bullying.

H1c) High-performance work practices are associated with higher workload, which in turn increases the risk of bullying.

H1d) High-performance work practices are associated with more competition among colleagues, which in turn increases the risk of bullying.

--- Place Figure 1 here ---

Method

Sample

Data were collected via a two-wave survey design, with a three-month lag. The surveys were distributed electronically to members of the Finnish Association for Business School Graduates (SEFE), employed across a large number of different organizations, mostly in the private sector. A total of 2000 surveys was sent out producing 456 respondents in the first wave, of whom 209 responded in the second.

Of the respondents who took part in both waves, 64.6% were women. Around one-fifth of the total (20.1%) classified themselves as managers or top managers, one-fifth (19.6%) as middle managers, a half (50.7%) as experts, and one-tenth (9.6%) as regular employees. The mean age was 47 years (SD 10.6), ranging from 25 to 65 years. Of the respondents, 10.5% had worked for less than one year in their current organization, 11% for 1-2 years, 16.3% for 3-5 years, 22.5% for 6-10 years, and 39.7% for more than 10 years.

Compared with figures for business professionals in Finland overall, female respondents were somewhat over-represented, and managers and top managers slightly under-represented. The proportions for respondents in wave two did not differ significantly from those in wave one on any of these background variables, suggesting no systematic bias in retention. A logistic regression model, employing both workplace bullying T1 and HPWPs T1 to predict participation in wave two, showed these variables were not significantly related to participation at T2.

Measures

High-performance work practices (HPWPs) were measured with 22 items, taken from Chuang and Liao (2010), and Lepak and Snell (2002). Items from two different scales were used to capture the full extent of HPWPs. The items measured practices related to six different areas of HR: staffing (e.g. “Recruitment emphasizes traits and abilities required for performing well in this organization”), training (e.g. “My organization invests considerable time and money in training”), performance appraisal (e.g. “Performance appraisals are based on objective, quantifiable results”), compensation (“Employee salaries and rewards are determined by individual performance”), participation (e.g. “If a decision made might affect employees, the organization asks them for opinions in advance”), and caring (e.g. “My organization has its ways or methods to help employees alleviate work stress”). In line with a great deal of contemporary research, employee perceptions of HPWPs rather than management-rated HPWPs were measured, as they measure implemented and perceived rather than intended practices and, thus, are better predictors of employee outcomes (Beijer, Peccei, van Veldhoven, & Paauwe, 2019). Replies were given on a five-point Likert scale, ranging from 1= strongly disagree to 5= strongly agree. Cronbach’s alpha was 0.91. HPWPs were measured at T1 only, to avoid exhausting respondents and risking a lower response rate.

Workplace bullying was measured with the Short-NAQ, comprising nine items (Notelaers, Van der Heijden, Hoel, & Einarsen, 2018) at T2. The NAQ/Short-NAQ (Negative Acts Questionnaire) is the most widely employed bullying instrument and has been used in over 50% of the published bullying research (Nielsen & Einarsen, 2018). Sample items include “Rumors and gossip are spread about you” and “Your attempts at conversation are met with silence and hostility”. Responses were given on a five-point scale, measuring frequency, ranging

from 1= never to 5= on a daily basis. Cronbach's alpha was 0.90. Respondents were asked to reply based on their experiences during the past six months; thus, the instrument seeks to offer a broader sweep than a mere snapshot in time. Still, the NAQ, in line with other bullying measures, focuses on measuring the state rather than process of bullying (Escartín, Vranjes, Baillien & Notelaers, 2019).

Organizational justice was measured with eight items (Elovainio et al., 2010). Sample items included "Procedures are applied consistently in this organization" and "My compensation reflects the effort I have put into my work". Replies were given on a five-point Likert scale, ranging from 1= strongly disagree to 5= strongly agree. Cronbach's alpha was 0.88 at T2.

Role conflict was measured with three items (De Cuyper & De Witte, 2002). Sample items included "I am torn between people who have different expectations concerning my job" and "I receive contradictory instructions". Responses were given on a five-point scale ranging from 1= (almost) never to 5= (almost) always. Cronbach's Alpha was 0.80 at T2.

Workload was measured with three items (Notelaers, De Witte, Van Veldhoven & Vermunt, 2007). Sample items included "I have to work extra hard in order to complete a task" and "I work under time constraints". Responses were given on a five-point scale ranging from 1= (almost) never to 5= (almost) always. Cronbach's alpha was 0.89 at T2.

Competition was measured with four items (Fletcher & Nusbaum, 2010). Sample items included "My coworkers are very competitive individuals" and "My coworkers work hard to outperform each other". Replies were given on a five-point Likert scale, ranging from 1= strongly disagree to 5= strongly agree. Cronbach's alpha was 0.87 at T2.

Control variables: Age (year of birth), gender, tenure (categorical), and number of employees (categorical) were included as control variables, as reviews have suggested demographic factors and organization size may affect bullying risk (Nielsen & Einarsen, 2018).

Our focal variables are all based on self-reporting. While we acknowledge that triangulation with other methods may be advisable, we note it may be difficult to collect data on many of these variables from other sources. First, the implementation of different organizational practices is not necessarily consistent across employees, suggesting there may be considerable differences in HPWPs, workload, role conflict, and organizational justice from one individual to another. Furthermore, as these are highly subjective phenomena, perceptions are largely in the eye of the beholder. Second, the use of peer nomination methods, observational methods, or multimodal approaches to collect data on highly sensitive matters, such as workplace bullying, may involve ethical issues (Cowie, Naylor, Rivers, Smith, & Pereira, 2002). Third, other individuals are likely to hold limited information about an employee's exposure to bullying, because much of the behavior may be subtle and not necessarily enacted in public (Salin & Notelaers, 2018). Similarly, others may have little information about the workload or role conflict others experience in their jobs. Finally, a central characteristic of workplace bullying is that colleagues and superiors possibly involved in the bullying process may over time come to see the target as "deserving" of the behavior, rather than as a "victim", thus making them unlikely to perceive the behavior as inappropriate. Despite the shortcomings, we therefore see employee self-reports as the most reliable option in this case.

Results

Table 1 displays the descriptive statistics and correlations of the study variables. It shows that both gender and age correlate significantly with some of the mediators, but not with the outcome, workplace bullying. Tenure and number of employees were not significantly correlated with either bullying or any of the mediators. Hence, we decided to exclude these covariates in the remainder of the analyses. The table also enlists the different dimensions of HPWPs. The correlations indicate they all followed very much the same pattern with respect to bullying and the mediators. Given theoretical arguments concerning synergistic effects between “bundles” of practices (e.g. Huselid, 1995), and that including them as separate predictors would have led to a model with high multicollinearity, we performed and tested a second order factor analysis.

--- Place Table 1 here ---

Before testing our hypotheses, we first tested a confirmatory factor model in Mplus 8 (Muthén & Muthén, 2017). Because the indicators were categorical rather than continuous or interval, we used the WLSMV estimator. The confirmatory factor model, where we modelled HPWP as a second-order factor and included all first-order latent variables and their respective indicators, had an acceptable fit ($\chi^2 = 2357.094$; $df = 1154$; $RMSEA = 0.048$; $CFI = 0.928$ and $TLI = 0.924$). This confirmatory model was a better fit than the one factor model or Harman’s single factor (Harman, 1979), which had 1175 degrees of freedom and a χ^2 of 6587.246 ($CFI = 0.678$; $TLI = 0.664$; $RMSEA = 0.101$). The second common variance model, in which all measured items loaded on the expected factors, as well as on a latent common factor with equal loadings (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), had a χ^2 of 2359.870 and 1153 degrees of freedom ($CFI = 0.928$; $TLI = 0.914$; $RMSEA = 0.048$). Notably, the χ^2 difference test of the confirmatory model and the CMV model was not significantly different ($\chi^2 = 0.196$; $df =$

1). However, following the use of descriptive measures when comparing structural equation models, we note that the TLI of the confirmatory model was 0.01 higher than the TLI of the CVM. The latter suggests that CMV does not pose a substantive threat.

We used the factors-scores obtained from Mplus to test our hypotheses. To obtain the indirect effects or mediating effects we employed the indirect command model in Mplus 8, and because the distribution of the indirect effect is not necessarily known, we used a bootstrap analysis (1000 bootstraps). Figure 2 depicts the structural model, bootstrapped, of standardized path coefficients.

--- Place Figure 2 here ---

Table 2 shows the bootstrapped indirect effects between HPWP at T1 and bullying at T2. In line with the mutual gains perspective, the bootstrapped indirect effect of both role conflict and justice was significant and in the expected direction. Hence, the first two hypotheses (1a and 1b) should be accepted. The indirect effect of workload seems to point towards acceptance of hypothesis 1c. Yet, Figure 2 indicates that contrary to what was hypothesized, HPWPs were negatively related to workload. Therefore, we must reject hypothesis 1c. Finally, in contrast to the content of hypothesis 1d, the bootstrapped indirect effect outcome for competition was not significant. This was due to the non-significant relationship between HPWP and competition, and between competition and bullying. Hence, hypotheses 1d should also be rejected. Comparing the strength of the standardized effects indicates support for the mutual gains perspective: the higher the levels of HPWPs at T1, the less the exposure to bullying over time.

---- Place Table 2 here ---

Discussion

This study set out to analyze the association between HPWPs and workplace bullying, a relationship largely overlooked in the prior research. More specifically, we wanted to test insights from two different perspectives. First, a positive, mutual gains perspective arguing that HPWPs lead to higher perceptions of justice and lower role conflict, thereby reducing the risk of bullying; and second, a critical perspective arguing that HPWPs lead to work intensification, and competition among colleagues, and thereby to more bullying. This study provides clear support for the former perspective, while failing to find support for the latter.

Whereas the vast majority of HPWP well-being research to date has focused on the happiness aspects of well-being (e.g. Peccei & Van De Voorde, 2019), this study contributes to less studied dimensions of employee well-being by focusing on one aspect of social well-being, that is, workplace bullying. Interestingly, the results found in this study contradict prevailing assumptions in the bullying literature, which have largely portrayed the ideology and components of HRM, in particular performance-enhancing work practices, as increasing the risk of bullying and abuse (Lewis & Rayner, 2003; Salin & Hoel, 2011; Samnani & Singh, 2014). Contrary to expectations, this study failed to find support for the notion that HPWPs would increase competition and lead to a higher workload, and thereby increase the risk of bullying. In fact, HPWPs were negatively rather than positively related to perceived workload. More broadly, the findings of this study thus also contradict arguments that HPWPs operate by increasing job demands and forcing employees to compete against each other (cf. Ashkanasy et al., 2016; Legge, 1995; Pichler et al., 2016).

Overall, the results are instead in line with the positive, mutual gains approach to HPWPs, which highlights the positive effects of HPWPs on employee well-being (Kilroy et al., 2016; Peccei & Van De Voorde, 2019). While the research on the effects of HPWPs on social well-being is still scarce, the results do support the findings of Van De Voorde et al. (2011) that HPWPs are associated with positive interpersonal relations, and suggest that HPWPs decrease rather than increase negative social behavior, as measured by the Negative Acts Questionnaire. Rather than encouraging social acts that undermine and are negative, as has often been assumed (Ashkanasy et al., 2016; Lewis & Rayner, 2003; Pichler et al., 2016), HPWPs seem to reduce such tendencies. In contrast to prevailing assumptions (Lewis & Rayner, 2003; Salin & Hoel, 2011; Samnani & Singh, 2014), our results suggest that investing in HPWPs may act to reduce the risk of bullying. Given the negative effects of bullying on both employee well-being and organizational performance (Hoel, Sheehan, Cooper, & Einarsen, 2011; Nielsen & Einarsen, 2012), this lends further support to the importance of HPWPs in organizations. The following presents some possible routes as to why HPWPs may be associated with less bullying.

The earlier research has shown that perceptions of justice play an important explanatory role in the relationship between high-performance work practices and commitment (Farndale et al., 2011). This study provides additional support for the mediating role of justice in explaining the positive outcomes of HPWPs, by showing that justice acts as a mediator between HPWPs and reduced levels of bullying. This is also in line with predictions based on social exchange theory that employees respond with more positive behaviors and fewer counterproductive behaviors in response to favorable and fair treatment (Colquitt et al., 2013; Robinson, 2008). Similarly, it is in line with meta-analytical evidence pointing to positive relationships between injustice and aggressive and counterproductive behaviors (Cohen-Charash & Spector, 2001;

Hershcovis et al., 2007). Moreover, the finding aligns with the previous research on the role of justice and injustice in stimulating conflict between peers or between supervisors and employees (Adamovic, Fortin, & Diehl, 2017). For instance, by increasing procedural justice and transparency, HPWPs may reduce general levels of anger and uncertainty, and threats to self-interest, all of which are also likely to reduce subsequent negative social behaviors in the workgroup.

In addition, the results of the study show that reduced role conflict plays a part in explaining why HPWPs are associated with less bullying. The results thus align with arguments that by enabling higher degrees of autonomy and empowerment, HPWPs allow employees to more proactively define their own role, thereby affecting role demands and decreasing role conflict (cf. Evans and Davis, 2005; Kilroy et al., 2016). That employees who experience lower levels of role conflict are in turn less likely to engage in bullying can be explained by the frustration-aggression hypothesis (e.g. Fox and Spector, 1999): role conflict is a severe stressor that may elicit frustration and aggression in workgroups. By reducing role conflict, HPWPs may reduce experienced frustration, possibly resulting in a range of positive outcomes.

Overall, the study contributes to the research on HPWPs by suggesting high-performance work systems have positive effects on interpersonal relations (cf. Van de Voorde et al., 2011), an area that has to date attracted limited attention. Focusing on employee outcomes rather than performance, it also responds to calls for research on employee-centered HRM (Guest, 2017; Zhang et al., 2013). At the same time, the study contributes to the bullying literature by challenging prevailing notions of HPWPs, and more generally the whole ideology of HR as a risk factor (cf. Lewis & Rayner 2003; Salin & Hoel, 2011; Samnani & Singh, 2014). Instead, it

points to the need for a more nuanced discussion on the relationship between HPWPs and abusive work behaviors.

Practical Implications

The results of our study point to the importance of HPWPs as a tool for preventing workplace bullying. This suggests not only specific anti-bullying measures, such as anti-bullying policies and awareness training, appear to be of relevance, but also more general HR practices play an important role in influencing the risk of bullying. More generally, it also provides support for the work environment hypothesis of bullying (Hauge et al., 2007; Nielsen & Einarsen, 2018), by showing that work practices which improve the work environment reduce the risk of bullying.

The results point to two important routes through which HR practices may improve the work environment and reduce the risk of bullying: role conflicts and perceived justice. The former suggests that HR practices need to be designed in ways that clarify expectations and empower employees to proactively define their own role within the organization (cf. Evans & David, 2005), since lower levels of role conflict are associated with less bullying (e.g. Hauge et al., 2007; Reknes et al., 2014).

Justice perceptions are also key. The justice research has identified several factors of importance to employee perceptions of justice, including consistency, accuracy, representativeness, and correctability (e.g. Cohen-Charash and Spector, 2001). For instance, to have HR practices raise perceptions of justice, it can thus be argued it is key that the practices are perceived to be applied consistently across persons and time; that appraisal, compensation and

promotion decisions are perceived as being based on accurate information; and, that employees have a voice in decision-making processes and access to grievance procedures should they feel improperly treated. The importance of consistency also aligns with that of HR system strength, as HR systems have been argued to have most impact if all practices send consistent signals about the organization's underlying intentions (Bowen & Ostroff, 2004). Furthermore, employers need to communicate why certain practices are in place, as employee attributions of intent are central (Russell, Ferris & Sikora, 2016). Actions perceived to be supportive and there to help employees perform better are more likely to be considered fair than the same actions perceived as being undertaken with malicious intent. For HPWPs to reduce the risk of bullying, such perceptions of justice and fairness appear central.

Limitations and Suggestions for Further Research

In this study, information on HPWPs was collected from individual employees, a practice that has in itself become increasingly common over the past 20 years (Beijer et al., 2019), but has disadvantages as well as advantages. On the one hand, intended and perceived HR practices may not be the same, and employee and management perceptions of HPWPs may vary considerably. However, it has been argued that employee perceptions of the existence and effectiveness of HPWPs are what affect employee-level and organization-level outcomes (Ehrnrooth & Björkman, 2012). As such, employee perceptions are highly relevant and merit examination.

On the other hand, relying on employee perceptions entails some risks. For instance, it is possible that employees subject to bullying, or involved in a serious conflict that may evolve into bullying, perceive the work environment more negatively, and therefore also see the

organization's HR practices in a more negative light. Also, a person who is subject to bullying may be treated differently by management. They may, for example, be offered fewer training opportunities, be subject to more arbitrary performance appraisals, and receive less information about current developments, leading them to rate HR practices differently than do their colleagues. To study both intended and perceived HPWPs, an alternative to leaning on employee perceptions is to advance the examination of the relationship between HPWPs and bullying by conducting multi-level studies, wherein employees are nested in leaders/departments and in organizations. Including both management-rated HPWPs and employee perceptions thereof, would further enable testing of how employee perceptions may mediate the relationship between intended HR strategy and outcomes.

While this study has measured HPWPs and bullying at different points in time, it is important to remember that bullying is often a gradually evolving process, where working conditions deteriorate and abusive behavior increases over a long period (Einarsen et al., 2011). A three-month time lag may thus be too short to truly capture this evolution, and longitudinal studies over a longer period of time are therefore needed. Closely related to the issue of time is causality. To claim a causal link between HPWPs and bullying requires more than a two-wave design, where HPWPs are defined as a predictor at T1, and bullying at work a dependent variable at T2. Even though two-wave is an improvement on cross-sectional, we have to caution against the interpretation that HPWPs cause less bullying. We encourage future research to employ a person-centered analysis approach, collecting a minimum of three waves to discern the indirect effects over time and in persons.

A further limitation to this study is its reliance on single-source, self-reported data. Hence, common method bias cannot be ruled out entirely: some of the observed variation may be

attributable to the measurement method rather than to true variation in the latent constructs (Podsakoff et al., 2003). We performed two tests to study the extent to which common method bias might have threatened validity. First, the single factor test (Harman, 1979) showed a poorer fit than the confirmatory factor model. The second test, modelling a common method factor, where all items load equally high on the common method factor, fitted equally as well as our confirmatory factor model. However, analogous to model comparison in measurement invariance testing, where a difference of 0.01 in descriptive fit measures such as TLI and CFI are seen as pointing to “differences that are worth to note between models” (Widaman, Early & Conger, 2013 p. 74), the TLI differences of 0.01 in favor of the confirmatory factor model may suggest that CMV does not play a substantive role. Nevertheless, we recommend that the results be interpreted with some caution, and triangulation with other measurement methods, where possible, is advisable.

This study found that HPWPs were associated with less bullying. It is nevertheless possible that a darker side of HPWPs may manifest itself under certain circumstances, and that HPWP outcomes are contingent on organizational context (Han, Sun & Wang, 2019). For instance, it has been proposed that trust levels and scarcity influence the likelihood of performance-enhancing compensation systems increasing the risk of bullying (Samnani & Singh, 2014). Similarly, Han et al. (2019) point to the importance of resources, in the form of human, psychological, and social support, to offset and cope with a potential increase in demands stemming from HPWPs. If there are no such resources, more negative effects may occur. For instance, employee self-efficacy, organizational culture, line manager leadership style, and leader-subordinate relationships might all moderate the relationship between HPWPs and

bullying. Examining these issues requires more complex study designs, where, for instance, employees are nested in leaders, who are nested in departments and organizations.

Furthermore, this study has examined a broad range of HPWPs, but aggregated rather than separately. Recent research has suggested that different HR practices may have different relations with employee outcomes, such as stress (Ogbonnaya & Messersmith, 2019). Future studies should examine in more detail the relationship between individual practices and the risk of bullying, and the mechanisms through which individual practices may affect bullying risk.

Conclusion

This study contributes to the literatures on HRM and workplace bullying, providing empirical evidence for a negative association between HPWPs and the risk of workplace bullying. As such, the study challenges prevailing ideas in the bullying literature, which typically portrays the ideology and components of HRM as risk factors (Lewis & Rayner, 2003; Samnani & Singh, 2014; Salin & Hoel, 2011). Contrary to expectations, HPWPs were not found to increase either competition or workload, which in turn could have given rise to more bullying. In fact, the paper provides support for the positive effects of HPWPs on interpersonal behavior and social well-being (Van de Voorde et al., 2011), suggesting that HPWPs reduce the risk of bullying by decreasing role conflict and raising perceptions of justice. The results point to the importance of HPWPs as a significant tool to reduce the risk of workplace bullying.

References

- Adamović, M., Fortin, M., & Diehl, M-R. (2017). Justice and conflict dynamics in teams. In Moliner, C., Cropanzano, R. & Martínez-Tur, V., (Eds), *Organizational justice: international perspectives and conceptual advances* (pp. 107-133). New York: Routledge.
- Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. (2000). *Manufacturing advantage: Why high-performance work systems pay off*. Ithaca, NY: Cornell University Press.
- Ashkanasy, N., Bennett R., & Martinko, M. (2016). *Understanding the high performance workplace: The line between motivation and abuse*. New York: Routledge.
- Beijer, S., Peccei, R., van Veldhoven, M. & Paauwe, J. (2019, early view). The turn to employees in the measurement of human resource practices: A critical review and proposed way forward. *Human Resource Management Journal*. doi: 10.1111/1748-8583.12229
- Boon, C., den Hartog, D.N & Lepak, D. (2019). A systematic review of human resource management systems and their measurement. *Journal of Management*, 45, 2498–2537. doi: 10.1177/0149206318818718
- Bowen, D. & Ostroff, C. (2004). Understanding HRM-firm performance linkages: The role of the "strength" of the HRM system. *Academy of Management Review*, 29, 203-221. doi: 10.5465/AMR.2004.12736076

- Bowling, N., & Beehr, T. (2006). Workplace harassment from the victim's perspective: a theoretical model and meta-analysis. *Journal of Applied Psychology, 91*, 998-1012. doi: 10.1037/0021-9010.91.5.998
- Boxall, P., & Macky, K. (2009). Research and theory on high-performance work systems: progressing the high-involvement stream. *Human Resource Management Journal, 19*, 3-23. doi: 10.1111/j.1748-8583.2008.00082.x
- Chuang, C. H., & Liao, H. (2010). Strategic human resource management in service context: taking care of business by taking care of employees and customers. *Personnel Psychology, 63*, 153-196. doi:10.1111/j.1744-6570.2009.01165.x
- Cohen-Charash, Y. & Spector, P. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes, 86*, 278-321. doi: 10.1006/obhd.2001.2958
- Colquitt, J. Scott, B., Rodell, J., Long, D, Zapata, C., Conlon, D. & Weslon, M. (2013). Justice at the millennium, a decade later: A meta-analytic test of social exchange and affect-based perspectives. *Journal of Applied Psychology, 199-236*. doi:10.1037/a0031757
- Cowie, H., Naylor, P., Rivers, I., Smith, P.K., & Pereira, B. (2002). Measuring workplace bullying. *Aggression and Violent Behavior, 7*, 33-51. doi:10.1016/s1359-1789(00)00034-3.
- De Cuyper N., & De Witte H. (2002). Validering van de WOCCQ (Vragenlijst over arbeidsomstandigheden) in Vlaanderen. Leuven, Belgium: Catholic University of Leuven.

- Ehrnrooth, M., & Björkman, I. (2012). An integrative HRM process theorization - beyond signalling effects and mutual gains. *Journal of Management Studies*, 49, 1109-1135. doi:10.1111/j.1467-6486.2012.01055
- Einarsen, S., Hoel, H., Zapf, D., & Cooper, C. L. (2011). The concept of bullying at work: The European tradition. In Einarsen, S., Hoel, H., Zapf, D., & Cooper, C. L. (Eds.), *Bullying and Harassment in the Workplace. Developments in Theory, Research and Practice* (pp. 3-39). London: Taylor & Francis.
- Elovainio, M., Heponiemi, T., Kuusio, H., Sinervo, T., Hintsala, T., & Aalto, A-M. (2010). Developing a short measure of organizational justice. *Journal of Occupational and Environmental Medicine*, 52, 1068-1074. doi: 10.1097/jom.0b013e3181f8447c
- Escartín, J., Vranjes, I., Baillien, E., & Notelaers, G. (2019). Workplace bullying and cyberbullying scales: An overview. In D’Cruz, P., Noronha, E., Notelaers, G & Rayner, C (Eds). *Workplace Bullying. Concepts, approaches and methods*. Singapore: Springer
- Evans, W.R., & Davis, W.D. (2005). High-performance work systems and organizational performance: The mediating role of internal social structure. *Journal of Management*, 31, 758-775. doi: 10.1177/0149206305279370
- Farndale, E., Hope-Hailey, V., & Kelliher, C. (2011). High commitment performance management: the roles of justice and trust. *Personnel Review*, 40, 5-23. doi: 10.1108/004834811111095492

- Fletcher, T., & Nusbaum, D. (2010). Development of the competitive work environment scale: A multidimensional climate construct. *Educational and Psychological Measurement, 70*, 105-124. doi: 10.1177/0013164409344492
- Fox, S., & Spector, P.E. (1999). A model of work frustration-aggression. *Journal of Organizational Behavior, 20*, 915- 931. doi: 10.1002/(sici)1099-1379(199911)20:6<915::aid-job918>3.0.co;2-6
- Guest, D. E. (2017). Human resource management and employee well-being: towards a new analytic framework. *Human Resource Management Journal, 27*, 22-38. doi: 10.1111/1748-8583.12139
- Han, J., Sun, J.-M. & Wang, H.L. (2019, early view). Do high performance work systems generate negative effects? How and when? *Human Resource Management Review*. Doi: 10.1016/j.hrmr.2019.100699
- Harman, H. H. (1979). *Modern factor analysis*. Chicago, IL: University of Chicago Press.
- Hauge, L. J., Skogstad, A., & Einarsen, S. (2007). Relationships between stressful work environments and bullying: Results of a large representative study. *Work & Stress, 21*, 220-242. doi: 10.1080/02678370701705810
- Heffernan, M., & Dundon, T. (2016). Cross-level effects of high-performance work systems (HPWS) and employee well-being: the mediating effect of organisational justice. *Human Resource Management Journal, 26*, 211-231. doi: 10.1111/1748-8583.12095

- Hershcovis, S., Turner, N., Barling, J., Arnold, K., Dupre, K., Inness, M., LeBlanc, M., & Sivanathan, N. (2007). Predicting workplace aggression: A meta-analysis. *Journal of Applied Psychology, 92*, 228-238. Doi: 10.1037/0021-9010.92.1.228
- Hoel, H., Sheehan, M., Cooper, C., & Einarsen, S. (2011). Organisational effects of workplace bullying. In Einarsen, S., Hoel, H., Zapf, D., & Cooper, C. L. (Eds.), *Bullying and Harassment in the Workplace: Developments in Theory, Research and Practice* (pp. 129-147). London: Taylor and Francis.
- Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate performance. *Academy of Management Journal, 38*, 635-672. doi: 10.2307/256741
- Kilroy, S., Flood, P. C., Bosak, J., & Chênevert, D. (2016). Perceptions of high-involvement work practices and burnout: the mediating role of job demands. *Human Resource Management Journal, 26*, 408-424. doi: 10.1111/1748-8583.12112
- Kroon, B., van de Voorde, K., & van Veldhoven, M. (2009). Cross-level effects of high-performance work practices on burnout: Two counteracting mediating mechanisms compared. *Personnel Review, 38*, 509-525. doi: 10.1108/00483480910978027
- Legge, K. (1995). *Human resource management: Rhetorics and realities*. London: Macmillan.
- Lepak, D. P., & Snell, S. A. (2002). Examining the human resource architecture: The relationships among human capital, employment, and human resource configurations. *Journal of Management, 28*, 517-543. doi: 10.1177/014920630202800403

- Lewis, D., & Rayner, C. (2003). Bullying and human resource management: a wolf in sheep's clothing? In Einarsen, S., Hoel, H., Zapf, D., & Cooper, C. L. (Eds.), *Bullying and emotional abuse in the workplace: international perspectives in research and practice*, (pp. 370-382). London: Taylor & Francis.
- Messersmith, J. G., Patel, P. C., Lepak, D. P., & Gould-Williams, J. S. (2011). Unlocking the black box: Exploring the link between high-performance work systems and performance. *Journal of Applied Psychology*, *96*, 1105-1118. doi: 10.1037/a0024710
- Muthén, L.K., & Muthén, B.O. (2017). *Mplus user's guide* (8th edition). Los Angeles, CA: Muthén & Muthén.
- Nielsen, M.B. & Einarsen, S. (2018). What we know, what we do not know, and what we should and could have known about workplace bullying: An overview of the literature and agenda for future research. *Aggression and Violent Behavior*, *42*, 71-83.
<https://doi.org/10.1016/j.avb.2018.06.007>
- Nielsen, M. B., & Einarsen, S. (2012). Outcomes of exposure to workplace bullying: A meta-analytic review. *Work & Stress*, *26*, 309-332. doi: 10.1080/02678373.2012.734709
- Notelaers, G., De Witte, H., van Veldhoven, M., & Vermunt, J. K. (2007). Construction and validation of the Short Inventory to Monitor Psychosocial Hazards. *Médecine du Travail & Ergonomie*, *44*, 11-17.
- Notelaers, G., Van der Heijden, B., Hoel, H. & Einarsen, S. (2018). Measuring bullying at work with the short-negative acts questionnaire: identification of targets and criterion validity. *Work & Stress*. doi 10.1080/02678373.2018.1457736

Ogbonnaya, C. & Messersmith, J. (2019). Employee performance, well-being, and differential effects of human resource management subdimensions: Mutual gains or conflicting outcomes? *Human Resource Management Journal*, 29, 509-526. doi: 10.1111/1748-8583.12203|

Organ, D. W., & Moorman, R. H. (1993). Fairness and organizational citizenship behavior: What are the connections? *Social Justice Research*, 6, 5-18. doi: 10.1007/bf01048730

Peccei, R & Van De Voorde (early view) Human resource management–well-being–performance research revisited: Past, present, and future. *Human Resource Management Journal*. doi: 10.1111/1748-8583.12254

Pichler, S., Livingstone, B., Ruggs, E. & Varma, A (2016). The dark side of high performance work systems: implications for workplace incivility, work-family conflict, and abusive supervision. In Ashkanasy, N.M, Bennett, R.J., & Martinko, M.J., (Eds), *Understanding the high performance workplace: The line between motivation and abuse* (pp. 231-251). New York: Routledge.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879-903. doi: 10.1037/0021-9010.88.5.879

Ramsay, H., Scholarios, D., & Harley, B. (2000). Employees and high-performance work systems: Testing inside the Black box. *British Journal of Industrial Relations*, 38, 501-531. doi:10.1111/1467-8543.00178

- Reknes, I., Einarsen, S., Knardahl, S., & Lau, B. (2014). The prospective relationship between role stressors and new cases of self-reported workplace bullying. *Scandinavian Journal of Psychology*, 55, 45-52. doi: 10.1111/sjop.12092
- Robinson, S. (2008). Dysfunctional workplace behavior. In Barling, J. & Cooper, C., (Eds), *The SAGE Handbook of Organizational Behavior Vol 1* (pp. 141-159). Los Angeles: SAGE Publications.
- Russell, Z.A., Ferris, G. & Sikora, D.M (2016). Crossing the line between high performance work practise and abusive supervision: context, implementation and intentionality as interpretive triggers. In Ashkanasy, N.M, Bennett, R.J., & Martinko, M.J., (Eds), *Understanding the high performance workplace: The line between motivation and abuse* (pp. 126-147). New York: Routledge.
- Salin, D., & Hoel, H. (2011). Organizational causes of bullying. In Einarsen, S., Hoel, H., Zapf, D., & Cooper, C. L. (Eds.), *Workplace bullying and harassment: Developments in Theory, Research and Practice*, 2nd edn (pp. 227-243). London: Taylor & Francis.
- Salin, D. & Notelaers, G. (2018, early view). The effects of workplace bullying on witnesses: Violation of the psychological contract as an explanatory mechanism? *International Journal of Human Resource Management*. doi: 10.1080/09585192.2018.1443964
- Samnani, A-K., & Singh, P. (2014). Performance-enhancing compensation practices and employee productivity: The role of workplace bullying. *Human Resource Management Review*, 24, 5-16. doi: 10.1016/j.hrmr.2013.08.013

- Takeuchi, R., Lepak, D. P., Wang, H., & Takeuchi, K. (2007). An empirical examination of the mechanisms mediating between high-performance work systems and the performance of Japanese organizations. *Journal of Applied Psychology, 92*, 1069-1083. doi: 10.1037/0021-9010.92.4.1069
- Van de Voorde, K., Paauwe, J., & Van Veldhoven, M. (2011). Employee well-being and the HRM–organizational performance relationship: A review of quantitative studies. *International Journal of Management Reviews, 14*, 391-407. doi: 10.1111/j.1468-2370.2011.00322.x
- Widaman, K. F., Early, D. R., & Conger, R. D. (2013). Special populations. In Little, T.D. (Ed.), *The Oxford handbook of quantitative methods* (pp. 55-81). Oxford: Oxford University Press.
- Wu, P-C. & Chattervedi, S. (2009). The role of procedural justice and power distance in the relationship between high performance work systems and employee attitudes: A multilevel perspective. *Journal of Management, 35*, 1228-1247. doi: 10.1177/0149206308331097
- Zhang, M., Zhu, C. J., Dowling, P. J., & Bartram, T. (2013). Exploring the effects of high-performance work systems (HPWS) on the work-related well-being of Chinese hospital employees. *International Journal of Human Resource Management, 24*, 3196-3212. doi:10.1080/09585192.2013.77502

Table 1. Descriptive statistics

	mean (sd)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gender (T1)	-	1														
2. Age (T1)	46 (10.55)	.026	1													
3. Tenure (T1)	-	-.051	.475**	1												
4. No. of employees (T1)	-	-.114*	-.140**	.020	1											
5. HPWP (T1)	3.14 (0.65)	.128**	.068	-.088	.026	1										
6. Staffing (T1)	3.55 (0.80)	.084	-.013	-.170**	.026	.784**	1									
7. Training (T1)	3.30 (1.03)	-.012	.149**	.084	.171**	.675**	.425**	1								
8. Perf. approx. (T1).	2.90 (0.80)	.142**	.002	-.104*	.079	.851**	.582**	.477*	1							
9. Compensation (T1)	2.81 (0.81)	.223**	-.015	-.126**	-.079	.720**	.522**	.314**	.623**	1						
10. Participation (T1)	3.14 (0.92)	.093*	.134**	-.059	-.165**	.712**	.515**	.351**	.458**	.445**	1					
11. Caring (T1)	3.45 (0.91)	.032	.116*	-.019	.002	.720**	.472**	.467**	.472**	.394**	.565**	1				
12. Workload (T2)	3.68 (0.81)	.037	-.153*	-.092	-.107	-.112	.009	-.120	-.036	-.003	-.125	-.287**	1			
13. Competition (T2)	2.27 (0.76)	.173*	-.106	.041	-.109	.035	.072	-.021	.072	.132	-.011	-.133	.261**	1		
14. Role conflict (T2)	2.82 (0.91)	-.038	-.206**	-.035	.032	-.347**	-.194**	-.224**	-.284**	-.197**	-.289**	-.352**	.505**	.307**	1	
15. Org. justice (T2)	3.65 (0.78)	.103	.143*	-.075	-.001	.654**	.512**	.367**	.462**	.486**	.557**	.566**	-.253**	-.213**	-.522**	1
16. Workplace bullying (T2)	1.45 (0.58)	-.041	-.073	.052	-.005	-.364**	-.240**	-.239**	-.267**	-.230**	-.310**	-.353**	.306**	.230**	.541**	-.572**

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Table 2. Standardized effects from HPWPs at T1 to workplace bullying at T2.

	STANDARIZED EFFECT	LOWER CONFIDENCE INTERVAL	HIGHER CONFIDENCE INTERVAL
Total Effect	-0.599	-0.664	-0.515
Total Indirect Effect	-0.621	-0.752	-0.473
Direct effect	0.023	-0.124	0.190
Specific Indirect Effects			
JUSTICE	-0.227	-0.399	-0.067
ROLE CONFLICT	-0.432	-0.521	-0.279
COMPETITION	0.003	-0.002	0.018
WORKLOAD	0.035	0.011	0.066

N.B. 95% confidence interval of parameters after 1000 bootstraps.

Figure 1. Conceptual model. Factors hypothesized to mediate the relationship between HPWPs and workplace bullying.

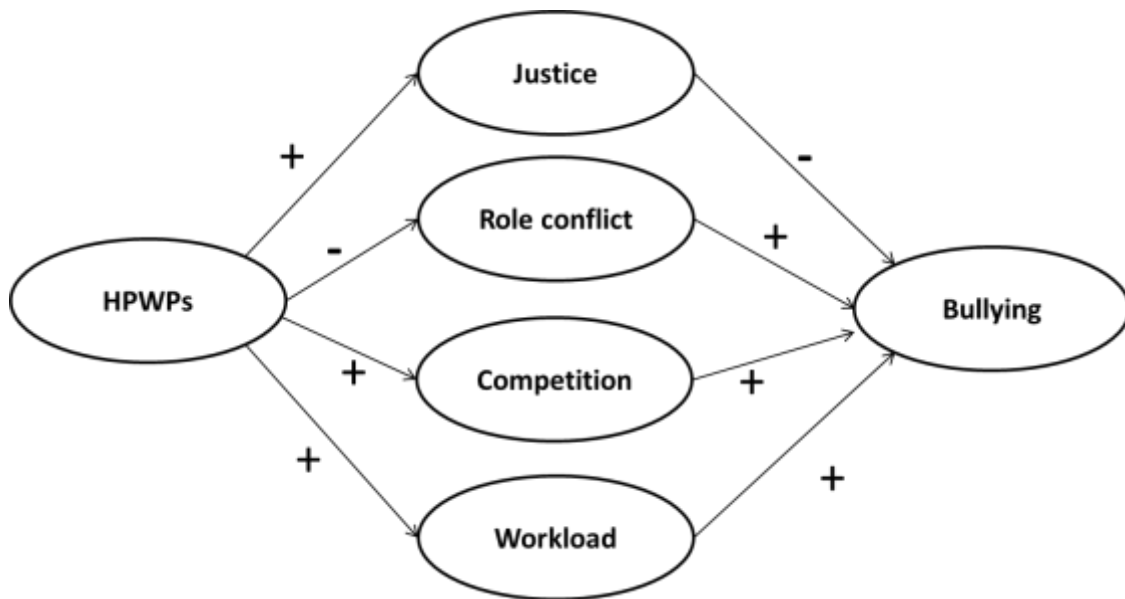
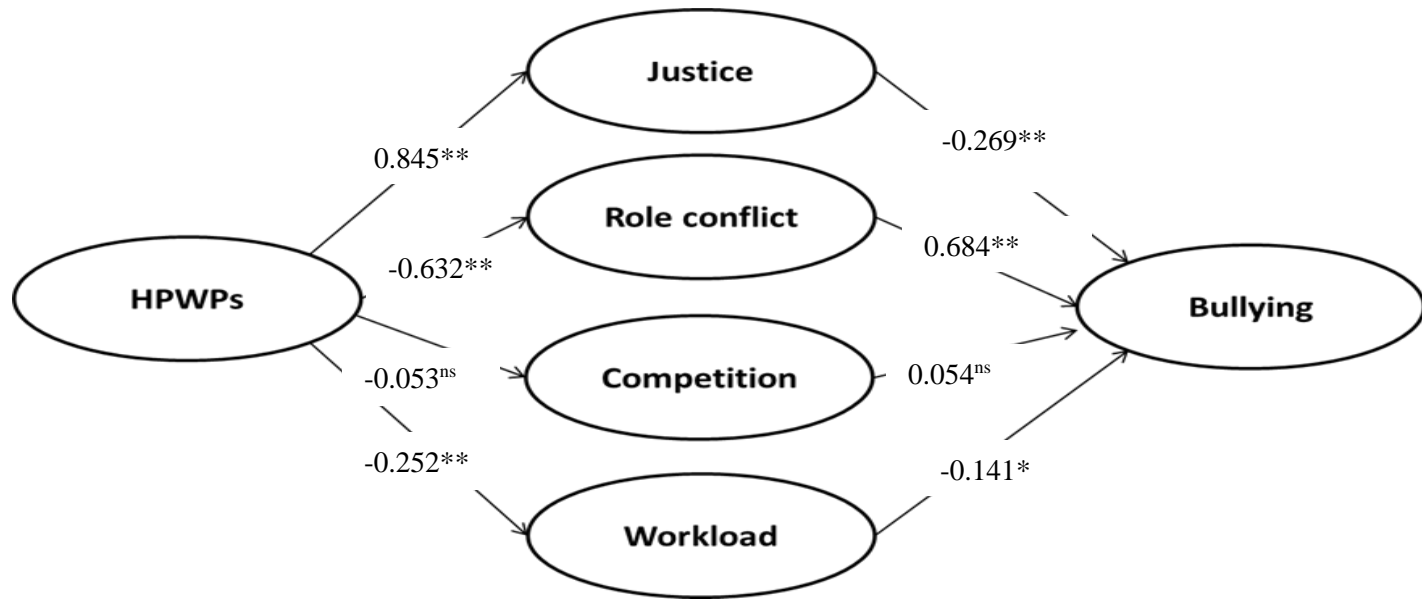


Figure 2. Standardized path coefficients



Legend * Standardized parameter estimate within a 95% Bootstrapped confidence interval

** Standardized parameter estimate within a 99% Bootstrapped confidence interval