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# **When and How Developmental Rewards and Expected Contributions Relate to Emotional Exhaustion Through Work Engagement: The Multilevel Moderating Role of the Leader's Work Pressure**

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## **ABSTRACT**

This study focuses on public secondary schools to examine the extent to which leader-level job demands impact the relationship between employees' job resources, job demands, and well-being. Specifically, we investigate (1) how teachers' developmental rewards and expected contributions relate to their work engagement and emotional exhaustion and (2) the role of school principals' work pressure in this relationship. Building on recent developments in job demands-resources (JD-R) theory, we argue a leaders' work pressure can trickle down to the employee level. Hierarchical linear analyses reveal that principals' work pressure moderates the relationship between teachers' expected contributions and emotional exhaustion. We thus add to JD-R theory by suggesting that employee work outcomes are also shaped by job demands at the leader level. Policies aimed at

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improving employee well-being should therefore be based on a comprehensive image of the organization that also takes the leader's job demands into account.

## **KEYWORDS**

developmental rewards and expected contributions, emotional exhaustion, job demands-resources theory, multilevel, teaching profession

## **INTRODUCTION**

To become more cost-efficient and effective, public organizations have emulated private sector management practices (Groeneveld & Steijn, 2016). As a result, public employees are expected to conform to new demands regarding flexibility, accountability, and standardization of procedures (Diefenbach, 2009). Meanwhile, the resources of public employees are not increasing at the same speed (Knies et al., 2018). This study focuses on government-subsidized secondary schools. Teaching is a highly demanding profession, with broadening responsibilities and rising administrative burden (OECD, 2019). It seems that, like other public professions, teaching has become an unbalanced job that asks a lot of employees but offers very little in return (Audenaert et al., 2019; Borst & Knies, 2023; Steijn & Giauque, 2021). Such imbalances may negatively impact employees' well-being and performance (Diefenbach, 2009), which can in turn impact the functioning of public organizations (Bauwens et al., 2021) and thus the societal impact of these organizations.

Importantly, these challenges in the teaching profession do not only affect teachers. It has been known for years that the job of school principals is highly demanding (Collie et al., 2020). Principals face mounting work pressure (Beusaert et al., 2016; Klocko & Wells, 2015), with ever more difficulty in completing their work tasks, given time constraints and the high quantity of

work (OECD, 2019; Roe & Zijlstra, 2000). The combination of both teachers and principals facing high demands might be especially problematic, since principals may be pivotal in alleviating the job demands placed on teachers (OECD, 2019).

Integrating the above-mentioned challenges, this study has two objectives. First, we examine the relationship between teachers' job demands, job resources, and well-being, operationalized as emotional exhaustion. We address teachers' job demands and job resources by looking at their perceptions of two sets of human resources management (HRM) practices, as HRM has been shown to be valuable in shaping employee well-being (D. E. Guest, 2017; Peccei & Van De Voorde, 2019b). Developmental rewards are the first set of HRM practices and refer to nonmaterial inducements that promote personal development, provided by the organization in return for the employee's energy and effort (Jia et al., 2014). Expected contributions are the second set of HRM practices and refer to what employees are expected to bring to the job in terms of in-role and extra-role performance.

Second, we investigate the influence of the principal's work pressure on the teacher-level relationship between developmental rewards, expected contributions, and well-being. Although in public organizations job demands and job resources may seem relatively standardized, we follow Nishii and Wright (2008) in assuming that similar HRM practices are perceived differently by employees because they are implemented by different leaders. Whereas well-being research has traditionally focused on employee-level antecedents (Peccei & Van De Voorde, 2019a), there is an increasing acknowledgment that employee-level work outcomes are the function of factors at different levels in an organization, including the influence of the employees' leader (Bakker & Demerouti, 2018). It is thus essential to incorporate a multilevel perspective. Examining the role of leaders is specifically interesting, since leaders play a pivotal role in shaping employees' work

context (Schaufeli, 2015). Leaders are usually the people in charge of balancing employees' job demands and job resources and they function as role models for expected behaviors (Breevaart, 2020). Consequently, we aim to answer the following research questions: (1) How do developmental rewards and expected contributions relate to employee-level work engagement and emotional exhaustion? (2) To what extent is this relationship influenced by the work pressure of the leader? Our research model is illustrated in Figure 1.

[INSERT FIGURE 1 ABOUT HERE]

To answer our research questions, we use the job demands-resources (JD-R) model as a theoretical framework (Bakker & Demerouti, 2017; Demerouti et al., 2001). This model posits that employee-level work outcomes are the function of two sets of job characteristics, namely job demands and job resources (Bakker & Demerouti, 2018; Demerouti et al., 2001). Job demands are aspects of a job that cost mental or physical effort. If employees work under high demands for a sustained period, the demands may start to take a toll on employees' health and well-being. Job resources are aspects of a job that help employees to perform their job in an effective and fulfilling way. Job resources therefore have a positive impact on employee well-being.

This article aims to make at least two contributions to the literature. First, the current study focuses explicitly on the teaching profession. Scholars have underlined the need for further examination of the dynamics surrounding HRM practices and well-being in the public sector (Steijn & Giauque, 2021). Given the crucial role schools play in educating society's youngest members, teaching professionals who are able and motivated to do their job, are essential. As front-line workers (Maynard-Moody & Musheno, 2009), teachers are the personal enactors of the organization and are often the first to be blamed for organizational malfunctioning. Health and burnout issues among workers in the front lines of public service are prevalent, but empirical

investigation into the linkages between their work engagement and well-being is still scarce (Bauwens et al., 2021; Borst, 2018; Borst & Blom, 2021; Fletcher et al., 2020). This study aims to contribute to our understanding of the antecedents of teachers' well-being (for overview, see Bermejo-Toro et al., 2016), which can in turn be used to inform interventions aimed at supporting teachers, as well as other public employees. By studying developmental rewards and expected contributions, we will also contribute to the scarce research examining the role of the employment relationship in shaping the health-related well-being—of which emotional exhaustion is a part—of civil servants (Audenaert et al., 2019; Bauwens et al., 2021).

Our second contribution lies in using a multilevel framework to examine employee-level work outcomes. Including different hierarchical levels is important to capture the complex nature of modern-day organizations (Bakker & Demerouti, 2017) and advance our understanding of employee well-being. We focus on the work pressure experienced by the leader to examine the central role principals play in shaping teachers' work context. This adds to the growing literature regarding the interplay between HRM and leader behaviors, also known as people management (Purcell & Hutchinson, 2007). Examination of this interplay has mostly taken place in private sector contexts (Knies et al., 2022), but the differing role of HRM practices in the public and private sector (Knies et al., 2018), as well as the specific job characteristics of public leaders (Knies et al., 2022), justify further investigation into public sector contexts specifically. By incorporating the leader level within the JD-R framework, we aim to clarify to what extent leader-level variables buffer or heighten the relationship between employees' job demands, job resources, and well-being (Bakker & Demerouti, 2018). We thereby contribute to recent calls for the integration of multiple levels within JD-R theory specifically (Bakker, 2015; Bakker & Demerouti, 2017, 2018; Xanthopoulou & Bakker, 2021) and HRM research in general (Shen, 2016).

## **THEORETICAL FRAMEWORK AND HYPOTHESES**

### **Employee-Level Job Demands, Job Resources, and Emotional Exhaustion**

To capture the demanding work context of teachers, we focus on two specific sets of HRM practices, namely developmental rewards and expected contributions. Developmental rewards are a typical job resource (Audenaert et al., 2019; Bauwens et al., 2021) and refer to non-material inducements, such as opportunities for training, coaching, career development, and participation (Jia et al., 2014). In offering developmental rewards, employers signal to employees that they are willing to invest in a long-term relationship. In addition, this study looks at expected contributions as a typical job demand. Expected contributions consist of both in-role expectations, such as the quality of job performance, and extra-role requirements expected of employees, such as innovative behavior and initiative taking (Audenaert et al., 2018; Jia et al., 2014). These expected contributions can be both explicit and implicit for employees.

These sets of practices were selected because bundles of HRM practices have a greater impact on employee functioning than do individual practices (D. Guest et al., 2004). To examine the effect of HRM in an organization, one should look at bundles that combine several practices, which can reinforce, substitute, or even counteract each other (Wright & Boswell, 2002), rather than focus on single practices. Although there is ongoing debate in HRM research regarding exactly which practices constitute a bundle (Wright & Boswell, 2002), developmental rewards and expected contributions are both considered theoretically sound HRM bundles that build on the inducement-contribution model of March and Simon (1958; Tsui et al., 1997). They have both been used in HRM research (e.g., Audenaert et al., 2017; Jia et al., 2014), and are furthermore of importance because of the conceptual linkage of developmental rewards and expected

contributions with job resources and job demands in the JD-R model (see for instance Bauwens et al., 2021), which we use to develop our theoretical reasoning.

According to the JD-R model, employees' work outcomes (e.g., well-being and performance) are determined by two types of job characteristics (Bakker & Demerouti, 2018). First, job demands are "physical, social, or organizational aspects of the job that require sustained physical or mental effort" (Demerouti et al., 2001, p. 501), thus causing strain. Examples are work pressure or conflicts at work. Second, job resources are the aspects of a job that help employees achieve work goals, deal with job demands or stimulate personal development (Demerouti et al., 2001). Examples include autonomy and supervisory support. Bakker and Demerouti (2018) theorize that job demands and job resources instigate different processes with differing outcomes. Job demands are the general predictors of a health impairment process. They cost mental and physical effort and therefore consume energy (Bakker et al., 2014). If this energy draining process is sustained for a long period and becomes chronic, it may increase employees' exhaustion and can lead to mental and physical health problems, especially when the high job demands are combined with little job resources (Bakker & Demerouti, 2018; Hakanen et al., 2008). Emotional exhaustion refers to a state of being physically and emotionally depleted of resources because of chronic stress (Maslach et al., 2001). Emotional exhaustion is one of the three dimensions of burnout and among the dimensions, it has been argued to predict burnout most significantly and consistently (Bakker et al., 2001; Knudsen et al., 2009; Maslach et al., 2001). In contrast, job resources can trigger a motivational process. Job resources facilitate personal development and help employees achieve work goals, which increases employees' work motivation (Bakker & Demerouti, 2018).



Most research grounded in the JD-R model has been conducted from a single-level perspective, in which the employee is the central focus (Bakker & Demerouti, 2017, 2018). However, there is an increasing interest in the HRM literature in the role of actors at various levels (Shen, 2016), given that individual employees do not usually operate in a vacuum, but are often embedded within teams and organizations under the direction of leaders. Employee-level work outcomes are thus the function of factors located within different hierarchical levels (Bakker & Demerouti, 2018). Empirical investigation into a multilevel JD-R model is still relatively scarce, but several studies already suggest the important role of job demands and job resources at higher levels (for an overview, see Bakker & Demerouti, 2018).

In this study, we use both the original formulation of the JD-R model (Demerouti et al., 2001), as well as recent extensions to and refinements of the model to build our hypotheses. First, we build on studies that extend the original JD-R model by providing support for a direct link between job resources and strain (Schaufeli et al., 2009; Van Ruysseveldt et al., 2011). Since job resources provide employees with opportunities for personal development and growth, they help employees deal with stressful conditions more effectively and at a lower psychological cost (Van Ruysseveldt et al., 2011). Following this reasoning, we expect that as a type of job resource, developmental rewards will relate negatively to emotional exhaustion. In contrast, in line with the JD-R model's proposed health impairment process, we expect that as a type of job demand, expected contributions will cause strain and relate positively to emotional exhaustion (Bakker & Demerouti, 2018). Thus,

*Hypothesis 1a:* Developmental rewards are negatively related to emotional exhaustion.

*Hypothesis 1b:* Expected contributions are positively related to emotional exhaustion.

### **The Mediating Role of Work Engagement**

We examine work engagement as a mediator in the relationship between developmental rewards and expected contributions on the one hand and emotional exhaustion on the other hand. Work engagement is a central component of the JD-R model (Bakker & Demerouti, 2017) and can be defined as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli & Bakker, 2004, p. 295). Engaged employees are full of energy, are enthusiastic about their work, and feel like time is flying by (Xanthopoulou & Bakker, 2021). The relationship between job resources—in this study developmental rewards—and work engagement has received considerable support. Ever since the first formulations of the JD-R model, job resources are considered to be the most important antecedents of work engagement (Crawford et al., 2010). Job resources enable employees to take ownership of their work, find meaning in their work and feel autonomously motivated (Crawford et al., 2010; Xanthopoulou & Bakker, 2021). In turn, we extend the original formulation of the JD-R model (Demerouti et al., 2001) and expect work engagement to foster employee well-being and to minimize feelings of emotional exhaustion. Research has indeed shown that engaged employees are generally more active, enthusiastic, and inspired (Bakker et al., 2014). These positive emotions enable them to think of new ideas in their job and build their job resources. Furthermore, engaged employees are believed to have more energy, which they can devote towards their job (Bakker, 2009; Bakker et al., 2014). Given this increased positivity and energy (Bakker, 2009; Schaufeli & Van Rhenen, 2006), we hypothesize that work engagement reduces feelings of emotional exhaustion. Therefore, work engagement should mediate the relationship between developmental rewards and emotional exhaustion.

However, the literature linking job demands—in this study expected contributions—to work engagement has been less unanimous. A direct link between job demands and work engagement was not envisioned in the original JD-R model (Demerouti et al., 2001), and has been argued against by some authors (e.g., Schaufeli & Bakker, 2004). However, recent refinements of the JD-R model provide support for such a linkage when job demands are specified in terms of the type of demand (Crawford et al., 2010, Tadić et al., 2015; Tuckey et al., 2012). Bakker and Demerouti (2018) recognize the linkage between job demands and engagement as follows: “we have found that engaged individuals perform better on demanding tasks because they focus all their attention to the task” (Bakker & Demerouti, 2018, p. 3). In the current study, we build on these evolutions of the JD-R model and assume that when taking into account the double-faced nature of job demands, a linkage of expected contributions with work engagement is to be expected.

Even though all demands cost mental effort, they can be appraised in varying ways and consequently differ in the kind of psychological response they evoke (Crawford et al., 2010). In particular, job demands can be divided into challenge demands and hindrance demands (Bakker & Demerouti, 2018). Challenge demands, such as complexity or high responsibility, foster problem-solving behaviors and can help employees perform well because of the motivational process that follows from them (Crawford et al., 2010). These demands are appraised as being attainable or meaningful, which motivates employees to look for ways to meet the demands and triggers a sense of accomplishment. This results in increased work engagement, as was supported in a meta-analysis by Crawford et al. (2010). Hindrance demands, such as conflict or organizational politics, trigger negative emotional responses and impede employee functioning. These job demands, which employees appraise as harmful, hinder goal achievement, reduce

employee motivation, and result in a passive and disengaged way of coping. Research indeed confirms that hindrance demands relate negatively to work engagement (Crawford et al., 2010, Tadić et al., 2015). Thus, when the job demand concerns a hindrance demand, negative relationships with work engagement can be found.

The focus of this study is on the work context of teachers, which is becoming increasingly complex and varied (OECD, 2019). Among other things, teachers are expected to take on a growing number of tasks, such as facilitating the development of children with special needs, integrating pupils from different cultural backgrounds, and staying connected with the local community. While increasing demands are not necessarily hindering, the magnitude and diversity of the tasks expected of teachers might lead to feelings of confusion and uncertainty regarding what is and what is not part of their job. This kind of ambiguity can be categorized as a hindrance demand (Crawford et al., 2010). We therefore assume that the expected contributions teachers experience function as a hindrance demand and relate negatively to work engagement. After all, hindrance demands evoke negative emotions and feelings of being unable to effectively deal with the demands, resulting in passive and disengaged behavior (Crawford et al., 2010). As discussed above, work engagement is in turn related to the well-being (e.g., emotional exhaustion) of employees (Bakker et al., 2014; Crawford et al., 2010; Xanthopoulou & Bakker, 2021). Thus,

*Hypothesis 2a:* The negative relationship between developmental rewards and emotional exhaustion is mediated by work engagement.

*Hypothesis 2b:* The positive relationship between expected contributions and emotional exhaustion is mediated by work engagement.

### **The Cross-Level Moderating Role of the Leader's Work Pressure**

Much of the literature on employee well-being is conducted at a single level and based solely on employees' self-reported job characteristics and work outcomes (Bakker & Demerouti, 2018). However, there is increasing acknowledgment that factors at team, organizational, and leader level may also shape job characteristics in important ways (Shen, 2016). The role of leaders is especially interesting for several reasons (Schaufeli, 2015). First, leaders are supposed to assign their followers' job demands and job resources in a balanced manner, so that followers remain happy and productive (Schaufeli, 2015). An optimal work context is one where employees have access to ample resources and face limited demands (Breevaart, 2020). Second, leaders can behave in ways that motivate or obstruct employee functioning (Breevaart, 2020). For example, a leader, who in their behavior portrays dedication and enthusiasm for their work, can serve as a positive role model for followers, while a leader who displays exhaustion and cynicism regarding their work can negatively influence follower functioning. Third, leaders are a crucial source of social support. They are important social actors in an employee's work context and the interactions between them and their employees can be either positive or detrimental to employee work outcomes (Breevaart, 2020).

The current study examines the leader's work pressure as moderating the relationship between developmental rewards, expected contributions, and work engagement. Work pressure—a typical job demand—can be understood as a feeling of strain or tension that results from an anticipated inability to complete work tasks (Roe & Zijlstra, 2000). This inability can be the result of, among other factors, time constraints, lack of skills, or lack of support. In the case of school principals, high work pressure thus refers to a state in which a principal has serious concerns about their ability to complete their work tasks and experiences feelings of strain because of it.

We assume that job demands are not necessarily contained to a single level but can spread to other levels as well. We hereby build on the suggestion that “resource availability at the collective level of analysis boosts the positive relationship between resources and work engagement at the individual level of analysis” (Xanthopoulou & Bakker, 2021, p. 46). Extending this reasoning, we expect that the presence of demands at the collective level impacts the relationship between job demands, job resources, and work engagement at the individual level. Specifically, we propose that a job demand at the leader level, such as work pressure, can trickle down to the employee level. Our reasoning draws on crossover literature, which assumes that one person’s psychological states can influence the experience of similar psychological states in another person within the same social system (Bakker et al., 2006; Wirtz et al., 2017). More specifically, in a social system such as a work environment, people make a cognitive effort to understand the psychological states of others (Wirtz et al., 2017). They do so by reflecting on how they would feel if they were in the position of the other person (Bakker et al., 2006). This process of “tuning in” to the psychological states of others triggers memories of times when one has experienced a similar feeling and in turn evokes the associated psychological state (Bakker et al., 2006). Research has shown that straining psychological states like emotional exhaustion and cynicism can in this way be contagious (Bakker et al., 2006; Bakker & Schaufeli, 2000).

In line with the definition above, work pressure is a straining psychological state that can be categorized as a job demand. Given that leaders are central social actors in employees’ work environment (Breevaart, 2020), we expect that the straining psychological state of a leader with high work pressure can cross over to the employee and cause a congruent straining psychological state in the employee. This straining state can in turn negatively buffer the positive relationship of employees’ developmental rewards—as a type of job resource—with work engagement. Thus,

*Hypothesis 3a:* The positive relationship between developmental rewards and work engagement is moderated by the leader's work pressure, such that this relationship becomes weaker when the leader's work pressure is high (versus low).

*Hypothesis 3b:* The relationship between developmental rewards and emotional exhaustion via work engagement is moderated by the leader's work pressure, such that the mediated relationship becomes weaker when the leader's work pressure is high (versus low).

With regards to expected contributions, we expect the strain that employees will experience because of their leaders' psychological state (i.e., strain) to exacerbate the already negative relationship of expected contributions—as a type of job demand—with work engagement. Thus,

*Hypothesis 4a:* The negative relationship between expected contributions and work engagement is moderated by the leader's work pressure, such that this relationship becomes stronger when the leader's work pressure is high (versus low).

*Hypothesis 4b:* The relationship between expected contributions and emotional exhaustion via work engagement is moderated by the leader's work pressure, such that the mediated relationship becomes stronger when the leader's work pressure is high (versus low).

## **METHODOLOGY**

### **Sample**

Data was collected between November 2019 and January 2020 by administering paper-and-pencil surveys to government-subsidized secondary schools across Flanders, the Dutch-speaking part of Belgium. The vast majority of Flemish secondary education is government-subsidized (OECD, 2017). The data collection was part of a larger research project on HRM, leadership, and well-being in Flemish secondary schools. All surveys were handed over to the participating schools in

person and randomly distributed within the schools using sealed envelopes to protect respondents' anonymity. In total, 637 secondary schools were contacted and asked if they would like to participate in our study. Of these schools, 102 schools agreed to participate. After checking for missing data, we included the data of 91 school principals and 904 teachers. Teachers were on average 41 years old (SD 11), with 17 years of experience in the profession on average (SD 11). Males represented 32% of the sample. Since this study was conducted in a school context, teachers are the employees of interest and school principals are the leaders of interest.

### **Measures and Common Source Bias**

Where available, we used validated Dutch translations of measures. Measures for which no Dutch translation was available were translated using blind back-translation (Cascio, 2012). An overview of the items can be found in appendix A. All items were measured on a seven-point Likert scale (1 = totally disagree, 7 = totally agree or 1 = not at all, 7 = extremely often), except for the control variables gender, tenure, and number of teachers. Our main variables of interest—developmental rewards, expected contributions, work engagement, and emotional exhaustion—were measured at the teacher level. Work pressure was measured at the principal level. Factor analysis was carried out for all the variables in the model and items that loaded with values below the 0.40 cut-off point (Osborne et al., 2008) were deleted from the scales. See the description of measures below.

*Developmental Rewards* We used 10 items by Jia et al. (2014) to measure perceived developmental rewards at the teacher level. We additionally asked school principals to report on teachers' developmental rewards to use these scores as a control variable (see the section on control variables below for more information). Items were reworded slightly to fit the school context. Example items included: “My school creates opportunities for teachers to show their talents” and “My school emphasizes teachers' career development”. Alpha was 0.92.



*Expected Contributions* We used 14 items by Jia et al. (2014) to measure perceived expected contributions at the teacher level. We additionally asked school principals to report on teachers' expected contributions to use these scores as a control variable (see the section on control variables below for more information). Items were reworded slightly to fit the school context. One item was split in two to allow respondents to rate quality and quantity separately. The two resulting items were: "Our school expects teachers to complete performance goals in quality" and "Our school expects teachers to complete performance goals in quantity". Other example items included: "Our school expects teachers to fulfill the job inside and out" and "Our school expects teachers to take initiative to carry out new or challenging assignments". Alpha was 0.92.

*Work Pressure* To measure work pressure at the principal level, we used six items by Demerouti et al. (2009). Example items included: "To what extent does your job require you to work hard?" and "To what extent is there an excessive amount of work in your job?". Alpha was 0.77.

*Work Engagement* To measure work engagement at the teacher level, we used the short version of the Utrecht Work Engagement Scale (Schaufeli et al., 2019), which consists of three items. An example item included: "At my work, I feel bursting with energy". Alpha was 0.81.

*Emotional Exhaustion* Emotional exhaustion at the teacher level was measured using eight items from the Utrecht Burnout Scale (Schaufeli & Van Dierendonck, 2000). Example items included: "I feel mentally exhausted by my work" and "I feel tired when I get up in the morning and there is another working day ahead of me". Alpha was 0.88.

*Control Variables* We controlled for variables that could possibly cause spurious findings in the employee-level relationship between the two sets of HRM practices and work engagement

and emotional exhaustion. At the teacher level, we controlled for psychological empowerment, since research has highlighted the central role of psychological empowerment in the relationship between developmental rewards, expected contributions and emotional exhaustion (Audenaert et al., 2017). To measure psychological empowerment, we used the 12-item scale by Spreitzer (1995). The factor analysis of this scale returned two items (“I am confident about my ability to do my job” and “I have mastered the skills necessary for my job”) with values lower than the 0.40 cut-off (0.39 and 0.33 respectively), so these items were removed from the scale. Alpha for both the full scale and the scale without the two items was 0.84. We also controlled for gender (0 = male and 1 = female) and tenure (in years), since these variables are seen as important control variables when studying emotional exhaustion (Bernerth & Aguinis, 2016).

At the principal level, we controlled for the number of teachers that each principal has under their supervision, since this is indicative of a principal’s span of control over teachers’ job demands and job resources. Additionally, since our hypotheses presuppose that it is the teachers’ perceptions of HRM practices that relates to their work engagement and emotional exhaustion, rather than the principal’s implementation of HRM practices (see distinction between implemented and perceived HRM, e.g., Nishii & Wright, 2008), we also controlled for the implemented developmental rewards and implemented expected contributions that teachers face according to the school principal. To do so, we again used the 10- and 14-item scales of Jia et al. (2014) to measure developmental rewards and expected contributions, respectively.

*Common Source Bias* Given the fact that our teacher-level data is single-source, albeit time-lagged data, we took several precautions to mitigate the potential effects of common source bias (CSB), as prescribed by George and Pandey (2017). Firstly, in line with recommendations by Podsakoff et al. (2012), we ensured psychological separation by dividing the measurement

instruments into several distinct chapters. We also mitigated social desirability by emphasizing respondents' anonymity and we reworded items slightly to fit the teacher context and avoid ambiguity (Podsakoff et al., 2012). Additionally, we performed Harman's one-factor test, which revealed that CSB is unlikely to be an issue for our teacher-level data, since the one-factor model only accounted for 21% of the model variance, which is below the 50% threshold (Podsakoff & Organ, 1986). Furthermore, calculation of the difference between the standardized regression weights of a common latent factor model and the measurement model revealed no problematic values ( $>0.20$ ; Cohen, 1988), which also indicates the absence of CSB. With regards to our cross-level interaction, CSB is not a concern since this type of moderation is not susceptible to CSB (George & Pandey, 2017).

## **ANALYSES**

Our analyses were conducted using hierarchical linear modeling in HLM 8. The estimation method we used was full maximum likelihood, which is suited to multilevel regression analyses (Hox et al., 2017). To indicate the fit of the models, we report deviance, whereby a lower deviance value indicates a better fit of the model (Hox et al., 2017). Furthermore, we also calculated pseudo R<sup>2</sup> for all models (Snijders & Bosker, 1994). Because the measures used for our variables lack a meaningful zero value, centering of the variables is used to establish a zero point (Enders & Tofghi, 2007). Group mean centering was decided to be most appropriate (Enders & Tofghi, 2007; Hofmann & Gavin, 1998).

To conduct our analyses, we followed the method proposed by Muller et al. (2005). This method allows us to test our hypotheses, while also exploring potential non-hypothesized relationships in our model. To test the hypothesized mediation effects, we additionally used the Monte Carlo method (Selig & Preacher, 2008) to generate 95% confidence intervals. Given the

power issues and the risk of type II errors that cross-level interactions tend to be exposed to (Aguinis et al., 2013; González-Romá & Hernández, 2022; Mathieu et al., 2012), we apply a 0.10 significance level to all of our findings. Accordingly, Mathieu et al. (2012) argue that in investigating cross-level interactions in more nascent research topic areas, such as our cross-level interaction with a demand located at the leader level, it is reasonable to use more liberal significance levels.

## **Results**

We tested the following assumptions, based on recommendations by Muller et al. (2005): (1a) Developmental rewards is significantly related to emotional exhaustion and this effect is not dependent on the moderator; (1b) Expected contributions is significantly related to emotional exhaustion and this effect is not dependent on the moderator; (2) These relationships are mediated by work engagement; (3a) The relationship between developmental rewards and work engagement is moderated by the leader's work pressure; (3b) The relationship between expected contributions and work engagement is moderated by the leader's work pressure; (4a) The mediated relationship between developmental rewards and emotional exhaustion via work engagement is moderated by the leader's work pressure; and (4b) The mediated relationship between expected contributions and emotional exhaustion via work engagement is moderated by the leader's work pressure. Table 1 presents the descriptive statistics at the employee level and the leader level.

[INSERT TABLE 1 AROUND HERE]

## **Predictors of Emotional Exhaustion**

In line with Muller et al. (2005) we first tested whether developmental rewards and expected contributions are significantly related to emotional exhaustion (see Table 2). We checked whether hierarchical linear modeling is suitable for our data. Our intercept-only model shows that

hierarchical linear modeling is indeed appropriate, since there is significant between-group variance for emotional exhaustion ( $ICC(1) = 0.05$ ). Next, we tested our model with only level-1 and level-2 control variables. As shown in model 2, psychological empowerment is significantly related to emotional exhaustion ( $\beta = -0.49, p < 0.001$ ). We then added developmental rewards and expected contributions in model 3 to test our first hypotheses. Developmental rewards are negatively related to emotional exhaustion ( $\beta = -0.24, p < 0.001$ ), which supports hypothesis 1a. There is no support for hypothesis 1b, since expected contributions are not significantly related to emotional exhaustion ( $\beta = 0.09, p > 0.10$ ).

[INSERT TABLE 2 AROUND HERE]

Following recommendations (Muller et al., 2005), we subsequently estimated the non-hypothesized interaction of the principal's work pressure on the relationship between developmental rewards and expected contributions on the one hand and emotional exhaustion on the other hand. Model 4 shows that the effect of expected contributions on emotional exhaustion is moderated by the work pressure of the leader ( $\beta = -0.20, p < 0.05$ ). To enable further interpretation of this moderation, we plotted the interaction. Figure 2 shows that the relationship between expected contributions and emotional exhaustion is stronger when the leader's work pressure is low (compared to when it is high). This finding is somewhat counter-intuitive, since one could expect that a leader with high work pressure might make an already demanding work context feel even more demanding, thereby increasing emotional exhaustion. No such interaction was found for developmental rewards ( $\beta = 0.05, p > 0.10$ ).

[INSERT FIGURE 2 ABOUT HERE]

### Mediation Tests

The second condition in the method of Muller et al. (2005) is that the relationship between developmental rewards and expected contributions on the one hand and emotional exhaustion on the other hand is mediated by work engagement. Table 3 shows the results for this condition. We first tested whether developmental rewards and expected contributions are related to work engagement. Model 1 presents the intercept-only model for work engagement, which shows significant between-group variance ( $ICC(1) = 0.03$ ). While this is a rather low ICC value, we nonetheless justify the use of multilevel modeling. ICC(1) values for variables around mental well-being and strain are often smaller than 0.05 (Bliese et al., 2018). Given the clear nested structure of our data and research showing that even (very) low ICC values warrant multilevel analyses (Bliese et al., 2018), we deem our approach as appropriate. Of the teacher-level control variables we added in model 2, psychological empowerment ( $\beta = 0.59, p < 0.001$ ) and gender ( $\beta = 0.15, p < 0.01$ ) are significantly related to work engagement. We then added the predictors in model 3. The results indicate that developmental rewards are positively associated with work engagement ( $\beta = 0.010, p < 0.05$ ). Expected contributions are marginally associated with work engagement ( $\beta = 0.07, p < 0.10$ ).

[INSERT TABLE 3 AROUND HERE]

For the next step in testing the second condition, we added work engagement as a mediator to the relationships between developmental rewards and expected contributions on the one hand and emotional exhaustion on the other hand. The coefficients for developmental rewards ( $\beta = -0.23, p < 0.001$ ) and expected contributions ( $\beta = 0.19, p < 0.05$ ) remained significant after adding work engagement into the model, which suggests a partial mediation of work engagement. To check the significance of these indirect effects, we used the Monte Carlo method (Selig &

Preacher, 2008). For developmental rewards, the indirect effect via work engagement on emotional exhaustion is indeed significant (95% CIs [-0.07, -0.01]). This provides support for hypothesis 2a. For expected contributions, the indirect effect via work engagement on emotional exhaustion is not significant (95% CIs [-0.06, 0.00]), so our data did not support hypothesis 2b.

### **Moderation Tests**

The third condition requires the effect of developmental rewards and expected contributions on work engagement to be moderated by the leader's work pressure. Model 4 in Table 3 shows no effect of the leader's work pressure on the relationship between developmental rewards and work engagement ( $\beta = 0.04$ ,  $p > 0.10$ ), so hypothesis 3a is not supported. On the other hand, the relationship between expected contributions and work engagement is indeed moderated by the work pressure of the leader at a 0.10 significance level ( $\beta = 0.08$ ,  $p < 0.10$ ). To further examine this moderation, we plot the interaction (Hox et al., 2017). Figure 3 shows that the leader's work pressure moderates the relationship between employees' expected contributions and work engagement, in such a way that the relationship is stronger when the work pressure of the leader is high versus low. Thus, the moderation proposed in hypothesis 4a is supported.

[INSERT FIGURE 3 ABOUT HERE]

### **Moderated Mediation Tests**

The last condition proposed by Muller et al. (2005) entails combining the previous steps in a single model to test whether a mediated relationship is moderated. However, since we found no mediation of work engagement between expected contributions and emotional exhaustion earlier there is no need to take this final step. Indeed, bootstrapped confidence intervals to test for mediation (Selig & Preacher, 2008) show that there is no mediation via work engagement, even after adding the

principal's work pressure in the model (95% CIs [-0.04, 0.02]). Thus, hypothesis 3b is not supported by our results.

However, as we did find above that the relationship between developmental rewards and emotional exhaustion is mediated by work engagement, we tested for moderated mediation in this relationship. To do so, we computed 95 percent confidence intervals using the Monte Carlo method (Selig & Preacher, 2008). The bootstrapping shows that work engagement mediates the relationship between developmental rewards and emotional exhaustion, even when adding the principal's work pressure in the model (95% CIs [-0.06, -0.00]). However, model 5 in Table 2 shows that this mediated relationship is not moderated by the principal's work pressure. Thus, hypothesis 4b is partially supported.

## **DISCUSSION**

In this study, we examined to what extent two sets of HRM practices, developmental rewards and expected contributions, relate to teachers' well-being. We built on the JD-R model (Bakker & Demerouti, 2017, 2018) to examine whether developmental rewards and expected contributions are related to emotional exhaustion via work engagement. Additionally, we studied if this relationship is moderated by the principal's work pressure. We thereby highlighted the joint importance of the leader and HRM practices for employee well-being. The results suggest that there are two different processes at play. As a specific set of job resources, developmental rewards are positively related to work engagement and negatively related to emotional exhaustion. Moreover, work engagement mediates the relationship between developmental rewards and emotional exhaustion. As a specific set of job demands, expected contributions appear to interact with the level of the leader's work pressure at a 0.10 significance level. The relationship between



expected contributions and work engagement is moderated by the leader's work pressure, as is the relationship between expected contributions and emotional exhaustion.

### **Theoretical Implications**

This study contributes to existing literature in at least two ways. First, this study responds to the call for further examination of the mechanisms surrounding employees' health-related well-being in the public sector (Steijn & Giauque, 2021), an area still very much in development (Borst & Blom, 2021). Most well-being outcomes studied in public HRM research focus on happiness-related well-being concepts, such as job satisfaction and motivation. Much less attention has been paid to indicators of health-related well-being, such as emotional exhaustion. More attention to this topic is especially important in the public sector context, given the high levels of strain public employees face in their work (Borst & Knies, 2023). As workers in the front-lines of public service, teachers work in a highly taxing context with varying and diverse demands (OECD, 2019). Our results suggest that offering teachers opportunities for training and participation relates positively to the degree they are engaged in their jobs, which in turn is negatively related to the degree to which teachers are emotionally exhausted by their job. This finding sheds further light on the process in which a set of HRM practices relates to public employees' emotional exhaustion, deepening our understanding of antecedents to public employees' health-related well-being. This finding is also interesting given the scarce support for the link between work engagement and public employees' well-being (Borst, 2018; Fletcher et al., 2020), especially in light of the prevalent burnout and health issues for front-line workers such as teachers (Borst & Knies, 2023). Existing research on work engagement in the public sector largely focuses on the effects of individual job demands (e.g., Borst, 2018), whereas this study takes a more encompassing approach by looking at the relationship between employees' perceptions of the range of behaviors

that are expected of them in their job (Borst & Knies, 2023). This is particularly interesting in the public sector, where workers are confronted with a multitude of job demands.

In addition to contributing to our understanding of employee well-being in the public sector, this study also highlights the relevance of considering multilevel antecedents to employee work engagement and emotional exhaustion. In line with recent calls for the integration of multiple levels in JD-R research (Bakker & Demerouti, 2017, 2018; Xanthopoulou & Bakker, 2021), we considered the influence a leader's job demand in terms of work pressure has on employee work outcomes. Research has indicated that leadership style can be an important moderator that influences how and to what extent job resources relate to work engagement (Tuckey et al., 2012; Xanthopoulou & Bakker, 2021; Zhang et al., 2017). Relatedly, the positive relationship between job resources and work engagement on the employee level has been shown to be strongest when personal resources (like optimism and hope) at the leader level are high (Tuckey et al., 2012; Zhang et al., 2017). Our study builds on this work by showing that the relationship of expected contributions to both work engagement and emotional exhaustion is moderated by the leader's work pressure at a 0.10 significance level. The current finding thus suggests that it is not only the personal resources of leaders or their leadership style that have a multilevel influence on the relationship between job resources and work engagement, but that leaders' job demands in terms of work pressure also seem to impact the relationship between employees' job demands, job resources and well-being. This is an important insight, given the increasing contributions expected of public sector workers (Hammerschmid et al., 2019). We additionally contributed to advancing a multilevel understanding of HRM in general (Shen, 2016) and to the development of a multilevel JD-R model more specifically (Bakker, 2015; Bakker & Demerouti, 2017, 2018; Xanthopoulou & Bakker, 2021).

As hypothesized, we found that the leader's work pressure moderates the relationship between expected contributions and work engagement, such that the relationship is stronger when the leader's work pressure is high versus low. Similarly, we expected that the leader's work pressure would strengthen the relationship between expected contributions and emotional exhaustion. We reasoned that greater leader work pressure would increase employees' emotional exhaustion through a cross over process in which employees experience strain because of their leaders' psychological state (i.e., strain). However, we found that the relationship between employees' expected contributions and emotional exhaustion is stronger when the leader's work pressure is low versus high. We suggest that this intriguing finding might result from the different ways in which employees can experience job demands. Although both challenge and hindrance demands deplete energy (Tadić et al., 2015), challenge demands may also provide offsetting resources. Whether this is the case may depend on the work pressure experienced by the leader. For example, a leader with less time and more work may become more likely to empower employees, hold them responsible for their results or delegate tasks to them. The resulting increase in autonomy, control, and responsibility experienced by the employee may make them perceive their expected contributions more as a challenge demand (Kühnel et al., 2012; Tuckey et al., 2012), and thereby reduce the effect of expected contributions on emotional exhaustion.

Another way in which the leader's work pressure might affect employee well-being is through employees' perceptions of fairness. In evaluating whether job demands are fair, employees will tend to compare themselves to others to see whether they are experiencing equally high job demands. Employees may compare their situation not only to that of peers, but also to their leader. If the leader is seen as facing as high or higher job demands, the employee is less likely to perceive their own situation as distributively unjust. However, if the leader is seen as experiencing lower

job demands than an employee, that employee may see the situation as less distributively fair. Therefore, higher work pressures of leaders, if evident to employees, may increase employee distributive justice perceptions. Given the established relation between distributive justice perceptions and burnout (Robbins et al., 2012), this might provide an alternative explanation of why leader work pressure attenuates the effect of employee job demands on emotional exhaustion.

In conclusion, the empirical results of this study suggest that employee well-being is not just a function of factors located at the employee level. We show that a demand located at the leader level can also shape the extent to which an employee-level demand relates to employees' well-being. Our examination of the interaction between a leader-level variable with an employee-level relationship thus underlines the important role principals play in shaping teachers' job demands and job resources. Relatedly, our findings add to the people management domain, which investigates the interplay of HRM and the leader in shaping employee outcomes (Purcell & Hutchinson, 2007). Research in this field has mostly been conducted in the private sector (Knies et al., 2022), but our findings show how a prevalent public sector demand, for example, work pressure, at the leader level interacts with employees' perceptions of two sets of HRM practices, indicating the relevance of studying the combination of HRM and leadership in the public sector as well.

### **Practical Implications**

The empirical results of the current study have several practical implications for public leaders and policy makers. First, in studying emotional exhaustion—the most consistent predictor of burnout (Bakker et al., 2001; Knudsen et al., 2009; Maslach et al., 2001)—we found that developmental rewards are negatively related to emotional exhaustion via work engagement. It might therefore be fruitful for public leaders and policymakers to focus on providing employees with opportunities

for professional development, including training, coaching, and participation in decision-making (Jia et al., 2014). Second, the results of our study show that in trying to improve public employees' well-being, policymakers should also take the leader's job demands into consideration, given our findings regarding the moderating effect of leaders' work pressure on the employee-level relationship between expected contributions, work engagement and emotional exhaustion. There might be additional job demands or job resources at the level of the leader that influence employee-level well-being. Policies aimed at improving employees' well-being should therefore consider a comprehensive image of the organization that considers the spillover effect of job demands and job resources located at different hierarchical levels.

### **Limitations and Directions for Future Research**

Despite its contributions, the present study is not without limitations. As this study is based on cross-sectional data collected at a single point in time, it is not possible to draw causal relationships from our data. Although there is support in the JD-R model (Bakker & Demerouti, 2017) for the proposed linkages, we cannot be certain that developmental rewards and expected contributions affect work engagement, which in turn affects emotional exhaustion. Relatedly, our employee-level findings are based on single-source data, which makes them susceptible to common source bias. To mitigate the potential issues resulting from common source bias, we took several procedural precautions in line with recommendations by George and Pandey (2017) and Podsakoff et al. (2012). Furthermore, post-hoc statistical tests indicated that common source bias is unlikely to be an issue for our data. Importantly, with regards to our cross-level interaction with a leader-level variable, we expect common source bias to not be an issue, since these types of interactions are not susceptible to common source bias (George & Pandey, 2017). However, it would be valuable for future research to test our hypotheses with longitudinal or multimethod data.

Second, the current research examined a single leader-level job demand, namely work pressure. Notwithstanding the substantial work pressure that principals face, they also must cope with several other job demands. Future research could examine the roles other principal-level job demands play in teachers' well-being. Given the surprising buffering role we found for work pressure, further research should investigate whether other leader-level job demands function as challenge demands or hindrance demands and thereby buffer or exacerbate effects on the employee level.

Third, this study suggests that the trickle-down effect of leaders' work pressure on employees' work context may be a result of a crossover process. However, such a cross-level interaction of job demands at the leader level with job demands and job resources at the employee level is likely part of a complex mechanism, which future research should investigate in greater depth.

### **Conclusion**

In summary, our study examines the relationship of public employees' job demands and job resources with their work engagement and emotional exhaustion. We build on JD-R theory and focus on developmental rewards and expected contributions as two sets of HRM practices. The current study extends existing research by incorporating the moderating effect of the leader's work pressure, showing that public employees' work outcomes are shaped by job demands at the level of the leader. Together, these findings suggest that future research might benefit from further integrating job demands at the leader level in studying employee-level job demands, job resources, and work outcomes.

## **DATA AVAILABILITY STATEMENT**

Due to the nature of the data and the conditions of the data collection process, the data used in this study is not open to the public. Restricted access to the data would require a specific arrangement with the authors.

## **DECLARATION OF CONFLICTING INTERESTS**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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## **REFERENCES**

- Aguinis, H., Gottfredson, R. K., & Culpepper, S. A. (2013). Best-practice recommendations for estimating cross-level interaction effects using multilevel modeling. *Journal of Management*, 39(6), 1490–1528. <https://doi.org/10.1177/1094428112470848>
- Audenaert, M., Carette, P., Shore, L. M., Lange, T., Van Waeyenberg, T., & Decramer, A. (2018). Leader-employee congruence of expected contributions in the employee-organization relationship. *The Leadership Quarterly*, 29(3), 414–422. <https://doi.org/10.1016/j.leaqua.2017.09.003>
- Audenaert, M., George, B., & Decramer, A. (2019). How a demanding employment relationship relates to affective commitment in public organizations: A multilevel analysis. *Public Administration*, 97(1), 11–27. <https://doi.org/10.1111/padm.12378>

- Audenaert, M., Vanderstraeten, A., & Buyens, D. (2017). When affective well-being is empowered: The joint role of leader-member exchange and the employment relationship. *International Journal of Human Resource Management*, 28(15), 2208–2227.  
<https://doi.org/10.1080/09585192.2015.1137610>
- Bakker, A. B. (2009). Building engagement in the workplace. In R. J. Burke & C. L. Cooper (Eds.), *The peak performing organization* (pp. 50–72). Routledge.
- Bakker, A. B. (2015). Towards a multilevel approach of employee well-being. *European Journal of Work and Organizational Psychology*, 24(6), 839–843.  
<https://doi.org/10.1080/1359432X.2015.1071423>
- Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273–285.  
<https://doi.org/10.1037/ocp0000056>
- Bakker, A. B., & Demerouti, E. (2018). Multiple levels in job demands—resources theory : Implications for employee well-being and performance. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of well-being* (pp. 1–13). DEF Publishers.
- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD–R approach. *Annual Review of Organizational Psychology and Organizational Behavior*, 1, 389–411. <https://doi.org/10.1146/annurev-orgpsych-031413-091235>
- Bakker, A. B., Emmerik, H. V., & Euwema, M. C. (2006). Crossover of burnout and engagement in work teams. *Work and Occupations*, 33(4), 464–489.  
<https://doi.org/10.1177/0730888406291310>



- Bakker, A. B., & Schaufeli, W. B. (2000). Burnout contagion processes among teachers. *Journal of Applied Social Psychology, 30*(11), 2289–2308. <https://doi.org/10.1111/j.1559-1816.2000.tb02437.x>
- Bakker, A. B., Schaufeli, W. B., Sixma, H. J., & Bosveld, W. (2001). Burnout contagion among general practitioners. *Journal of Social and Clinical Psychology, 20*(1), 82–98. <https://doi.org/10.1521/jscp.20.1.82.22251>
- Bauwens, R., Decramer, A., & Audenaert, M. (2021). Challenged by great expectations? Examining cross-level moderations and curvilinearity in the public sector job demands–resources model. *Review of Public Personnel Administration, 41*(2), 319–337. <https://doi.org/10.1177/0734371X19884102>
- Beusaert, S., Froehlich, D. E., Devos, C., & Riley, P. (2016). Effects of support on stress and burnout in school principals. *Educational Research, 58*(4), 347–365. <https://doi.org/10.1080/00131881.2016.1220810>
- Bermejo-Toro, L., Prieto-Ursúa, M., & Hernández, V. (2016). Towards a model of teacher well-being: Personal and job resources involved in teacher burnout and engagement. *Educational Psychology, 36*(3), 481–501. <https://doi.org/10.1080/01443410.2015.1005006>
- Bernerth, J. B., & Aguinis, H. (2016). A critical review and best-practice recommendations for control variable usage. *Personnel Psychology, 69*(1), 229–283. <https://doi.org/10.1111/peps.12103>
- Bliese, P. D., Maltarich, M. A., & Hendricks, J. L. (2018). Back to basics with mixed-effects models: Nine take-away points. *Journal of Business and Psychology, 33*(1), 1–23. <https://doi.org/10.1007/s10869-017-9491-z>

- Borst, R. T. (2018). Comparing work engagement in people-changing and people-processing service providers: A mediation model with red tape, autonomy, dimensions of PSM, and performance. *Public Personnel Management*, 47(3), 287–313.  
<https://doi.org/10.1177/0091026018770225>
- Borst, R. T., & Blom, R. (2021). HRM and well-being in the public sector. In B. Steijn & E. Knies (Eds.), *Research handbook on HRM in the public sector* (pp. 172–188). Edward Elgar Publishing Limited. <https://doi.org/10.4337/9781789906622.00021>
- Borst, R. T., & Knies, E. (2023). Well-being of public servants under pressure: The roles of job demands and personality traits in the health-impairment process. *Review of Public Personnel Administration*, 43(1), 159–184. <https://doi.org/10.1177/0734371X211052674>
- Breevaart, K. (2020). Leiderschap en gezondheid op het werk [Leadership and health at work]. In W. B. Schaufeli & A. B. Bakker (Eds.), *De psychologie van arbeid en gezondheid* [The psychology of work and health] (4th ed., pp. 459–468). Bohn Stafleu van Loghum.
- Cascio, W. F. (2012). Methodological issues in international HR management research. *The International Journal of Human Resource Management*, 23(12), 2532–2545.  
<https://doi.org/10.1080/09585192.2011.561242>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Routledge.  
<https://doi.org/10.4324/9780203771587>
- Collie, R. J., Granziera, H., & Martin, A. J. (2020). School principals' workplace well-being: A multinational examination of the role of their job resources and job demands. *Journal of Educational Administration*, 58(4), 417–433. <https://doi.org/10.1108/JEA-04-2019-0075>

- Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology, 95*(5), 834–848. <https://doi.org/10.1037/a0019364>
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3), 499–512. <https://doi.org/10.1037/0021-9010.86.3.499>
- Demerouti, E., Le Blanc, P. M., Bakker, A. B., Schaufeli, W. B., & Hox, J. (2009). Present but sick: A three-wave study on job demands, presenteeism and burnout. *Career Development International, 14*(1), 50–68. <https://doi.org/10.1108/13620430910933574>
- Diefenbach, T. (2009). New public management in public sector organizations: The dark sides of managerialistic “enlightenment.” *Public Administration, 87*(4), 892–909. <https://doi.org/10.1111/j.1467-9299.2009.01766.x>
- Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods, 12*(2), 121–138. <https://doi.org/10.1037/1082-989X.12.2.121>
- Fletcher, L., Bailey, C., Alfes, K., & Madden, A. (2020). Mind the context gap: A critical review of engagement within the public sector and an agenda for future research. *The International Journal of Human Resource Management, 31*(1), 6–46. <https://doi.org/10.1080/09585192.2019.1674358>
- George, B., & Pandey, S. K. (2017). We know the Yin—But where is the Yang? Toward a balanced approach on common source bias in public administration scholarship. *Review of Public Personnel Administration, 37*(2), 245–270. <https://doi.org/10.1177/0734371X17698189>

- González-Romá, V., & Hernández, A. (2022). Conducting and evaluating multilevel studies: Recommendations, resources, and a checklist. *Organizational Research Methods*. Advance online publication. <https://doi.org/10.1177/10944281211060712>
- Groeneveld, S., & Steijn, B. (2016). Management of human resources: Trends and variation. In S. Van de Walle & S. Groeneveld (Eds.), *Theory and practice of public sector reform* (pp. 178–193). Routledge. <https://doi.org/10.4324/9781315714141>
- Guest, D., Conway, N., & Dewe, P. (2004). Using sequential tree analysis to search for ‘bundles’ of HR practices. *Human Resource Management Journal*, *14*(1), 79–96. <https://doi.org/10.1111/j.1748-8583.2004.tb00113.x>
- Guest, D. E. (2017). Human resource management and employee well-being: Towards a new analytic framework. *Human Resource Management Journal*, *27*(1), 22–38. <https://doi.org/10.1111/1748-8583.12139>
- Hakanen, J. J., Schaufeli, W. B., & Ahola, K. (2008). The Job Demands-Resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work & Stress*, *22*(3), 224–241. <https://doi.org/10.1080/02678370802379432>
- Hammerschmid, G., Van de Walle, S., Andrews, R., & Mostafa, A. M. S. (2019). New public management reforms in Europe and their effects: Findings from a 20-country top executive survey. *International Review of Administrative Sciences*, *85*(3), 399–418. <https://doi.org/10.1177/0020852317751632>
- Hofmann, D. A., & Gavin, M. B. (1998). Centering decisions in hierarchical linear models: Implications for research in organizations. *Journal of Management*, *24*(5), 623–641. <https://doi.org/10.1177/014920639802400504>

- Hox, J. J., Moerbeek, M., & Van de Schoot, R. (2017). *Multilevel analysis: Techniques and applications*. Routledge. <https://doi.org/10.4324/9781315650982>
- Jia, L., Shaw, J. D., Tsui, A. S., & Park, T.-Y. (2014). A social–structural perspective on employee–organization relationships and team creativity. *Academy of Management Journal*, *57*(3), 869–891. <https://doi.org/10.5465/amj.2011.0147>
- Klocko, B. A., & Wells, C. M. (2015). Workload pressures of principals: A focus on renewal, support, and mindfulness. *NASSP Bulletin*, *99*(4), 332–355.  
<https://doi.org/10.1177/0192636515619727>
- Knies, E., Boselie, P., Gould-Williams, J., & Vandenabeele, W. (2018). Strategic human resource management and public sector performance: Context matters. *The International Journal of Human Resource Management*. Advance online publication.  
<https://doi.org/10.1080/09585192.2017.1407088>
- Knies, E., Decramer, A., & Audenaert, M. (2022). Line managers in the public sector. In K. Townsend, A. Bos-Nehles, & K. Jiang (Eds.), *Research handbook on line managers* (pp. 169–183). Edward Elgar Publishing. <https://doi.org/10.4337/9781839102745.00017>
- Knudsen, H. K., Ducharme, L. J., & Roman, P. M. (2009). Turnover intention and emotional exhaustion “at the top”: Adapting the job demands-resources model to leaders of addiction treatment organizations. *Journal of Occupational Health Psychology*, *14*(1), 84–95. <https://doi.org/10.1037/a0013822>
- Kühnel, J., Sonnentag, S., & Bledow, R. (2012). Resources and time pressure as day-level antecedents of work engagement. *Journal of Occupational and Organizational Psychology*, *85*(1), 181–198. <https://doi.org/10.1111/j.2044-8325.2011.02022.x>
- March, J.C., & Simon, H.A. (1958). *Organizations*. Wiley.

- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52, 397–422. <https://doi.org/10.1146/annurev.psych.52.1.397>
- Mathieu, J. E., Aguinis, H., Culpepper, S. A., & Chen, G. (2012). Understanding and estimating the power to detect cross-level interaction effects in multilevel modeling. *Journal of Applied Psychology*, 97(5), 951–966. <https://doi.org/10.1037/a0028380>
- Maynard-Moody, S. W., & Musheno, M. C. (2009). *Cops, teachers, counselors: Stories from the front lines of public service*. University of Michigan Press.  
<https://doi.org/10.3998/mpub.11924>
- Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, 89(6), 852–863.  
<https://doi.org/10.1037/0022-3514.89.6.852>
- Nishii, L. H., & Wright, P. M. (2008). Variability within organizations: Implications for strategic human resource management. In D. B. Smith (Ed.), *The people make the place: Dynamic linkages between individuals and organizations* (pp. 225–248). Psychology Press.  
<https://doi.org/10.4324/9780203809549>
- OECD. (2017). *Education policy outlook: Belgium*. <https://www.oecd.org/education/Education-Policy-Outlook-Country-Profile-Belgium.pdf>
- OECD. (2019). *Working and learning together: Rethinking human resource policies for schools*. *OECD reviews of school resources*. OECD Publishing. <https://doi.org/10.1787/b7aaf050-en>
- Osborne, J. W., Costello, A. B., & Kellow, J. T. (2008). Best practices in exploratory factor analysis. In J. W. Osborne (Ed.), *Best practices in quantitative methods* (pp. 86–99). Sage. <https://doi.org/10.4135/9781412995627>

- Peccei, R., & Van De Voorde, K. (2019a). The application of the multilevel paradigm in human resource management–outcomes research: Taking stock and going forward. *Journal of Management*, 45(2), 786–818. <https://doi.org/10.1177/0149206316673720>
- Peccei, R., & Van De Voorde, K. (2019b). Human resource management–well-being–performance research revisited: Past, present, and future. *Human Resource Management Journal*, 29(4), 539–563. <https://doi.org/10.1111/1748-8583.12254>
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569. <https://doi.org/10.1146/annurev-psych-120710-100452>
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531–544.  
<https://doi.org/10.1177/014920638601200408>
- Purcell, J., & Hutchinson, S. (2007). Front-line managers as agents in the HRM-performance causal chain: Theory, analysis and evidence. *Human Resource Management Journal*, 17(1), 3–20. <https://doi.org/10.1111/j.1748-8583.2007.00022.x>
- Robbins, J. M., Ford, M. T., & Tetrick Lois, E. (2012). Perceived unfairness and employee health: A meta-analytic integration. *Journal of Applied Psychology*, 97(2), 235–272.  
<https://doi.org/10.1037/a0025408>
- Roe, R. A., & Zijlstra, F. R. H. (2000). Work pressure. Results of a conceptual and empirical analysis. In M. Vartiainen, F. Avallone, & N. Anderson (Eds.), *Innovative theories, tools, and practices in work and organizational psychology* (pp. 29–45). Hogrefe & Huber Publishers.

- Schaufeli, W. B. (2015). Engaging leadership in the job demands-resources model. *Career Development International*, 20(5), 446–463. <https://doi.org/10.1108/CDI-02-2015-0025>
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25(3), 293–315. <https://doi.org/10.1002/job.248>
- Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior*, 30(7), 893–917. <https://doi.org/10.1002/job.595>
- Schaufeli, W. B., Shimazu, A., Hakanen, J., Salanova, M., & De Witte, H. (2019). An ultra-short measure for work engagement: The UWES-3 validation across five countries. *European Journal of Psychological Assessment*, 35(4), 577–591. <https://doi.org/10.1027/1015-5759/a000430>
- Schaufeli, W. B., & Van Dierendonck, D. (2000). *Handleiding van de Utrechtse Burnout Schaal (UBOS)* [Manual Utrecht Burnout Scale]. Swets Test Services.
- Schaufeli, W. B., & Van Rhenen, W. (2006). Over de rol van positieve en negatieve emoties bij het welbevinden van managers: Een studie met de Job-related Affective Well-being Scale (JAWS) [About the role of positive and negative emotions in the well-being of managers: A study using the Job-related Affective Well-being Scale (JAWS)]. *Gedrag & Organisatie*, 19(4), 323–344. <https://doi.org/10.5117/2006.019.004.002>
- Selig, J. P., & Preacher, K. J. (2008). *Monte Carlo method for assessing mediation: An interactive tool for creating confidence intervals for indirect effects* [Computer software]. <http://quantpsy.org/>



- Shen, J. (2016). Principles and applications of multilevel modeling in human resource management research. *Human Resource Management, 55*(6), 951–965.  
<https://doi.org/10.1002/hrm.21666>
- Snijders, T. A. B., & Bosker, R. J. (1994). Modeled variance in two-level models. *Sociological Methods & Research, 22*(3), 342–363. <https://doi.org/10.1177/0049124194022003004>
- Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *The Academy of Management Journal, 38*(5), 1442–1465.  
<https://doi.org/10.2307/256865>
- Steijn, B., & Giauque, D. (2021). Public sector employee well-being: Examining its determinants using the JD-R and P-E fit models. In P. Leisink, L. B. Andersen, G. A. Brewer, C. B. Jakobsen, E. Knies, & W. Vandenabeele (Eds.), *Managing for public service performance: How people and value make a difference* (pp. 221–238). Oxford University Press. <https://doi.org/10.1093/oso/9780192893420.003.0012>
- Tadić, M., Bakker, A. B., & Oerlemans, W. G. M. (2015). Challenge versus hindrance job demands and well-being: A diary study on the moderating role of job resources. *Journal of Occupational and Organizational Psychology, 88*(4), 702–725.  
<https://doi.org/10.1111/joop.12094>
- Tsui, A. S., Pearce, J. L., Porter, L. W., & Tripoli, A. M. (1997). Alternative approaches to the employee-organization relationship: Does investment in employees pay off? *Academy of Management Journal, 40*(5), 1089–1121. <https://doi.org/10.2307/256928>
- Tuckey, M. R., Bakker, A. B., & Dollard, M. F. (2012). Empowering leaders optimize working conditions for engagement: A multilevel study. *Journal of Occupational Health Psychology, 17*(1), 15–27. <https://doi.org/10.1037/a0025942>

- Van Ruysseveldt, J., Verboon, P., & Smulders, P. (2011). Job resources and emotional exhaustion: The mediating role of learning opportunities. *Work & Stress*, 25(3), 205–223.  
<https://doi.org/10.1080/02678373.2011.613223>
- Wirtz, N., Rigotti, T., Otto, K., & Loeb, C. (2017). What about the leader? Crossover of emotional exhaustion and work engagement from followers to leaders. *Journal of Occupational Health Psychology*, 22(1), 86. <https://doi.org/10.1037/ocp0000024>
- Wright, P. M., & Boswell, W. R. (2002). Desegregating HRM: A review and synthesis of micro and macro human resource management research. *Journal of Management*, 28(3), 247–276. <https://doi.org/10.1177/014920630202800302>
- Xanthopoulou, D., & Bakker, A. B. (2021). Antecedents and consequences of work engagement: A multilevel nomological net. In J. P. Meyer & B. Schneider (Eds.), *A research agenda for employee engagement in a changing world of work* (pp. 37–51). Edward Elgar Publishing. <https://doi.org/10.4337/9781789907858.00010>
- Zhang, L., Zhang, N., & Qiu, Y. (2017). Positive group affective tone and employee work engagement: A multilevel investigation. *Social Behavior and Personality*, 45(11), 1905–1918. <https://doi.org/10.2224/sbp.6751>

**Table 1.** Descriptive statistics and correlations at the leader level and employee level.

	Means	S.D.	1	2	3	4	5	6	7
<i>Leader level</i>									
1. Work pressure	5.46	0.77	1						
2. Number of teachers	94.09	50.83	0.07	1					
3. IDVR	5.90	0.58	0.15	0.14	1				
4. IEXC	5.80	0.51	0.08	0.12	0.60**	1			
<i>Employee level</i>									
1. DVR	5.08	0.93	1						
2. EXC	5.71	0.72	0.32**	1					
3. Work engagement	5.60	0.83	0.31**	0.17**	1				
4. Emotional exhaustion	3.14	1.14	-0.28**	-0.02	-0.36**	1			
5. Psychological empowerment	5.05	0.73	0.40**	0.15**	0.51**	-0.34**	1		
6. Gender			0.06	0.13**	0.05	0.04	-0.06	1	
7. Tenure	16.64	10.67	-0.03	0.07*	0.02	-0.01	0.03	0.00	1

*Note.* IDVR = implemented developmental rewards. IEXC = implemented expected contributions.

DVR = developmental rewards. EXC = expected contributions. \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

**Table 2.** Staged approach to the first and second conditions of moderated mediation analysis with Emotional Exhaustion as outcome.

Variable	Intercept- only model	Model 2	Model 3	Model 4	Model 5
<i>Employee level</i>					
Intercept	3.14***	3.06***	3.05***	3.04***	3.01***
Gender		0.05	0.08	0.07	0.12†
Job tenure		0.00	0.00	0.00	0.00
Psychological empowerment		-0.49***	-0.39***	-0.38***	-0.19***
DVR			-0.24***	-0.26***	-0.23***
EXC			0.09	0.18*	0.19*
<i>Leader level</i>					
IDVR		-0.10	-0.10	-0.14	-0.14
IEXC		0.19	0.18	0.20	0.19
Number of teachers		0.00	0.00	0.00	0.00
Work pressure				0.06	0.06
<i>Cross-level moderator</i>					
DVR × work pressure				0.05	0.07
EXC × work pressure				-0.20*	-0.17*
<i>Mediator</i>					
Work engagement					-0.36***
Deviance	3113	2749	2679	2666	2616
Pseudo R <sup>2</sup>		0.08	0.11	0.14	0.18

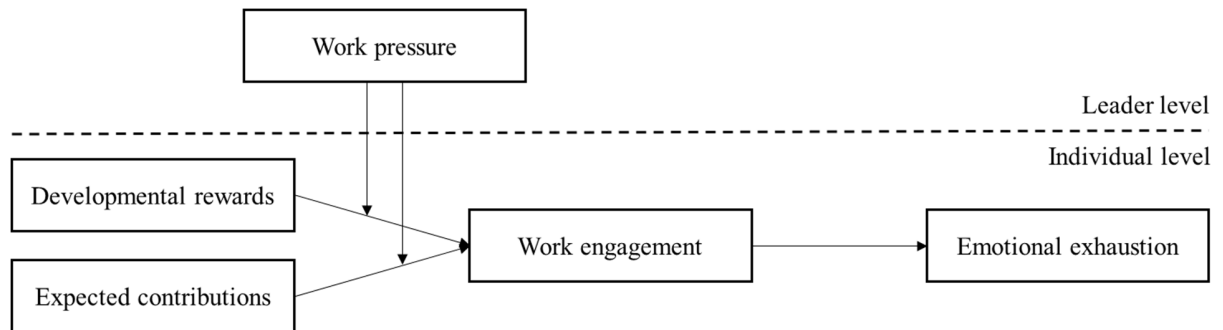
*Note.* DVR = developmental rewards. EXC = expected contributions. IDVR = implemented developmental rewards. IEXC = implemented expected contributions. *n* leaders = 91; *n* employees = 904. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

**Table 3.** Staged approach to the third condition of the moderated mediation analysis with Work Engagement as outcome.

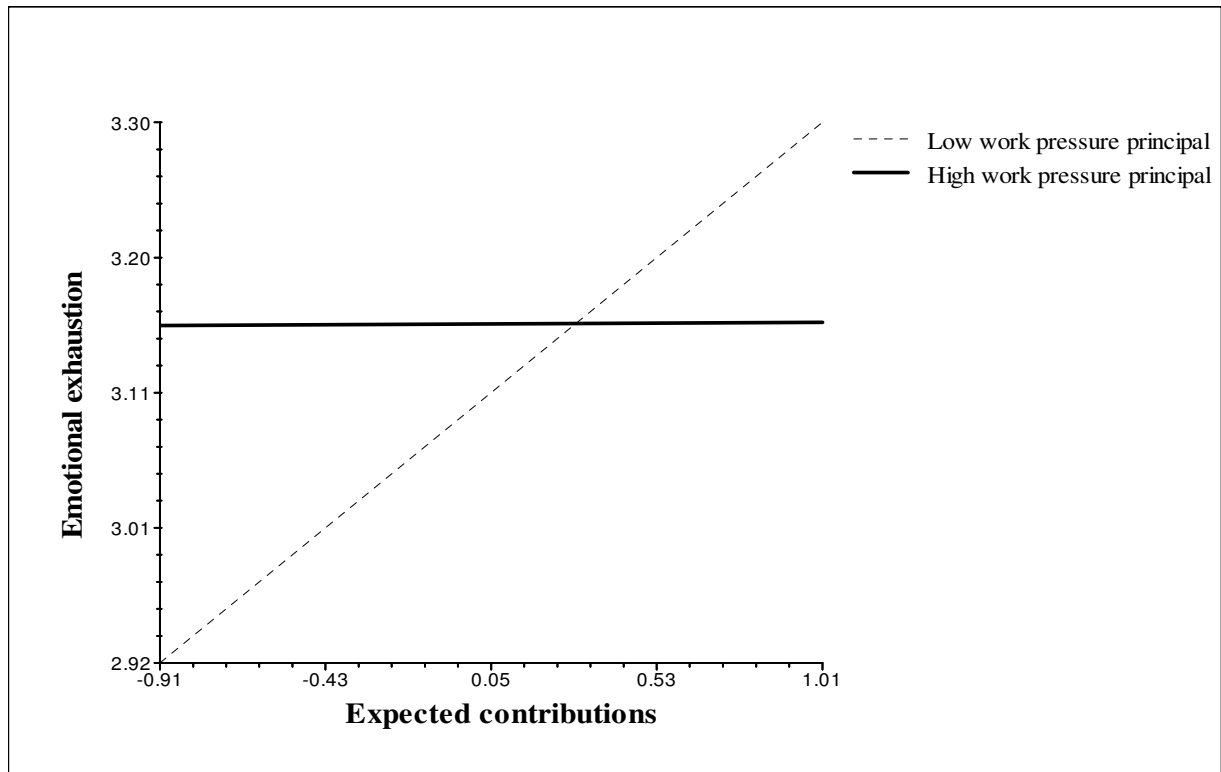
Variable	Intercept-only			
	model	Model 2	Model 3	Model 4
<i>Employee level</i>				
Intercept	5.59***	5.50***	5.52***	5.54***
Gender		0.15**	0.13*	0.13*
Job tenure		-0.00	-0.00	-0.00
Psychological empowerment		0.59***	0.53***	0.53***
DVR			0.10*	0.08*
EXC			0.07†	0.03
<i>Leader level</i>				
IDVR		0.14*	0.13*	0.13*
IEXC		-0.15†	-0.15†	-0.17*
Number of teachers		-0.00*	-0.00*	-0.00*
Work pressure				-0.03
<i>Cross-level moderator</i>				
DVR × work pressure				0.04
EXC × work pressure				0.08†
Deviance	2497	1997	1956	1939
Pseudo R <sup>2</sup>		0.24	0.26	0.28

*Note.* DVR = developmental rewards. EXC = expected contributions. IDVR = implemented developmental rewards. IEXC = implemented expected contributions. *n* leaders = 91; *n* employees = 904. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

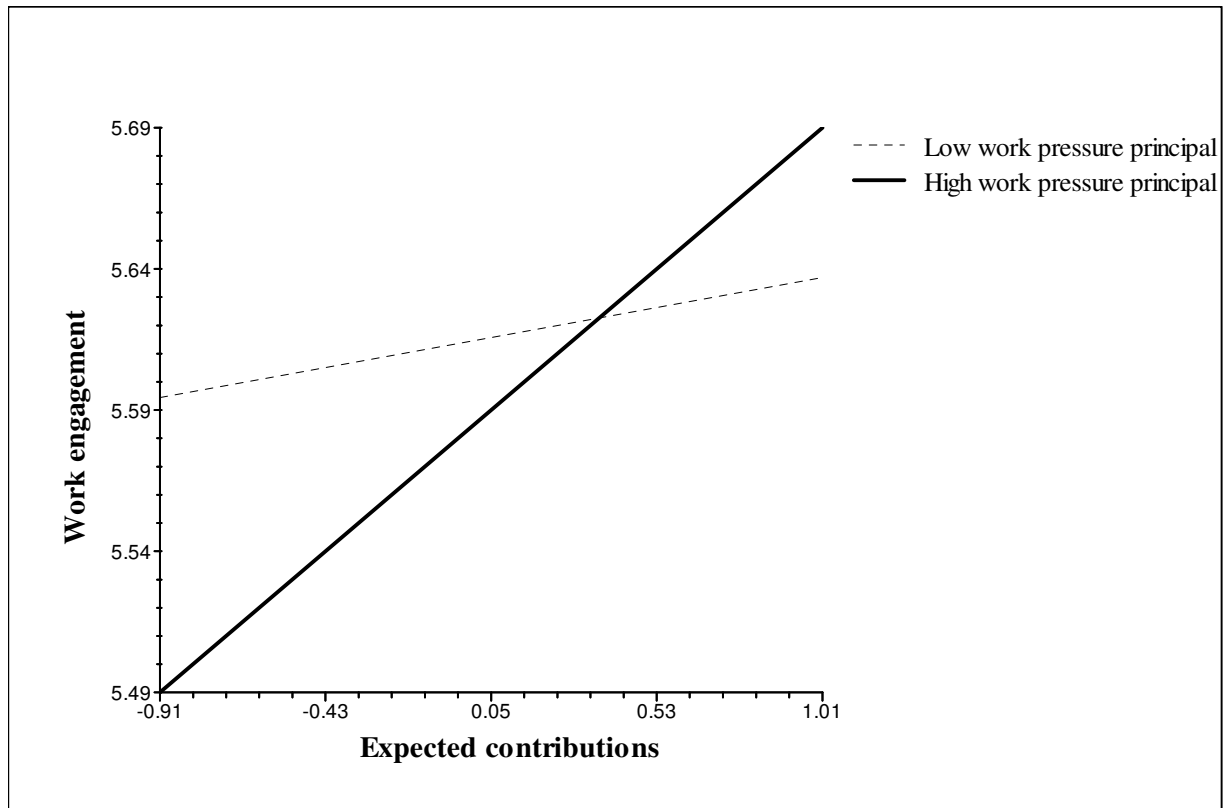
**Figure 1.** Multilevel moderated mediation of the relationship between developmental rewards, expected contributions and emotional exhaustion.



**Figure 2.** Cross-level moderation of the relationship between expected contributions and emotional exhaustion.



**Figure 3.** Cross-level moderation of the relationship between expected contributions and work engagement.





## Appendix A.

Construct	Dimension	Item
Developmental rewards (Jia et al., 2014)		My school values teachers' feedback on the school's overall policies.
		My school emphasizes teachers' career development.
		My school cares about teachers' satisfaction at work.
		My school creates opportunities for teachers to show their talents.
		My school treats teachers fairly.
		My school values teachers' suggestions on work.
		My school empowers teachers fully within their sphere of responsibility.
		My school encourages teachers to participate actively in the school.
		My school respects human dignity.
		My school trains teachers on knowledge and skills for their jobs and career development.
Expected contributions (Jia et al., 2014)	In-role work requirements	Our school expects teachers to fulfill the job inside and out.
		Our school expects teachers to complete their performance goals in quality.
		Our school expects teachers to complete their performance goals in quantity.
		Our school expects teachers to operate legally and follow school rules and policy.
		Our school expects teachers to conscientiously complete extra assignments at a moment's notice.
		Our school expects teachers to work seriously and accurately.
		Our school expects teachers to team up with other teachers.
		Our school expects teachers to work hard without complaints.
		Our school expects teachers to contribute to the future development of the school.
		Our school expects teachers to actively promote the schools' image and reputation.
		Our school expects teachers to take initiative to make constructive suggestions.

	Extra-role work requirements	Our school expects teachers to adopt new ideas and methods actively to improve education.
		Our school expects teachers to continuously improve work procedures and methods.
		Our school expects teachers to take initiative to carry out new or challenging assignments.
Work pressure (Demerouti et al., 2009)		To what extent does your job require you to work hard?
		To what extent does your job require you to do a lot of work?
		To what extent is there enough time to do your job properly?
		To what extent is there an excessive amount of work in your job?
		To what extent do you feel that there is not enough time to complete your tasks?
		To what extent are you faced with conflicting demands?
Work engagement (Schaufeli et al., 2019)	Vigor	At my work, I feel bursting with energy.
	Dedication	I am enthusiastic about my job.
	Absorption	I am immersed in my work.
Emotional exhaustion (Schaufeli & Van Dierendonck, 2000)		I feel mentally exhausted by my work.
		At the end of my workday, I feel empty.
		I feel tired when I get up in the morning and there is another work day ahead of me.
		Working with people all day is a heavy burden for me.
		I feel "burned out" by my work.
		I feel frustrated by my job.
		I think I put too much effort into my job.
		I feel at the end of my rope.
Psychological empowerment (Spreitzer, 1995)	Meaning	The work I do is very important to me.
		My job activities are personally meaningful to me.
		The work I do is meaningful to me.
	Competence	I am confident about my ability to do my job.
		I am self-assured about my capabilities to perform my work activities.
		I have mastered the skills necessary for my job.
	Self-Determination	I have significant autonomy in determining how I do my job.
		I can decide on my own how to go about doing my work.

		I have considerable opportunity for independence and freedom in how I do my job.
	Impact	My impact on what happens in my department is large.
		I have a great deal of control over what happens in my department.
		I have significant influence over what happens in my department.