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A meta-analysis of mediating mechanisms between employee reports of human resource management and employee performance: different pathways for descriptive and evaluative reports?

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ABSTRACT

A substantial body of research has examined how employee reports of human resource management (HRM) practices relate to employee performance, yet it only acknowledges to a limited extent that different types of employee reports of HRM exist. This study differentiates *descriptive* reports of HRM practices which reflect employee experiences of the implementation of HRM activities and *evaluative* reports of HRM practices that gauge employees' judgement of their effectiveness, quality and/or utility. By applying a meta-analytical approach, we find that descriptive reports of HRM practices are more positively related to personal and job resources (e.g. skills, empowerment, and supportive relationships) and that evaluative reports of HRM practices are more positively related to job attitudes (i.e. job satisfaction and commitment). We further find that personal/job resources and job attitudes partially mediate the positive relationship between employee-reported HRM practices and employee performance. We recommend that future studies distinguish between different types of employee reports of HRM, more clearly conceptualize the notion of employee-reported HRM practices, and examine the differential relationship between descriptive versus evaluative employee reports of HRM practices and employee outcomes.

KEYWORDS

Employee reports of human resource management practices; high-performance work practices; job attitudes; job resources; personal resources; employee performance; meta-analysis

Introduction

For several decades, human resource management (HRM) researchers have sought to explain the relationship between (bundles of) HRM practices and performance (Jiang et al., 2012, 2013). While HRM-performance relationships were initially studied on the organizational level, a growing body of

studies has shifted the focus to the employee level (Boon et al., 2019; Guest, 2011; Paauwe, 2009; Renkema et al., 2017). In doing so, HRM researchers stressed the importance of studying *employee reports of HRM practices* by arguing that employee performance materializes when employees positively experience HRM activities (Liao et al., 2009; Nishii et al., 2008; Nishii & Wright, 2008). In support of these ideas, a burgeoning body of research has shown that employee reports of HRM practices are positively associated with employee performance such as task performance (Butts et al., 2009; Den Hartog et al., 2013) and citizenship behaviors (Alfes et al., 2012; Kehoe & Wright, 2013).

Despite the strong evidence for the relationship between HRM practices reported by employees and employee performance, various researchers have called for a clearer distinction between different types of employee reports of HRM (Beijer et al., 2019; Boon et al., 2019; Edgar & Geare, 2014; Guest, 2011). Specifically, while some studies consider employee reports of HRM practices as employee descriptions of the presence of certain HRM activities (Kehoe & Wright, 2013), others view employee-reported HRM as the employees' emotional appraisal of HRM activities' utility (Meijerink et al., 2016; Paré & Tremblay, 2007). To provide more clarity, scholars therefore proposed two ways how employees report on HRM activities, one focusing on *descriptive* reports that reflect employee experiences of HRM presence (which are more or less factual in nature) versus *evaluative* reports that represent affectively laden assessments of HRM activities by employees (Beijer et al., 2019; Boon et al., 2019; Edgar & Geare, 2005; Marescaux et al., 2012).

Differentiating between descriptive and evaluative reports is important because employee-reported HRM practices relate to employee performance through different mediating mechanisms. As noted by several meta-synthesis studies (Jiang et al., 2013; Paauwe & Blok, 2015), many HRM researchers have adopted an attitudes-based perspective to propose that HRM practices reported by employees affect employee performance through fostering desired job attitudes (i.e. affective commitment and job satisfaction) (Kehoe & Wright, 2013; Purcell & Hutchinson, 2007). Other researchers adopted a conservation of resources perspective (Hobfoll, 2001) to propose that HRM influences performance through providing resources (e.g. competences and empowerment) that workers reinvest by putting effort into their jobs (Boon & Kalshoven, 2014; Peccei et al., 2013). Although job attitudes and resources both mediate the relationship between employee reports of HRM and employee performance, researchers typically assume that different types of employee-reported HRM have identical impacts on these mediating states (Beijer et al., 2019; Edgar & Geare, 2005, 2014). This is problematic as it overlooks the

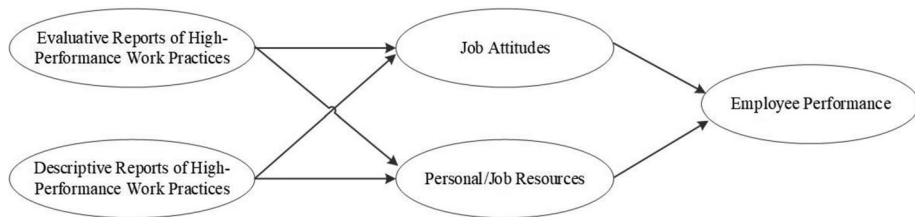


Figure 1. Theoretical model of the relationship between employee reports of HPWPs and employee performance.

possibility that descriptive and evaluative reports of HRM relate to employee performance in heterogenous ways through their relationship with job attitudes and resources (Beijer et al., 2019).

Given these issues, we aim to assess the relative importance of mediating mechanisms between different types of employee reports of HRM and employee performance using a meta-analytic approach. In so doing, we contribute to the literature in two ways. First, we contribute by differentiating between descriptive and evaluative employee reports of HRM by examining the relationship between employee-reported HRM practices and proximal employee-level outcomes (see Figure 1). We show that employees make sense of and accordingly, respond to, HRM activities in different ways, which can be better understood by conceptually differentiating between descriptive and evaluative employee reports of HRM practices. Second, our meta-analysis shows that descriptive and evaluative reports of HRM relate to employee performance through multiple pathways. Accordingly, we contribute by highlighting that the attitudes- and resource-based perspectives differ in their importance for explaining relationships between employee-reported HRM practices and performance, depending on the type of employee report considered.

Theoretical background and hypotheses

Existing research on employee-level HRM and performance relationships

Following our interest in employee performance as a key HRM outcome, we focus on HRM practices that serve to enhance employee performance, that is, high-performance work practices (HPWPs). Here, HPWPs are defined as HRM practices designed to enhance employee performance by increasing employees' competences, motivation and opportunities to perform (Combs et al., 2006; Liao et al., 2009; Takeuchi et al., 2009). Rather than studying them in isolation, researchers have stressed the importance of studying a collection or bundles of HPWPs as different HPWPs serve to increase employees' competences, motivation or opportunities to perform. Accordingly, HPWPs fall in one of following three policy domains:

ability-enhancing HRM practices (i.e. staffing and training/development), motivation-enhancing HRM practices (i.e. performance management and compensation), and opportunity-enhancing HRM practices (i.e. involvement and participatory job design) (Jiang et al., 2012; Subramony, 2009). In line with this, we consider HPWPs as the collective of HRM practices that are geared towards realizing high-level employee performance by means of increasing employees' abilities, motivation and opportunity to perform.

Similar to HPWPs, employee performance is also conceptualized as a multi-dimensional construct consisting of task performance and organizational citizenship behavior (Katz & Kahn, 1978; Organ, 1988). Here, the former refers to behavior that is specified by job descriptions (e.g. productivity, sales, or offering service quality), while the latter reflects "behavior that is discretionary, not explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization," such as helping a supervisor, orienting newcomers, or going the extra mile to serve a customer (Organ, 1988, p. 4).

Employee-level HRM research has advanced two key insights on the relationship between HRM practices and employee performance, which are discussed below: the importance of employee reports of HRM practices and the mediating roles of job attitudes and resources.

The importance of employee reports of HRM

Employee-level HRM researchers consider employees' reports of HPWPs to be an important condition against which HPWPs relate to employee performance, for two reasons. First, research has shown that intended HRM practices are often not implemented on the work floor (Khilji & Wang, 2006). Therefore, researchers stressed the necessity of studying employee reports to measure whether HRM practices are actually implemented (Bos-Nehles & Meijerink, 2018;; Liao et al., 2009; Nishii & Wright, 2008). Second, HRM practices can be seen as signals from the organization about how an employee is expected to perform (Bowen & Ostroff, 2004; Guzzo & Noonan, 1994). Researchers therefore argued that how an employee behaves is not just dependent on her objective environment, but also on her perceptions of it (Guest, 1999; Purcell & Hutchinson, 2007). In support of these claims, several studies have shown that employees' attitudinal and behavioral responses are more strongly related to their experiences of HRM practices than managerial reports of HRM practices (Den Hartog et al., 2013; Liao et al., 2009). In line with the idea that HPWPs realize employee performance by supporting and motivating employees, it is considered important that employees

experience HPWPs to be actually present and supportive as this signals to them the intentions of their employer to help and induce them to realize performance objectives, which ultimately ensures that HPWPs relate positively to employee performance (Liao et al., 2009; Nishii et al., 2008). In support of this idea, research has shown that employee reports of HPWPs are positively related to both dimensions of employee performance, that is, task performance (Butts et al., 2009; Den Hartog et al., 2013) and citizenship behaviors (Alfes et al., 2012; Kehoe & Wright, 2013).

The mediating role of attitudes and resources

Following the seminal work of scholars such as Purcell and Hutchinson (2007) and Nishii and Wright (2008), HRM researchers have argued that employee reports of HPWPs relate to employee performance through mediating states such as employee commitment, satisfaction, empowerment, knowledge, and skills (Aryee et al., 2012; Kehoe & Wright, 2013; Kuvaas, 2007; Liao et al., 2009). Which mediating mechanisms are studied depends on the theoretical perspective that employee-level HRM researchers have adopted. For instance, some HRM researchers have applied the conservation of resources theory (Hobfoll, 2001) to predict that HPWPs as reported by employees offer resources such as empowerment, support, knowledge, and skills which employees reinvest by engaging in high-level performance (Bal & De Lange, 2015; Boon & Kalshoven, 2014; Meijerink et al., 2018). According to these conservation of resource theorists, individuals are motivated to acquire and maintain resources, since the loss of resources and/or having few resources causes stress (Halbesleben et al., 2014). Researchers have shown that task performance and organization citizenship behaviors are effective means to reinvest or acquire resources, because engaging in work-related activities aids employees in maintaining their competences, while supporting others helps build supportive relationships (Halbesleben & Bowler, 2007). On this basis, HRM researchers argued that employee-reported HPWPs such as training, staffing, developmental appraisal, participation, and teamwork build the belief among employees that they are provided with ample resources and, in doing so, induce employee performance (Bal & De Lange, 2015; Boon & Kalshoven, 2014; Meijerink et al., 2018).

Besides resources, HRM researchers have also examined job attitudes, like affective commitment and job satisfaction, as important mediators in employee-reported HPWPs–employee performance relationships (Kehoe & Wright, 2013; Purcell & Hutchinson, 2007). Both job attitudes reflect the employees' affection towards their work. Job satisfaction echoes employees' positive feelings about their job (Judge et al., 2001). Affective

organizational commitment reflects the employees' affection towards the organization in terms of their "affective or emotional attachment to the organization such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organization" (Allen & Meyer, 1990, p. 2). As noted in the meta-review by Jiang and Messersmith (2018), HRM researchers mostly rely on social exchange theory (Blau, 1964) to explain the mediating role of job attitudes. Social exchange theory suggests that relationships become strong and mutually beneficial over time for those involved (Blau, 1964). This is due to the norm of reciprocity, which predicts that social actors perceive the obligation to return a benefit for a benefit received from others (Gouldner, 1960). On this basis, researchers argued that employees may perceive HPWPs as an investment in their well-being and reciprocate this with positive attitudes towards the organization or job, which ultimately makes them perform better (Kehoe & Wright, 2013; Paré & Tremblay, 2007).

Although resources and attitudes represent different concepts and thus mediating mechanisms in HRM-performance relationships on the employee level, they are related. From a social exchange theoretical perspective, job resources such as empowerment and organizational support can be seen as benefits provided by the organization, which employees reciprocate by showing affective organizational commitment (Kehoe & Wright, 2013). Moreover, by drawing on conservation of resource theory, Boon and Kalshoven (2014) argued and found that employees reinvest resources resulting from employee-reported HRM practices by being more committed towards the organization. This suggests that resources and attitudes are interrelated. This particularly holds for affective organizational commitment (i.e. a job attitude) and perceived organizational support (i.e. a job resource). As noted by Shore and Wayne (1993, p. 774), "perceived organizational support is a commitment concept". At the same time, both differ conceptually since organizational support equates the *employer's* commitment towards employees (in terms of offering job resources, supporting employees' work-related activities, fostering employee development, etc.), while affective organizational commitment equates *employees'* commitment to their employer (Wayne et al., 1997). In support of these differences, multiple studies have shown – by means of confirmatory factor analyses – that measures of affective organizational commitment and perceived organizational support, are indeed distinct (Hutchison, 1997; Rhoades et al., 2001; Shore & Tetrick, 1991). Moreover, job attitudes and resources differ as they fall into different conceptual domains. Namely, job attitudes like affective organizational commitment and job satisfaction are affectively laden while they tap into employees' feelings about and emotional evaluation of their

employer and job. This differs from job resources which are either more cognitive in nature (i.e. lacking an evaluative/emotional component) or represent a more or less factual representation of the employees' work environment. In fact, in the job demands-resources (JDR) literature, which strongly draws on conservation of resources theory, resources are referred to as the psychological, cognitive, social, or organizational aspects of a job that support achieving work goals and stimulate personal development (Bakker & Demerouti, 2007). In line with this, and for the purpose of this study, we consider the following to be important resources that support employees in realizing work-related goals: competences (i.e. knowledge, skills, and abilities), perceived organizational support (e.g. help is available from the organization) and empowerment (i.e. competence and possibilities for self-determination). In line with the differences between mediators, we expect that job attitudes and resources are differentially related to employee-reported HPWPs when considering the fact that employees develop different types of experiences of HRM practices (Beijer et al., 2019).

Distinguishing descriptive and evaluative employee reports of HRM practices

Upon closer inspection of employee reports of HRM practices, it becomes clear that this construct has been studied in a variety of ways, including attempts to capture more objectively whether a practice is present or used and by making use of measures which focus on subjective evaluations by the employee (Beijer et al., 2019; Boon et al., 2019). Interestingly, these different types of reports are conflated and/or used interchangeably in HRM research as if they were the same (Beijer, 2014; Boon et al., 2019; Edgar & Geare, 2014; Guest et al., 2012).

While each of these employee reports of HRM is potentially important in gauging employee experiences of HRM, they reflect different aspects of the notion of employee-reported HRM practices and should therefore be clearly distinguished. So far, multiple empirical studies have shown that employees experience HRM practices in two distinct ways (Edgar & Geare, 2005; Marler et al., 2006). For instance, Edgar and Geare (2014) report a difference between employee reports of actual HRM practices that are operationalized in the work unit versus the utility of HRM practices that measure employee views on the usefulness of these practices. Similarly, Gilbert et al. (2011) as well as Marler et al. (2006) differentiate between the enactment versus quality of HRM practices to stress that employee reports of the number of HRM practices that are actually implemented differ from how well these practices are implemented. In

support of a two-part distinction, the recently published literature reviews on HRM practices measurement by Beijer et al. (2019) and Boon et al. (2019) show that HRM researchers rely on descriptive items versus evaluative items (or a mix thereof) to measure employees' experiences of HRM.

To understand the conceptual distinction between descriptive and evaluative reports of HRM practices, important insights can be derived from the related job design literature that distinguishes between objective versus subjective job measures (Frese & Zapf, 1988). Along the same lines, Spector et al. (2019) propose a separation of so-called factual versus perceptual constructs, with the former reflecting employees' cognitively based assessments of their work environment, while the latter captures employees' affectively laden reports (Zhou et al., 2013). Translated into the notion of employee-reported HRM practices, *descriptive* reports of HRM practices represent a more or less objective or factual report by employees of the HRM practices construct which is founded on a cognitively based assessment of which HRM practices are implemented according to employees, while the *evaluative* conceptualization of HRM practices is more subjective in nature and involves affectively laden assessments by employees of the HRM practices' effectiveness, quality or value (Beijer et al., 2019; Wallace et al., 2016; Zhou et al., 2013).

Descriptive reports of HRM practices

In the literature, two types of descriptive reports are used to assess employees' factual and cognitive experiences of HRM practices. As shown by the literature studies on HRM practice measurement by Beijer et al. (2019) and Boon et al. (2019), these measures include (1) the reported presence of an HRM practice and (2) the reported intensity of HRM practices by employees (see Table 1 for examples). The *presence* of HRM practices represents a cognitively based assessment of HRM practices by employees while it gauges employee reports, using yes/no response options, about whether HRM practices are enacted/used within their work unit or provided to them (Kehoe & Wright, 2013; Kooij et al., 2013; Zatzick & Iverson, 2011). The second type of report – i.e. reported intensity of HRM practices – strongly overlaps with the reported presence of HRM in that it captures the employees' more or less factual report on whether HRM practices are visible, salient, and readily observable to them. Accordingly, those that study employee reports of HRM practice intensity ask employees to report on the degree to which HRM practices are enacted/used using a Likert scale (Aryee et al., 2012; Boon et al., 2011; Liao et al., 2009).

Table 1. Classification and examples of descriptive and evaluative employee reports of HRM practices.

Report type	Description	Example item
Descriptive employee reports of HRM practices:		
Focused on obtaining a more or less factual/objective assessment from employees regarding the presence or use of HRM practices.		
Reported presence of HRM practices	Whether the employee experiences that selected HRM practices are enacted/used	"During the past 12 months, have you had a performance appraisal?" (Kooij et al., 2013)
Reported intensity of HRM practices	Degree to which the employee experiences that HRM practices are enacted/used	"The organization offers me participation in developing strategic plans" (Boon et al., 2011)
Evaluative employee reports of HRM practices:		
Focused on obtaining employees' affectively laden assessment of the effectiveness, quality or satisfaction with HRM practices.		
Reported effectiveness (or utility) of HRM practices	Degree to which the employee perceives that HRM practices help in realizing a selected goal	"My performance evaluations within the past few years have been helpful to me in my professional development" (Macky & Boxall, 2008)
Reported quality of HRM practices	Degree to which the employee perceives that HRM practices are offered in a reliable, prompt and accurate fashion	"Company policies and procedures are clearly communicated to employees" (Macky & Boxall, 2008)
Satisfaction with HRM practices	Degree to which the employee perceives that HRM practices meet his/her needs	"Indicate your level of satisfaction with the amount of flexibility that you have in deciding how your job should be done" (Conway & Monks, 2007)

Evaluative reports of HRM practices

While descriptive measures are aimed at obtaining a factual report, evaluative employee reports of HRM practices capture an employee's emotional appraisal of and affective response to HRM activities in terms of their effectiveness or quality, or the employee's satisfaction with HRM practices (Beijer et al., 2019; Boon et al., 2019). We identified three measures that previous studies have applied to assess employees' appraisal of HRM (see Table 1 for examples). First, some assess employee evaluations of HRM practices using measures of HRM practice *effectiveness* or *utility* (Chang, 2005; Edgar & Geare, 2014; Wheeler et al., 2010). Consistent with the organization design literature, employee reports of HRM effectiveness (or utility) assess whether employees experience that HRM practices help in realizing personal goals such as human development, growth, or performance (Edgar & Geare, 2014; Quinn & Rohrbaugh, 1983).

Second, other researchers studied employee reports of the *quality* of HRM practices (Meijerink et al., 2016). In service management, quality is conceptualized as the difference between expectations and actual performance of a service in terms of its reliability or responsiveness (Parasuraman et al., 1985). In line with this view, HRM scholars studied the quality of HRM in terms of employee reports of the degree to which HRM practices are offered in a reliable, prompt, and accurate fashion (Conway, 2004; Gilbert et al., 2011).

Finally, employee evaluations of HRM have been studied in terms of their *satisfaction* with HRM practices (Conway & Monks, 2007; Kinnie et al., 2005). Satisfaction refers to the degree to which employees perceive that HRM practices meet their needs (Marescaux et al., 2012). Since employee needs can be manifold, existing HRM studies assess the degree to which employees are satisfied in general with selected HRM practices, rather than measuring whether HRM practices meet a particular need (see Table 1 for an example).

Although HRM researchers have never studied the three evaluative reports of HRM in concert, they do share a common conceptual ground as shown by marketing research which reveals that perceptions of service utility, quality, and satisfaction are highly correlated (Chen & Chen, 2010; Cronin et al., 2000; Olsen, 2002). In fact, the common denominator of the evaluative reports is that all three reflect an affective response to HRM in terms of how well an HRM practice meets a selected standard: a goal, expectation, or employee need. Here, evaluative measures differ from their descriptive counterpart, since descriptive reports of HRM reflect a cognitively based report of whether HRM practices are enacted yet without a comparison to a standard¹ and, thus, affection towards HRM.

In sum, we argue that descriptive and evaluative employee reports of HRM practices reflect different approaches to the conceptualization and measurement of employee-reported HRM activities. At the same time, we posit that both types of employee reports are interrelated while they focus on obtaining employees' experiences of HRM practices. To some extent, employees' evaluations of the quality, utility, or satisfaction with an HRM practice may influence their descriptive report of the presence of that practice. For instance, if employees ascribe high-level value to training practices, they may be inclined to engage with this practice more often and, therefore, report higher levels of HRM practice presence. Moreover, employees' descriptive reports of HRM practices may influence their evaluative reports of HRM. For instance, research has shown that employee reports of HRM practice usage relate positively to their evaluations of HRM as they enable employees to engage better with HRM practices and derive value from them, which ultimately makes them more positive in their evaluations of HRM activities (Meijerink et al., 2016). At the same time, although interrelated, both types of employee-reported HRM remain different in that they measure distinct ways in which employees experience and report on HRM practices. This distinction becomes particularly salient when considering the possibility that descriptive and evaluative reports of HRM relate differently to outcomes such as job attitudes and resources.

Linking descriptive and evaluative reports of HPWPs, attitudes, resources, and performance

Although we anticipate that employee reports of HPWPs relate positively to both job attitudes and resources, we expect that the strength of these relationships differs for descriptive and evaluative reports.

Employee-reported HRM and job attitudes

We predict that evaluative reports of HPWPs are more strongly related to job attitudes than their descriptive counterparts. First, evaluative reports of HPWPs strongly link to attitudes because they capture employees' positive appraisal of HPWPs that drive reciprocation processes. According to social exchange theory, evaluative employee reports of HPWPs will directly help to develop favorable job attitudes. More specifically, social exchange theory puts a strong emphasis on the idea that a social exchange should be perceived as *beneficial* – rather than present – for a recipient to reciprocate (Blau, 1964). That is, employee reciprocation – in terms of positive job attitudes and performance – is primarily a function of the effectiveness or quality of HPWPs to them. In comparison to their descriptive counterparts, evaluative reports of HPWPs more strongly capture employees' experiences of whether HRM practices are beneficial to them in terms of realizing a desired goal, whether high quality or meeting employee needs, and therefore will directly and more strongly relate to job attitudes than descriptive reports of HPWPs.

Nevertheless, we expect that descriptive employee reports of HPWPs are positively related to job attitudes, just less strongly than evaluative reports. A positive relationship can be expected as employees may experience the presence of HPWPs as an investment in their wellbeing (Kehoe & Wright, 2013; Paré & Tremblay, 2007). This positive relationship is likely to be weak, however, since the effect of more factual reports of HRM practice presence/intensity is more indirect. This can be expected because the mere presence of HRM practices does not necessarily imply that they provide value to the employee in terms of, e.g. an investment in their wellbeing. In support of this, Meijerink et al. (2016) showed that employees, despite being offered similar HRM practices, differ in how highly they evaluate those practices. Since job attitudes are primarily a function of how beneficial/valuable HRM practices are to employees (Blau, 1964), it can be argued that the relationship between employee descriptive reports of HPWPs and job attitudes is less immediate than for evaluations of HRM practices. Furthermore, Nishii et al. (2008) argue that “in order for HRM practices to exert their desired effect on job attitudes and behaviors, they have to be perceived and

interpreted subjectively by employees in ways that will engender such attitudinal and behavioral reactions” (p. 504). These subjective interpretations of HRM activities are captured more strongly by evaluative reports of HRM practices, implying that job attitudes are more strongly related to evaluative than descriptive employee reports of HPWPs. In support of this claim, Marler et al. (2006) showed that job attitudes are more strongly correlated to employees’ evaluative reaction to training practices in comparison to employee reports of the extent to which they attended training. Accordingly, we propose and test the following hypothesis:

Hypothesis 1a: Evaluative reports of HPWPs are more strongly related to job attitudes than descriptive reports of HPWPs.

Employee-reported HRM and resources

We expect descriptive reports of HPWPs to be more strongly related to resources in comparison to evaluative reports of HPWPs. First, employee descriptive reports of the presence of HPWPs should relate strongly to employee-level resources since they represent the actual provision of the resources necessary for employees to achieve work-related goals. The resources which are frequently studied as employee-level HRM outcomes can be subdivided into personal resources and job resources (Xanthopoulou et al., 2009). Here, personal resources “refer to individuals’ sense of their ability to control and impact upon their environment successfully” (Xanthopoulou et al., 2009, p. 236) and include constructs such as competences (or knowledge, skills, and abilities) and self-efficacy (Schaufeli & Taris, 2014). Job resources reside in the individuals’ work environment and refer to the psychological, cognitive, social, or organizational aspects of a job that support achieving work goals and stimulate personal development (Bakker & Demerouti, 2007). It is the presence of HPWPs, such as training and development, which directly enable employees to accumulate personal resources (e.g. competences), while HPWPs, such as involvement and developmental appraisal, offer employees job resources such as empowerment and organizational support.

Second, we predict that descriptive reports of HPWPs are strongly linked to resources since they signal to employees the availability of job resources which induces a so-called gain spiral of resources (Boon & Kalshoven, 2014; Meijerink et al., 2018; Peccei et al., 2013). COR theorists have proposed that those who have ample resources at their disposal are better positioned to gain additional resources and thus experience a ‘gain spiral’ since they are more motivated to take risks for increased resource gains (Halbesleben et al., 2014; Hobfoll, 2011). The reported presence of HPWPs signals to employees that a caravan of job resources

are available to them (Boon & Kalshoven, 2014; Meijerink et al., 2018). In line with the gain spiral principle, Meijerink et al. (2018) showed that employees who experience the presence of ample HRM practices are more likely to acquire additional resources by engaging in job crafting activities (e.g. pro-active feedback seeking, building supportive relationships at work and skill development). The reported presence of HPWPs is most strongly captured by employees' descriptive reports of HRM. In support of this view, research showed that descriptive reports of HPWPs are strongly and directly related to resources such as organizational support (Butts et al., 2009; Liao et al., 2009), empowerment (Aryee et al., 2012), and self-efficacy/competences (Boon et al., 2011; Liao et al., 2009; Wu et al., 2011).

Lastly, research suggests that evaluative employee reports of HPWPs are positively, yet weakly, related to personal/job resources. A positive relationship can be expected as employee evaluations of HPWPs are shown to be partially dependent on how well HRM practices meet a desired standard in terms of providing them with resources (Buyens & De Vos, 2001; Tsui, 1987). However, whether employees consider HPWPs to be effective does not *directly* imply an increase in personal or job resources. Instead, the relationship between evaluative employee reports of HRM and job resources is more indirect. The idea here is that evaluative reports motivate employees to engage in HRM activities (e.g. engaging in training sessions, setting goals for appraisal purposes, or participating in decision making) and thus utilize HRM practices that help build job resources. For instance, in the case of training and appraisal practices, Kuvaas (2007) concluded that provided HRM practices produce desired job outcomes when employees perceive them to be valuable, because these evaluative reports motivate employees to make more excessive use of these HRM practices. In addition, Colquitt et al. (2000) showed that employees' evaluation of training indirectly increases resources such as self-efficacy and competences, because positive attitudes towards ability-enhancing HRM practices motivate employees to extensively participate in training and development activities. Accordingly, it can be argued that the relationship between employee evaluative reports of HPWPs and job resources is less immediate than for the actual presence of these practices. The actual presence and usage of high-performance HRM practices are captured more strongly by the descriptive measures of HPWPs, implying a stronger relationship between descriptive employee reports of HPWPs and resources than between evaluative reports of HPWPs and resources. As such, we hypothesize that:

Hypothesis 1b: Descriptive reports of HPWPs are more strongly related to job/personal resources than evaluative reports of HPWPs.

Employee-reported HRM and employee performance

Finally, we expect that descriptive and evaluative reports of HPWPs are both related to employee performance through the mediating role of job attitudes and personal/job resources. Research has indeed shown that employee reports of HPWPs are significantly and positively related to task performance (Butts et al., 2009; Den Hartog et al., 2013) and citizenship behaviors (Alfes et al., 2012; Kehoe & Wright, 2013). Some researchers have attributed this positive relationship to the idea that HPWPs offer employees the personal/job resources needed to enact their responsibilities and help others in the workplace (Boon & Kalshoven, 2014; Meijerink et al., 2018). Following conservation of resources theory, HPWPs provide resources that help to empower employees, develop their competences, and support them in their work. The resources which HPWPs offer are reinvested by employees through engaging in in-role and extra-role behaviors (Bal & De Lange, 2015; Hobfoll, 2011) to sustain high-level performance. As employees' descriptive reports of HRM are more factual in nature and are a more cognitively based assessment of HRM practices, we expect that descriptive reports of HPWPs are primarily related to employee performance through the mediating role of personal and job resources. Job attitudes play less of a significant role in mediating descriptive HPWPs–performance relations as the experienced provision of HRM practices does not always imply its effectiveness or utility to employees, on which attitudes are most likely to be based (Beijer et al., 2019; Meijerink et al., 2016).

Researchers who adopted a social exchange perspective suggested that HPWPs relate to performance by creating a strong, emotional bond between the employee and the organization. Here, employee-reported HPWPs are seen as meeting employees' work-related needs and, thus, sustaining job satisfaction, which employees reciprocate through working towards organizational goals and meeting their job responsibilities (Kehoe & Wright, 2013; Purcell & Hutchinson, 2007). Moreover, employees may experience HPWPs as an investment in their well-being and, in so doing, commit themselves to the organization. Organizational commitment has been consistently shown to be related to desired work behaviors as well as discretionary efforts that benefit the organization and its stakeholders (Harrison et al., 2006; Mathieu & Zajac, 1990). For reciprocation processes to emerge, it is important that employees actually experience HRM activities to be beneficial and useful (Blau, 1964; Nishii et al., 2008), which is most strongly captured by employees' evaluative reports of HPWPs. Accordingly, we expect that evaluative reports of HPWPs are primarily related to employee performance through the mediating role of job attitudes.

To summarize, our discussion so far suggests that both job attitudes and personal/job resources mediate between employee-reported HPWPs and employee performance, albeit to different degrees depending on whether descriptive or evaluative reports are used. However, we could think of other mediating paths through which employee reports of HPWPs relate to employee performance, which are not examined in our current study. In fact, both conceptual work and empirical research have suggested that employee-reported HRM practices also add to employee performance by creating psychological climates (Dumont et al., 2017) or fostering work engagement (Alfes, Shantz, et al., 2013; Bal & De Lange, 2015). Given these alternative mediating paths, we expect that the relationship between employee reports of HPWPs and employee performance cannot be fully, but only partially, accounted for by job attitudes and personal/job resources. Accordingly, we propose the following hypothesis:

Hypothesis 2: Job attitudes and personal/job resources partially mediate the positive relationship between evaluative reports of HPWPs and employee performance.

Hypothesis 3: Personal/job resources and job attitudes partially mediate the positive relationship between descriptive reports of HPWPs and employee performance.

Methodology

To test our hypotheses, we relied on a meta-analytical methodology, for two reasons. First, the number of different job attitudes and resources is too large for all of them to be included as possible mediators in a single empirical study (Schaufeli & Taris, 2014). A meta-analysis can handle this variety because it combines the results from different empirical studies that center around a common theme, in our case, job attitudes and personal/job resources (Hunter & Schmidt, 2004). Second, the majority of existing studies have applied one of the five measures of employee-reported HRM practices, as outlined in Table 1 (Beijer, 2014; Edgar & Geare, 2014). A meta-analysis can compare and explain variability across studies and, thus, across the different employee reports of HRM, while it aggregates the correlational estimates from individual studies (Stone & Rosopa, 2017). As such, a meta-analytical approach enables us to test our hypotheses on the differential effects of the use of descriptive and evaluative measures of employee-reported HPWPs. Below we describe how we conducted our meta-analytical study, which started with a structured literature search.

Literature search

To reduce the risk of systematically excluding relevant studies, we followed a series of steps. We started by searching for relevant studies in

the Scopus database. This database was selected because it (1) includes journals from various disciplines where one might find employee-level HPWPs studies and (2) covers 20 percent more journals than other databases such as Web of Science and PsychInfo (Falagas et al., 2008). For the purpose of triangulation, we searched in four additional sources: (1) the databases of leading (HR) management and organizational behavior journals (see Appendix A for an overview); (2) the references to seminal papers on employee reports of HRM (Bowen & Ostroff, 2004; Khilji & Wang, 2006; Liao et al., 2009; Nishii et al., 2008; Nishii & Wright, 2008; Wright & Boswell, 2002); (3) the reference lists of existing literature reviews of the employee-reported HRM literature (Delmotte, 2008; Hong et al., 2013; Kooij et al., 2010; Posthuma et al., 2013); and (4) the ProQuest Digital Dissertations database. To ensure the inclusion of unpublished studies, we searched through the conference programs of the Academy of Management Annual Meetings from 2010 to 2015 and requested unpublished studies through the listserv of the HR Division of the Academy of Management. We applied multiple keywords (see Appendix B for an overview) to search for our main concepts.

Inclusion of studies for the meta-analysis

We relied on four criteria to include a study. First, we only included studies that reported on employee reports of HPWPs. Therefore, studies that examined the experiences of job seekers or managerial reports of their HRM activities were excluded (e.g. Takeuchi et al., 2009). Second, we included studies that examined the relationship between employee-reported HPWPs and outcomes on the individual-employee level. We excluded studies that examined collective/shared employee reports of HRM (e.g. Bal et al., 2013). Third, in line with our conceptualization of HPWPs and the recommendation by Jiang et al. (2012), we only included studies that examined all three ability, motivation, and opportunity-enhancing high-performance HRM policy domains. Lastly, we only included studies that reported their sample size and at least one correlation among employee-reported HPWPs and an employee-level outcome. We contacted the authors to provide us with the necessary information if it was not included in the selected study.

Our initial literature search yielded a total of 11,705 studies. This high number can be explained by our search for concepts that are frequently studied in other research fields such as organizational behavior. On the basis of the analysis of titles and abstracts (and when necessary, the methods/results section), we excluded 10,754 studies because they examined no or other antecedents of job attitudes, job resources and/or

performance, examined other HRM-related phenomena (e.g. HRM implementation by line managers), reported on organizational-level phenomena, relied on qualitative data, or examined the perceptions of job seekers. This resulted in 948 studies remaining, of which 187 duplicates, resulting from our multi-database search strategy, were deleted to ensure sample independence (Wood, 2008). We analyzed the full text of the remaining 761 studies and deleted 665 of them because they did not study all three ability, motivation, and opportunity-enhancing high-performance HRM policy domains. Thus, our final sample included a total of 96 studies.

Coding and operationalization of the variables

We proceeded, with two authors relying on a jointly developed code book (Lipsey & Wilson, 2001), to independently code each study for (1) sample size, (2) correlation estimate, (3) measurement reliability, (4) type of employee report of HPWPs, (5) job attitudes and job/personal resources, (6) employee performance outcome.² Cohen's kappa coefficient to assess inter-rater agreement was 87% across the six study attributes/codes, indicating an acceptable rate of consensus. Disagreements that occurred were solved through discussion among all three authors.

Employee-reported HPWPs

We categorized employee-reported HPWPs into two types: descriptive versus evaluative reports (see also Table 1). Following our conceptualization of employee-reported HRM, studies which examined employees' reports of HPWPs' presence or intensity were coded as relying on a descriptive measure. Studies were coded as measuring evaluative reports when examining employees' reports of the effectiveness, quality, or satisfaction with HPWPs. In about half our sample, we came across studies that used a measure of employee reports of HPWPs that included a mixture of descriptive and evaluative items. This did not come as a surprise, given the lack of clarity regarding the conceptualization of employee-reported HRM (Beijer et al., 2019; Edgar & Geare, 2014). Nevertheless, the majority of these mixed-item measures strongly inclined towards being more descriptive or evaluative in nature. Given the tendency of measures to lean towards one of the two types of employee reports of HPWPs, we coded a study as one that examined descriptive reports when it included a higher proportion of descriptive than evaluative items, and vice versa. To ensure a correct coding, the three authors separately coded the studies and jointly discussed their codes to arrive at a fully consensus-based inclusion of studies into the evaluative or

descriptive report sub-samples. We are aware that studies making use of a uniform-item versus mixed-item measure could affect the results. Therefore, we conducted a post-hoc moderation test (see “Results” section).

Mediator variables

We summarized our mediating variables into two categories: job attitudes and personal/job resources. In line with existing HRM research, which mostly studied affective commitment and job satisfaction as attitudinal HRM outcomes, we included and coded job satisfaction and affective commitment as employees’ job attitudes. Previous meta-analytical studies showed that both variables are strongly related (Mathieu & Zajac, 1990; Meyer et al., 2002). This implies that employees do not strongly differentiate in their attitudes towards their job and employer (for an elaborate discussion, see Harrison et al., 2006). It is important to treat these two job attitude measures as indicators of a higher-order construct to avoid multicollinearity problems when testing our mediation hypotheses. Accordingly, we created a latent “job attitudes” variable which is reflected by affective commitment and job satisfaction.

In line with our conceptualization of resources, we coded competences (i.e. an individual employee’s knowledge, skills, and abilities), self-efficacy, and person-job fit as personal resources, and empowerment and organizational support as job resources (Schaufeli & Taris, 2014). Since personal and job resources occur in caravan (i.e. workers either have ample amounts or little of both) and thus represent an overarching concept that describes an individual employee’s resource pool (Hobfoll, 2011), we included a direct measure/indicator of resources for testing our hypotheses. Besides being in line with the approach adopted in other meta-analytical HRM studies (Jiang et al., 2012), this was also necessary since the number of available employee-reported HPWPs studies that studied a selected resource type was too small. In total, we retrieved 27 employee-reported HPWPs studies that examined a job and/or personal resource. By adopting a direct measure of job resources, we could combine the results of these studies (which is justified on the basis of the resource caravan principle (Hobfoll, 2011)), have a sufficient number of data points (i.e. 27), and, ultimately, estimate a meta-analytical correlation among employee reports of HPWPs and personal/job resources.

Employee performance

We distinguish task performance and organization citizenship behavior as two categories of employee performance. Task performance was reflected by in-role behavior, task performance, customer service quality,

and service performance. Organization citizenship behavior was described by extra-role behavior, helping, creativity, knowledge sharing, and innovative work behavior. Previous research showed that task performance and organization citizenship behavior are strongly correlated (Podsakoff et al., 2009). To avoid multicollinearity biases, we created a latent “employee performance” construct that is reflected by task performance and organization citizenship behavior.

Meta-analytical and path analysis procedures

To test our mediating hypotheses, we relied on a meta-analytical structural equation modelling technique. We first developed a correlation matrix that included meta-analytical correlations among the variables of interest, which was then used for structural equation modelling in AMOS. To calculate the meta-analytical correlations, we relied on the Hunter and Schmidt (2004) meta-analytical procedure. To correct for measurement error, we relied on Cronbach’s alpha. In case when multiple effect sizes had to be combined for one relationship (e.g. combining two types of job resources included in a single empirical study), we calculated the average correlation score. We computed a composite correlation to derive an overall correlation between employee reports of HPWPs and the selected outcome variable when a study examined employee reports of separate HRM practices. We made use of a random-effects model to correct for sampling error by weighting each study’s effect size by its sample size (Hunter & Schmidt, 2004). Furthermore, we calculated the 95% confidence intervals around the sample-weighted correlation mean that was corrected for measurement reliability. We also calculated the Q statistic to assess the level of variation in outcomes across the studies included in our meta-analysis. As with any meta-analysis, our meta-analytical correlations can be influenced by a single, large-sample study as well as publication bias (Kepes et al., 2013). Therefore, we conducted several sensitivity analyses which confirmed that our results were not affected by large-sample studies or publication bias (see Appendix C).

Our sample of included studies only captures a fraction of the research into the interrelations among job attitudes, personal/job resources, and performance. Therefore, following the suggestions by Viswesvaran and Ones (1995) for avoiding a systematic exclusion of relevant studies, we derived the meta-analytical estimates among our mediator and outcome variables from existing meta-analyses that reported mean correlation effect sizes that had been corrected for both sampling error and measurement error.

As a final step, we used the meta-correlation matrix (i.e. Table 2) for structural equation modelling in AMOS. Since the sample sizes for the

different correlations in our matrix are not similar, we imputed the sample size for SEM by calculating the harmonic mean of the correlation sample sizes (Viswesvaran & Ones, 1995), which equaled 8,509 employees. We used maximum-likelihood estimation and reported on the chi-square statistic, comparative fit index (CFI), standardized root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR) to assess model fit (Hu & Bentler, 1999). A well-fitting model was defined as one that had a SRMR \leq .10, RMSEA \leq .08, and CFI \geq .90. To test our mediation hypotheses, we conducted a Sobel test as this allows us to examine the statistical significance of indirect relationships. We relied on two statistics to assess the differential effect of descriptive versus evaluative HRM reports. The first was the Steiger Z-test (Steiger, 1980), which assesses the significance of differences between regression coefficients. The other was the epsilon statistic, which determines the relative weight of each predictor in explaining the variance of a dependent variable (Tonidandel & LeBreton, 2015).

Results

Table 2 presents the correlation matrix that includes the mean-correlation estimates among all our study variables. The results presented below are based on the sample-weighted correlation means that were corrected for measurement reliability (r_c), as reported in Table 2.

Measurement model

To confirm the factorial structure of our latent “job attitudes” and “employee performance” constructs, we first tested a measurement model that included all our mediator and performance measures (see Figure 2). The chi-square of this measurement model was significant ($\chi^2(3) = 100.26$; $p < .000$), which was to be expected given our large sample size. The other fit indices showed that the measurement model had a good fit: CFI = .98; SRMR = .03; RMSEA = .08. Furthermore, all indicators adequately loaded onto their corresponding constructs ($\beta > .75$, $p < .001$). Accordingly, we made use of these constructs for testing our hypotheses.

Differential relationships between types of employee-reported HPWPs and outcomes

Our first pair of hypotheses predict that evaluative reports of HPWPs are more strongly related to job attitudes than descriptive reports (Hypothesis 1a), while descriptive reports of HPWPs are more strongly related to personal/job resources than evaluative reports (Hypothesis 1b).

Table 2. Meta-analytical correlation matrix.

Variables	1	2	3	4	5	6
Descriptive HPWP report						
Evaluative HPWP report (r, r_c)	.46, .50					
k (N)	4 (6,850)					
95% CI	.43; .58					
Q, σ^2_p	36.25***, .00					
Job satisfaction (r, r_c)						
r, r_c	.36, .46	.47, .53				
k (N)	25 (40,458)	7 (4,624)				
95% CI	.32; .57	.44; .63				
Q, σ^2_p	3124.85***, .08	92.13***, .01				
Affective organizational commitment (r, r_c)						
r, r_c	.36, .44	.37, .46	n/a, .65 ^a			
k (N)	32 (21,364)	19 (20,225)	69 (23,656)			
95% CI	.37; .49	.40; .51	n/a			
Q, σ^2_p	536.47***, .02	252.83***, .01	n/a, n/a	.49, .63 ^b		
Personal/job resources (r, r_c)						
r, r_c	.49, .55	.31, .37	.52, .64 ^b	.31 (14,344)		
k (N)	15 (10,071)	10 (6,705)	53 (17,875)	.56; .69		
95% CI	.45; .64	.28; .47	n/a, n/a	n/a, n/a		
Q, σ^2_p	412.65***, .03	135.42***, .02	n/a, n/a	.17, .23 ^a		
Task performance (r, r_c)						
r, r_c	.21, .25	.26, .30	.22, .35 ^c	.21 (5,072)	.21, .27 ^b	
k (N)	22 (18,489)	6 (1,664)	44 (5,561)	.07; .40	22 (6,118)	
95% CI	.17; .32	.18; .42	n/a; n/a	n/a, .08	n/a, n/a	
Q, σ^2_p	495.94***, .03	29.65***, .02	214.01*, n/a	.19, .25 ^e	.24; .34 ^b	
Organization citizenship behavior (r, r_c)						
r, r_c	.30, .35	.23, .28	.22, .31 ^d	42 (10,747)	.11 (3,174)	.49, .60 ^f
k (N)	23 (12,339)	8 (5,638)	10 (9,248)	.09; .41	72 (21,881)	n/a
95% CI	.26; .43	.15; .40	n/a; n/a	n/a, .09	.14; .50	n/a
Q, σ^2_p	482.53***, .04	97.54***, .02	n/a, n/a	n/a, .09	n/a, n/	648.36***, n/a

r = mean sample-size-weighted correlation, r_c = mean sample-size-weighted correlation corrected for attenuation due to unreliability, k = number of independent samples, N = total sample size, 95% CI = confidence interval around the mean sample-size-weighted corrected correlation (heterogeneous), Q = chi-square test for the homogeneity of the corrected correlation, σ^2_p = variance in corrected correlation.

* $p < .05$, *** $p < .001$.

Letter superscripts indicate the source of the mean sample-size-weighted corrected correlation: ^aMeyer et al. (2002), ^bSeibert et al. (2011), ^cJudge et al. (2001), ^dLePine et al. (2002), ^eRiketta (2002), ^fPodsakoff et al. (2009).



Figure 2. Measurement model of mediator and employee performance variables. $N = 8,509$ employees, standardized regression coefficients are shown *** $p < .001$.

Table 3. Results of the differential effects of descriptive versus evaluative employee reports of HPWPs on job attitudes and job resources.

Predictors	Job attitudes			Personal/job resources		
	β	S.E.	%R ²	β	S.E.	%R ²
Descriptive employee report of HPWPs	.33***	.01	42%	.49***	.01	77%
Evaluative employee report of HPWPs	.45***	.01	58%	.13*	.01	23%
R ²	.46			.32		
Z-score	-12.35***			36.52***		

$N = 8,509$ employees, standardized regression coefficients are presented.

* $p < .05$, *** $p < .001$.

To test these hypotheses, we included both types of employee-reported HPWPs in regressing their effect on job attitudes and personal/job resources. As shown in Table 3, both descriptive and evaluative reports of HPWPs are significantly and positively related to job attitudes. The results of the Z-test show that the regression coefficient of evaluative reports of HPWPs ($\beta = .45$, $p < .001$) are significantly larger than that of descriptive reports of HPWPs ($\beta = .33$, $p < .001$; $Z = -12.35$, $p < .001$). Moreover, the relative weights analysis shows that evaluative reports of HPWPs explain a larger proportion of variance in job attitudes (i.e. 58%) compared to descriptive reports of HPWPs (42%). This provides supports for our Hypothesis 1a.

Similarly, we found significant, positive relations between both employee-reported HPWPs types and personal/job resources. The results of the Z-test show that the regression coefficient of descriptive reports of HPWPs ($\beta = .49$, $p < .001$) is significantly larger than that of evaluative reports of HPWPs ($\beta = .13$, $p < .05$; $Z = 36.52$, $p < .001$). Furthermore, descriptive HPWPs reports and evaluative HPWPs reports explained 77% and 23%, respectively, of the variance in personal/job resources. These results provide support for our Hypothesis 1b.

Table 4. Model comparison and fit statistics for alternative models.

Model	χ^2	df	$\Delta \chi^2$	CFI	RMSEA	SRMR
Theoretical model (Figure 1)	4202.79***	10		.82	.22	.10
Alternative model 1 ^a	621.53***	9	3581.26***,b	.97	.09	.03
Alternative model 2 ^c	457.54***	8	163.99***,d	.98	.08	.03
Alternative model 3 ^e	418.29***	7	39.25***,f	.98	.08	.02

$N = 8,509$ employees.

*** $p < .001$.

^aAdds the direct path from personal/job resources to job attitudes.

^bModel fit compared with the theoretical model (Figure 1).

^cAdds the direct path from descriptive employee reports of HPWPs to employee performance.

^dModel fit compared with the Alternative model 1.

^eAdds the direct path from evaluative employee reports of HPWPs to employee performance.

^fModel fit compared with the Alternative model 2.

Mediation results

We predicted that job attitudes and personal/job resources partially mediate the positive relationship between both types of employee reports of HPWPs and employee performance (Hypotheses 2 and 3). To test these hypotheses, we input our meta-analytical correlation matrix (see Table 2) into AMOS to assess the fit of this model (see Figure 1) to our data. As shown in Table 4, our proposed model did not fit the data very well ($\chi^2(10) = 4202.79$; CFI = .82; SRMR = .10; RMSEA = .22). We therefore added a direct path from personal/job resources to job attitudes, which is consistent with the conversation of resources theory and social exchange theory, which predict that employees reinvest their personal/job resources and/or reciprocate the availability of job resources by displaying job attitudes. Adding this path significantly improved model fit (Alternative model 1: $\Delta\chi^2 = 3581.26$; $\Delta df = 1$; $p < 0.001$) and produced better fit statistics (Alternative model 1: CFI = .97; SRMR = .03; RMSEA = .09). Then we proceeded by adding a direct path from employees' descriptive reports of HPWPs to employee performance to assess whether job attitudes and personal/job resources play a full or partial mediating role. Adding this path significantly improved model fit (Alternative model 2: $\Delta\chi^2 = 163.99$; $\Delta df = 1$; $p < 0.001$) and produced better fit statistics (Alternative model 2: CFI = .98; SRMR = .03; RMSEA = .08). Finally, we added a direct path from employees' evaluative reports of HPWPs to employee performance to assess whether job attitudes and personal/job resources fully or partially explain this relationship. Adding this path helped to further improve the model fit (Alternative model 3: $\Delta\chi^2 = 39.25$; $\Delta df = 1$; $p < 0.001$) and produced better fit statistics (Alternative model 3: CFI = .98; SRMR = .02; RMSEA = .08). Therefore, we relied on the Alternative model 3 (see Figure 3) for testing our mediation hypotheses.

Figure 3 shows the standardized path estimates for the final mediating model (Alternative model 3) as well as the squared multiple correlations

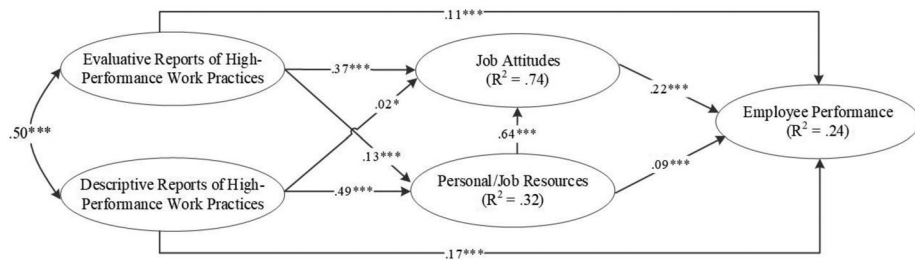


Figure 3. Alternative model 3 of the outcomes of employee reports of HPWPs. $N = 8,509$ employees, standardized regression coefficients are shown * $p < .05$ ** $p < .01$ *** $p < .001$.

(R^2) for job attitudes (.74), personal/job resources (.32), and employee performance (.24). In line with our initial comparative analysis, employees' descriptive and evaluative reports of HPWPs are positively and significantly related to job attitudes and personal/job resources. Both job attitudes and personal/job resources are in turn significantly and positively related to employee performance ($\beta = .22$; $p < .001$ for job attitudes; $\beta = .09$; $p < .001$ for personal/job resources). Furthermore, personal/job resources are significantly and positively related to job attitudes ($\beta = .64$; $p < .001$). Lastly, both types of employee reports of HPWPs are significantly and positively related to employee performance ($\beta = .17$; $p < .001$ for descriptive employee reports of HPWPs; $\beta = .11$; $p < .001$ for evaluative employee reports of HPWPs). These results show that personal/job resources and job attitudes partially mediate the positive relationship between descriptive and evaluative employee reports of HPWPs on the one hand, and employee performance on the other.

We conducted two Sobel tests to assess the significance of these mediating effects. The first Sobel test showed that the indirect relationship between employees' evaluative reports of HPWPs and employee performance is significantly and partially mediated by job attitudes ($Z = 7.26$, $p < .001$) and personal/job resources ($Z = 4.25$, $p < .001$). Therefore, we can accept Hypothesis 2. The second Sobel test showed that the indirect effect between employees' descriptive reports of HRM and employee performance is significantly and partially mediated by job attitudes ($Z = 2.36$, $p < .05$) and personal/job resources ($Z = 4.48$, $p < .001$). This lends support for Hypothesis 3.

Post-hoc moderation analyses and robustness checks

We performed several post-hoc tests to assess the possibility that moderators affect the relationship between employee-reported HPWPs and employee outcomes. This is important to rule out the possibility that our results on the differential impact of descriptive versus evaluative reports of HPWPs are confounded by a third variable. To this end, we conducted a

Table 5. Post-hoc analysis.

Estimates	Job attitudes		Personal/job resources	
	β	S.E.	β	S.E.
Intercept	.35***	.03	.40*	.17
Type of employee report of HPWPs	.05	.03	-.12*	.05
Uniform-item usage	-.08**	.03	.01	.06
Type of HPWPs bundling	.10***	.03	.15**	.06
Multi-source data	-.05	.05	-.08	.07
Research design	-.03	.09	-.14*	.07
R ²	.42		.52	
τ^2	.01		.01	
Q	1557.63***		355.99***	

N = 8,509 employees.

p* < .05, *p* < .01. ****p* < .001.

Notes: For type of employee report of HPWPs: 0 = descriptive employee report of HPWPs, 1 = evaluative employee report of HPWPs. For uniform-item usage: 0 = use of mixed items; 1 = use of uniform items. For type of HPWPs bundling: 0 = average of correlations among individual HPWPs; 1 = high-performance work systems consisting of coordinated bundles of multiple HPWPs. For multi-source usage: 0 = use of single-source data; 1 = use of multi-source data. For research design: 0 = cross-sectional research design; 1 = longitudinal research design. R² = amount of heterogeneity accounted for. τ^2 = estimated amount of residual heterogeneity. Q = test statistic for the test of homogeneity.

meta-analytical regression analysis using the *metafor* package in *R* (Viechtbauer, 2010). Specifically, we regressed the correlation estimates for employee-reported HPWPs and job attitudes as well as personal/job resources onto the type of employee-reported HPWPs (i.e. descriptive versus evaluative reports), alongside the following moderators (see Table 5):

1. Whether a study uses mixed-item versus uniform-item measures of employee-reported HPWPs. As discussed in the methodology section, we came across studies that relied on employee-reported HPWPs measures that included a mixture of descriptive and evaluative items. Measures that do not mix evaluative and descriptive items are likely to produce stronger estimates. To explore this possibility, we compared the meta-correlation estimates of studies that relied on mixed-item measures with those that used more uniform-item measures.
2. Whether individual HPWPs or high-performance work systems (i.e. HPWSs) are studied (Combs et al., 2006). Here, individual HPWPs are operationalized as the average of correlations among individual HPWPs and a selected outcome derived from an empirical study included in our meta-analysis. High-performance work systems on the other hand, are coordinated bundles of multiple HPWPs that create synergies and reinforce one another such that systems/bundles of HPWPs likely have a stronger influence on job attitudes and personal/job resources than the average of individual HRM practices.
3. Whether a study relied on single-source data (i.e. reports on HPWPs and their outcomes coming from individual employees) or multi-source data (e.g. employee reports on HPWPs combined with

managerial reports on HRM outcomes). Our expectation is that the use of single-source data produces stronger estimates in comparison to the use of multi-source data.

4. Whether primary studies are cross-sectional or longitudinal in nature. Since the effect of HRM activities are likely to be weaker over time, we expect that meta-analytical estimates coming from studies that adopted a longitudinal research design are weaker than those from cross-sectional studies.

As can be seen in [Table 5](#), we found that the beta coefficient for the type of bundling of HPWPs was positive and significant ($\beta = .10$, $p < .001$ for job attitudes; $\beta = .15$, $p < .01$ for personal/job resources). This shows that the relationship between employee reports of HPWPs and selected employee-level HRM outcomes are stronger when systems/bundles of HPWPs are examined in comparison to situations where HPWPs are operationalized as the average of correlations among individual HPWPs. Furthermore, we found the estimate for the relationship between research design and personal/job resources to be significant and negative ($\beta = -.14$, $p < .05$). This implies that the relationship between employee reports of HPWPs and personal/job resources is weaker in longitudinal studies in comparison to cross-sectional studies. We found that the beta coefficient for the usage of uniform items was negative and significant for job attitudes ($\beta = -.08$, $p < .01$), yet insignificant for personal/job resources ($\beta = .01$, $p = .86$). This shows that the relationship between employee reports of HPWPs and job attitudes is stronger when studies mix descriptive and evaluative items for measuring employee reports of HPWPs.

Finally, the direction of the beta coefficients for the type of employee report of HPWPs (coded as: 0 = descriptive employee report; 1 = evaluative employee report) are consistent with our earlier results on the differential effects of descriptive versus evaluative employee reports of HPWPs. Namely, the relationship between type of employee report of HPWPs and job attitudes turned out to be positive. Although this relationship is not statistically significant (which should not be surprising given the relatively small sample size of included studies), the direction of the relationship is nevertheless consistent with our earlier results. Namely, the estimate in [Table 5](#) indicates that evaluative employee reports of HPWPs are more strongly related to job attitudes than their descriptive counterparts ($\beta = .05$, $p = .11$). The beta coefficient for type of employee report of HPWPs and personal/job resources was negative and significant ($\beta = -.12$, $p < .05$). This shows that descriptive employee reports of HPWPs, in comparison to evaluative reports of

HPWPs, are more strongly related to personal/job resources. On the basis of these results, we can be confident that our earlier results on the differential impact of descriptive versus evaluative reports of HPWPs hold when controlling for the confounding effects of specific other variables that moderate the relationship between employee reports of HPWPs and employee-level outcomes.

Finally, the use of meta-analytical mean correlations as inputs for meta-analytical structural equation modelling (MASEM) creates the risk of overlooking potential between-study heterogeneity. Therefore, to gain further insight into the generalizability of our mediation results, we reanalyzed our Alternative Model 3 using full information MASEM (FIMASEM) as recently developed by Yu et al. (2016). This approach uses both meta-analytical correlations and standard deviations (reported in our Table 2) to generate a large number of bootstrap samples on which a proposed mediation model is tested to account for between-study heterogeneity in effect sizes. Drawing on 500 bootstrap samples, the results of the FIMASEM analysis are consistent with the paths coefficients obtained from our fixed-effect MASEM (and as reported in our Figure 3). Specifically, the FIMASEM analysis showed that job attitudes are positively related with descriptive reports of HPWPs ($\beta = .06$) and evaluative reports of HPWPs ($\beta = .33$). Moreover, personal/job resources are positively related with descriptive reports of HPWPs ($\beta = .47$) and evaluative reports of HPWPs ($\beta = .15$). In turn, both job attitudes ($\beta = .04$) and personal/job resources ($\beta = .12$) are positively associated with employee performance. The same goes for both types of employee-reported HPWPs in relation to employee performance ($\beta = .04$ for descriptive reports of HPWPs and $\beta = .13$ for evaluative reports of HPWPs).

Discussion

In line with developments in the field, the current meta-analysis focused on employee reports of HRM practices and their relationship to employee performance. Based on the observation that a lack of clarity exists regarding the conceptualization and measurement of employee-reported HRM practices, we follow others in differentiating between descriptive versus evaluative measures of employee reports of HRM (Beijer et al., 2019; Boon et al., 2019; Edgar & Geare, 2005). This opens the way to uncovering differential relationships between types of employee-reported HRM and employee-level outcomes. By drawing on meta-analytical correlations obtained from almost 100 primary studies, we found that descriptive employee reports of HPWPs relate more

strongly to personal/job resources, while evaluative reports of HPWPs were shown to be more strongly related to job attitudes and that both relate strongly to employee performance. Moreover, our results show that personal/job resources and job attitudes partially mediate between both types of employee-reported HPWPs and employee performance. Our results have several implications for research and practice.

Research implications

First, one of the major implications based on the findings of our study is the need for future studies to distinguish more clearly between descriptive and evaluative employee reports of HRM. The extant literature on employee-reported HRM has relied on different measures of employee experiences of HRM and assumed homogeneity (often implicitly) in their relationship with employee outcomes (Beijer, 2014; Edgar & Geare, 2014; Guest, 2011). Our results show that this is not the case because descriptive and evaluative reports of HPWPs relate differently to job attitudes and personal/job resources. This is important and advances our knowledge on the HRM–outcome relationship as it shows that not all employee-reported HRM–outcome studies are comparable.

Second, we demonstrate that both types of employee-reported HPWPs relate positively to employee performance through multiple paths, that is, by improving job attitudes and personal/job resources. Although job attitudes and personal/job resources are both important, these mediating mechanisms differ in their conceptual power for explaining employee-reported HPWPs–performance relationships. It turns out that descriptive reports of HPWPs are primarily related to employee performance by signaling to employees that they are provided with the personal/job resources needed to perform. This is consistent with the conservation of resources theory, which predicts that the resources that HPWPs offer are reinvested by employees through engaging in in-role and extra-role behaviors (Bal & De Lange, 2015; Hobfoll, 2011). In descriptive HPWPs–performance relationships, job attitudes seem to play a more secondary role. Here, job attitudes likely represent a means for employees to reinvest the personal/job resources that follow from employees' descriptive reports in terms of whether HPWPs are used and offered to them (Boon & Kalshoven, 2014; Hobfoll, 2001). Evaluative reports of HPWPs and employee performance turn out to be related primarily through the mediating role of job attitudes. This is consistent with social exchange theory, which predicts that social exchanges (i.e. HPWPs) should be perceived as *beneficial* (i.e. evaluative reports) for an employee to reciprocate with positive job attitudes and performance (Blau, 1964).

Personal/job resources, on the other hand, seem to play a more secondary role in explaining evaluative HPWP–performance relationships. Here, personal/job resources likely follow from job attitudes which are driven by employees' evaluative reports of HPWPs and which motivate employees to exert efforts to acquire/develop more personal/job resources. Taken together, this implies for future studies that job attitudes can best be examined when explaining how evaluative reports of HPWPs relate to employee performance (and study personal/job resources as one of the explanations of why attitudes and performance are related), while adopting a resource lens to explain the relationship between descriptive reports of HPWPs and performance (with job attitudes being one of the possible pathways between resources and performance).

Third, and in line with previous studies (Beijer et al., 2019; Boon et al., 2019), we found that more than half of the studies in our sample rely on a mixture of evaluative and descriptive items to measure employee reports of HPWPs. Our results suggest that improving operational clarity can be beneficial. In our post-hoc analysis, we found that relationships between employee-reported HPWPs and job attitudes turn out to be stronger when mixed-item measures are used. This can be explained by our result that employee attitudes such as job satisfaction and affective commitment, albeit to different degrees, depend on both descriptive and evaluative reports of HPWPs. For instance, job satisfaction is a function of both the value that HPWPs offer to employees (captured by evaluative items) which generates reciprocation processes (Blau, 1964; Nishii et al., 2008), as well as the degree to which employees are exposed to HPWPs (captured by descriptive items). Mixed-items measures cover a broader conceptual domain, such that evaluative and descriptive reports likely complement and synergize for creating stronger relationships between employee reports of HPWPs and job attitudes. Such complementarities and synergies are unlikely to occur with uniform-item measures that do not blend descriptive and evaluative items, thereby creating weaker relationships between employee reports of HPWPs and job attitudes. Collating evaluative and descriptive items into a single measure, however limits the possibilities to uncover such synergies. Therefore, and in line with the implication to better differentiate between evaluative and descriptive employee reports of HRM, we encourage future studies to study whether evaluative and descriptive employee reports of HPWPs – as separate theoretical concepts and thus, measures – synergize in predicting employee outcomes. Here, we would expect that the strong relationship between evaluative employee reports of HPWPs and job attitudes (as observed in our study) will be moderated by descriptive

employee reports of HPWPs and turn out to be even stronger under high values of descriptive reports.

Fourth, our results imply that descriptive and evaluative measures represent distinct but related approaches to the measurement of employee-reported HRM practices. As a correlation of .50 is found between evaluative and descriptive reports, it can be concluded that both types of measures are related. However, at the same time, our results show that these two types of measures are differentially related to selected outcomes, which implies that they function differently. Based on this finding, future research could further disentangle the distinctiveness of these constructs. Besides the conceptual differences mentioned, future studies could focus specifically on comparing both types of items based on a study design in which subsamples of respondents respond to different types of items. This type of split-ballot multitrait-multimethod approach (Revilla & Saris, 2013) could provide more detailed insights into the conceptual nature of both types of measures. This meta-analysis has provided initial insights into the differences between different types of employee reports of HPWPs (and their underlying measures). We hope that this inspires future studies to examine the relatedness as well as distinctiveness of descriptive and evaluative employee reports of HRM.

Finally, we found direct relationships between employee-reported HPWPs and employee performance that could not be explained by the mediating roles of job attitudes and personal/job resources. This implies that personal/job resources and job attitudes, although highly effective in explaining the relationship between employee-reported HPWPs and employee performance, do not fully account for this relationship. As such, our results suggest that it would be useful to study additional mediators like work engagement, which is an activating job attitude shown to be related to employee-reported HPWPs in previous studies (Alfes, Shantz, et al., 2013; Bal & De Lange, 2015; Meijerink et al., 2018). Accordingly, we hope that our results motivate future studies to examine other mediators in concert with those studied here to assess whether they fully mediate the relationship between employee reports of HPWPs and employee performance.

Implications for practice

Our results also have implications for practitioners. First, they show how managers can enhance employee contributions through improving employee experiences of HPWPs. Employee performance increases when organizations make HPWPs visible and valuable for employees, ensure that they are satisfied with their job, and provide them with important

resources such as competences, empowerment, or supportive relationships. Specifically, to ensure that employees can rely on important personal/job resources, our results imply that managers can best ensure that employees experience that they are provided with ample HPWPs. Previous research showed that managers can ensure employee experiences of the provision of HRM practices when HRM practices and processes are aligned with the strategy of the organization (Gurbuz & Mert, 2011), when supervisors spend more effort and time on engaging in HRM activities within their team or branch (Aryee et al., 2012; Bos-Nehles & Meijerink, 2018), and when supervisors share work- and organization-related information with their employees (Den Hartog et al., 2013). On the other hand, on the basis of our findings, we recommend that managers ensure that employees view the provided HPWPs as valuable if they intend them to develop favorable job attitudes. Previous studies showed that managers can increase the value of provided HRM practices for employees by improving employees' abilities to use HRM practices (Meijerink et al., 2016), increasing the HRM competences of line managers who are responsible for the implementation of HRM practices (Bos-Nehles et al., 2013; Gilbert et al., 2015), or ensuring that HRM professionals effectively execute their administrative expert role (De Winne et al., 2013).

At the same time, our results present a cautionary note to managers aiming to increase employee performance as they should not only invest in HPWPs with the goal of increasing employees' satisfaction with their jobs and binding them to the organization. Another important and secure route towards improving employee performance seems to be ensuring that HPWPs do provide value to employees or are offered to employees with the goal of empowering them, developing their competences, or ensuring that they fit their jobs. In fact, previous research findings suggest that employees are more likely to leverage job resources for improving performance when they are committed to the organization (Alfes, Shantz, et al., 2013; Kuvaas, 2007). We thus advise managers to ensure the provision of ample HPWPs for employees to build job/personal resources and ensure that HPWPs provide value to build the desired job attitudes needed for translating employee-level resources into performance.

Limitations and future research

Similar to any study, the results and implications of our current meta-analysis should be viewed in light of its limitations. First, the majority (78%) of the empirical studies included in our meta-analysis relied on single-source data coming from employees and thus may be subject to common-method bias, which may partially explain why some types of

employee reports of HPWPs are strongly related to selected outcomes (see Beijer et al., 2019 for a discussion). For instance, evaluative HPWPs reports and employee attitudes share a similar conceptual domain, such that observed relationships among these variables may be stronger in single source/method research designs. Furthermore, almost all included studies (95%) were cross-sectional in nature, which limits us in drawing conclusions on the directionality of the employee-reported HPWP–performance relationship. It is possible that job attitudes also explain employee reports of HPWPs, with employees being more favorable in their evaluations of HRM practices when they feel highly committed to the organization. Equally, personal resources such as knowledge and skills are shown to be positively related to employees’ evaluation of HRM since these offer employees the possibility to create value out of provided HRM practices (Meijerink et al., 2016). Moreover, cross-sectional, single source research designs may produce a strong relationship between employee-reported HRM and, e.g. job attitudes that result from mood congruency effects (Bower & Forgas, 2001), which would cause respondents to respond similarly to predictor and mediator variables based on their mood (Beijer et al., 2019). Unfortunately, we did not have enough observations to examine how the study design moderates the relationship between employee-reported HPWPs and employee-level outcomes. We therefore encourage future studies to adopt longitudinal research designs and collect data among multiple informants to replicate our results.

Second, our study is limited in that it does not compare employee-reported HRM measures along dimensions other than the descriptive versus evaluative item usage. For instance, employee-reported HRM measures may also differ depending on whether the organization or work unit is used as the referent in measurement items (e.g. “In our work unit, [HRM practice] is present” versus “In my organization, [HRM practice] is present”) or whether HRM practices have to be reported as being available versus being actually implemented. Although these examples show that there are serious differences in the meaning and measurement of HRM practices, we did not aim (and are not able) to uncover all these differences by means of a single meta-analytical study. Moreover, albeit sufficient, the sample size in the current study for estimating the meta-analytical correlation between descriptive and evaluative reports of HPWPs is small ($N = 4$). Accordingly, we hope that future studies will further examine the interrelationships among different types of employee reports of HRM and will focus on further improving clarity in the measurement of employee-reported HRM practices and decreasing mixing the usage of descriptive and evaluative employee reports in the same studies.

Third, similar to other meta-analyses that examined mediating mechanisms (Colquitt et al., 2000; Jiang et al., 2012), we did not control for the confounding effect of variables such as intrinsic motivation, general positive affect, or work engagement because the majority of studies did not provide correlations between these variables and those included in our mediating model.

Lastly, we conceptualized employee performance into task performance and organization citizenship behavior. Some researchers have argued that withdrawal behaviors (e.g. employee turnover and absenteeism) are also indicators of employee performance (Katz & Kahn, 1978; Mackay et al., 2017). The majority of employee-reported HPWP studies examined employees' turnover *intentions*, which are not strongly indicative of actual turnover behavior (Steel & Ovalle, 1984; Tett & Meyer, 2006). As a result, we could not examine the relationship between employee-reported HRM and withdrawal behaviors.

Conclusion

Our meta-analytical study examined how descriptive and evaluative employee reports of HRM practices relate to employee-level outcomes in heterogeneous ways. In doing so, we found that descriptive reports of HPWPs are more strongly related to personal/job resources, while evaluative reports of HPWPs relate more strongly to job attitudes. Furthermore, we found that resources and job attitudes partially mediate the positive relationship between employee reports of HPWPs and employee performance. These results emphasize the importance of distinguishing between descriptive and evaluative employee reports of HRM practices, and we hope that they will encourage researchers to study why descriptive and evaluative reports of HRM practices differentially relate to outcomes. Gaining more insight into the functions that different types of employee experiences of HRM can fulfill, such as the fulfillment of functional versus emotional needs, can shed more light on the pathways through which employee reports of HRM practices are associated with outcomes, ultimately contributing to a better understanding of the mechanisms underlying the relationship between employee-reported HRM and employee performance.

Notes

1. We acknowledge that even with descriptive HRM system reports, there will be some standard for comparison with e.g. employees' expectations or past experiences. Such comparisons are, however, more related to concepts such as psychological contract breach/fulfillment which are beyond the scope of this paper.

2. Please contact the corresponding author in case you want to receive the overview of how we coded our included studies for extending and replicating our findings.
3. Articles included in the meta-analysis are marked with an asterisk.

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APPENDIX A: Overview of journal databases used in search (in alphabetical order)

Academy of Management Journal
 Asia Pacific Journal of Human Resources
 British Journal of Management
 Employee Relations
 European Journal of Work and Organizational Psychology
 Human Resource Development Quarterly
 Human Resource Management
 Human Resource Management Journal
 International Journal of Human Resource Management
 Journal of Applied Psychology
 Journal of Management
 Journal of Management Studies
 Journal of Occupational and Organizational Psychology
 Journal of Organizational Behavior
 Journal of Vocational Behavior
 Organization Science
 Organizational Behavior and Human Decision Processes
 Personnel Psychology
 Personnel Review

APPENDIX B: Key words used during literature search

Key words for employee-reported HRM practices

“Human resource management”, “human resource system”, “human resource policy”, “human resource practice”, “high-performance work system”, “high-performance work practice”, “high performance practice”, “high-involvement work system”, “high-involvement work practice”, “high-commitment work system”, “high-commitment work practice”, “high-commitment practice”, “high-commitment system”, “personnel policy”, “human resource management effectiveness”, “human resource management service quality”, “human resource management helpfulness”, “satisfaction with human resource management”, “staffing”, “recruitment”, “selection”, “training”, “development”, “appraisal”, “performance management”, “compensation”, “reward”, “pay for performance”, “job rotation”, “job enlargement”, “job enrichment”, “information sharing”, “involvement”, “participation in decision making”, and “teamwork”.

Key words for job attitudes

“Commitment”, “job satisfaction”, and “attitude”.

Key words for job resources

“Human capital”, “knowledge”, “skills”, “ability”, “self-efficacy”, “leader-member exchange”, “organizational support”, “supervisor support”, “empowerment”, “feedback”, “person-job fit”, “personal resources” and “job resources”.

Key words for employee performance

“Employee behavior”, “task performance”, “organization citizenship behavior”, “effort”, “productivity”, “service quality”, and “creativity”

APPENDIX C: Post-hoc sensitivity analyses

We conducted several sensitivity analyses to confirm the robustness of our results. First, to assess the influence of single studies, we conducted a sample removed analysis where we removed individual studies, one at a time, and re-computed the meta-analytical correlation (Iyengar & Greenhouse, 2009). This showed that less than 10 percent of the studies produced a different mean correlation when removed from the meta-analysis. We included these recomputed correlations in our meta-analytical correlation matrix and fitted our final mediating model (Figure 3) to this matrix. The model fit statistics ($\Delta\chi^2 = 63.25$; $\Delta df = 7$; $p < .001$; CFI = .98; RMSEA = .08; SRMR = .02) as well as coefficient estimates (descriptive reports of HPWPs versus evaluative reports of HPWPs and job attitudes, respectively: $\beta = .19$, $p < .001$; $\beta = .44$, $p < .001$; descriptive reports of HPWPs versus evaluative reports of HPWPs and resources, respectively: $\beta = .49$, $p < .001$; $\beta = .21$, $p < .001$) resembled those that were found when using our original correlation matrix. This indicates that our results are not heavily influenced by a single, large-sample study.

Second, to correct for publication bias we conducted a trim-and-fill analysis because it corrects for funnel plot asymmetries that potential result from the exclusion of unpublished studies which found non-significant/small effect sizes that allegedly cause publication bias (for a detailed explanation, we refer to Duval & Tweedie, 2000). The majority of the studies included in our meta-analyses fell within the funnel plot boundaries. Furthermore, the number of studies which resided on the left-hand side of the funnel plot (i.e. those that present small-scale and/or non-significant effect sizes) equaled those on its right-hand side, which is a first signal that publication bias is not concerned. Nevertheless, we recomputed the mean correlations among employee reports of HPWPs, job attitudes and resources on the basis of our trim-and-fill analysis, and included these in our meta-analytical correlation matrix. Our final model (Figure 3) was fitted to this new 'trimmed-and-filled' matrix. The model fit statistics resembled those obtained when using our original correlation matrix ($\Delta\chi^2 = 62.06$; $\Delta df = 7$; $p < .001$; CFI = .98; RMSEA = .08; SRMR = .02). Also, the regression coefficients obtained from the 'trimmed-and-filled' matrix resembled those obtained from our original matrix (descriptive reports of HPWPs versus evaluative reports of HPWPs and job attitudes, respectively: $\beta = .24$, $p < .001$; $\beta = .32$, $p < .001$; $Z = 7.78$, $p < .001$; descriptive reports of HPWPs versus evaluative reports HPWPs and personal/job resources, respectively: $\beta = .53$, $p < .001$; $\beta = .09$, $p < .001$). This shows that our results and conclusions are not affected by a potential publication bias.