

**Reducing day-level emotional exhaustion: The complementary role of high involvement work practices work practices and engaging leadership**

Running Head: Reducing day-level emotional exhaustion

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## **Reducing day-level emotional exhaustion: The complementary role of high involvement work systems and engaging leadership**

### **Abstract**

HIWS have been found to be improve employee well-being. The underlying processes through which HIWS influence employee well-being and the conditions under which these practices work are not fully understood. This study draws on job demands-resources theory to address this gap by theorizing two novel mediators, i.e. work pressure and bonding social capital, to explain how HIWS influence emotional exhaustion. We further proposed that engaging leadership as a proxy of line manager implementation of HIWS would strengthen these relationships. An integrated model is presented on how, why, and when HIWS influence employee well-being. Using data collected from 97 employees in a pharmaceutical company via a general survey and then a diary survey for 5 working days, this study found that HIWS alleviated day-level emotional exhaustion through their experience of higher day-level bonding social capital and lower day-level work pressure and these relationships were stronger under high level of engaging leadership.

**Keywords:** High-involvement work practices, engaging leadership, well-being, emotional exhaustion, bonding social capital, work pressure, diary study

### **Practitioner Notes**

## **What is known**

- HIWS have been found to improve employee well-being.
- Job demands and resources may represent potent explanatory variables between HIWS and employee outcomes and empirically testing the same will further open the ‘black box’ between HRM and employee well-being.
- Line managers play an important role in implementing HIWS although whether (and what) leadership styles influence the effectiveness of HIWS is not yet fully clear.

## **What this paper adds**

- This study theorizes an integrated model to investigate how, why, and when HIWS influence employee well-being.
- This study draws on job demands-resources theory and proposes two novel mediators, i.e. a job demand (work pressure) and job resource (bonding social capital) which explain how HIWS influence emotional exhaustion.
- Engaging leadership is found as a novel contextual factor that enhances the effectiveness of HIWS.
- This study adopts a diary study approach, which has advantages over a cross-sectional design; and examines the cross-level (general level HIWS and employee day-level emotional exhaustion) effect, thereby enabling greater insights into the optimistic versus pessimistic debate in HRM.

## **Implications for Practitioners**

- Findings suggest that for HR professionals and managers, investment in HIWS pays dividends for improving employees’ well-being.
- Organizations need to design HIWS that helps to lower work pressure and to increase the social bonding at work to alleviate emotional exhaustion.
- Leadership development efforts should be targeted at developing engaging leaders since the positive effects of HIWS on pertinent employee outcomes is mitigated when line managers are not engaging.

## 1 | INTRODUCTION

Research in Strategic Human Resources Management (SHRM) over the past 30 years has been concerned with maximizing organizational performance and employee well-being through adopting a system of HRM practices, e.g., high performance work systems (HPWS), and/or high involvement work systems (HIWS; Boxall & Macky, 2009). Whilst the empirical evidence shows that these types of progressive HRM practices generally increase performance, the jury is out on whether they improve (optimistic perspective) or impair (pessimistic perspective) employees' health related well-being (Peccei & Van de Voorde, 2019; Peccei et al., 2013). Some level of consensus is emerging that HIWS seem to provide benefits for employee well-being (Boxall et al., 2019; Boxall & Macky, 2009). However, the underlying mechanisms involved and the conditions under which they are more or less likely to work are still not fully understood (Butts et al., 2009; Peccei et al., 2013).

Building on Job Demands-Resources theory (JD-R; Demerouti et al., 2001; Bakker & Demerouti, 2018), we propose that HIWS constitute a valuable organizational resource that can alleviate employee well-being (i.e. emotional exhaustion) via reducing employees' job demands (i.e. work pressure) and increasing their job resources (i.e. bonding social capital). Emotional exhaustion, the core dimension of burnout (Lee & Ashforth, 1996), refers to a state whereby one is emotionally, physically, and cognitively drained from work (Maslach et al., 2001). Work pressure is concerned with the constant time demands placed on employees in carrying out their work and is thus reflective of a general measure of work intensification (Mullarkey et al., 1995) and is a typical example of a job demand (Macky & Boxall, 2008). As an important resource at work, bonding social capital focuses on the high-quality relationships among employees that enhance collaboration, cooperation and trust (Carmeli et al., 2009). HIWS which promote

employee involvement are expected to reduce work pressure and increase bonding social capital which, in turn, influence employee well-being. Work pressure and bonding social capital are thus proposed to mediate the relationship between HIWS and employee emotional exhaustion.

Given the important role of line managers in implementing HIWS (Fu et al., 2020) and the growing call to integrate leadership and HRM research (Leroy et al., 2018), our study goes one step further by investigating the *conditions* which facilitate the effects of HIWS on the aforementioned pertinent outcomes. More specifically, we introduce the novel concept of engaging leadership (Schaufeli, 2015) as a contextual factor which might alter the effects of HIWS on emotional exhaustion via work pressure and bonding social capital. Engaging leadership, which emphasizes *strengthening, connecting, inspiring, and facilitating (empowering)* behaviors among employees, is a relatively new leadership style geared toward improving employee well-being (Schaufeli, 2015). When leaders are more engaging, the impacts of HIWS on work pressure and bonding social capital are expected to be strengthened as such leadership enables employees to have a better connection, collaboration and involvement.

Given that emotional exhaustion (and job demands and resources) can vary on any given day (Breevaart & Tims, 2009; Molino et al. 2018), we employed a mixed general and daily diary approach to test the integrated model where general-level HIWS will be more likely to reduce day-level work pressure and increase day-level bonding social capital when employees have an engaging leader, that is, when engaging leadership is high rather than low. Data were collected from 97 employees in a pharmaceutical company via a general survey and then a diary survey for 5 working days. Results from multi-level analysis provide support for the integrated model.

Rooted in HRM-employee well-being research, this study makes three main contributions to the HRM literature. Firstly, this study extends HRM-well-being research by exploring the

indirect effect of HIWS on employee well-being. In particular, two mediators (work pressure and bonding social capital) based on JD-R model were proposed thereby contributing to open the “black box” of HRM and well-being i.e. emotional exhaustion. In addition, this study explores the conditional effect of engaging leadership in the relationships between HIWS and employee job demands and resources. In doing so, this study advances HRM-well-being research by involving the line managers who play a key role in implementing and enabling HRM practices to function among employees. Lastly, this study moves existing HRM-well-being research a step forward by adopting a mixed general and dairy study approach, which has advantages over the cross-sectional design commonly used in HRM research. Overall, this study sheds valuable insights on how, why, and when HIWS influence employee well-being.

## **2 | THEORETICAL BACKGROUND AND HYPOTHESES**

### **2.1 | HIWS and emotional exhaustion**

HIWS comprise a set of HR practices aimed at involving employees in key aspects of decision making for the purpose of enhancing their well-being and job performance (Butts et al., 2009). HIWS share fundamental characteristics with and are seen as one variant of the broader high-performance work practices (HPWP) approach to workforce management (Boxall & Macky, 2009). However, the HPWP approach is more representative of a shareholder perspective concerned with choosing the best practices to maximise performance, and improved human capital, rather than involvement, is regarded as the route to performance (Wood, 2020). The high-involvement management approach is best understood by Lawler’s (1986) PIRK model, whereby the following are four dimensions of HIWS: workplace power (P), relevant information flows (I), rewards (R) and the opportunity to improve knowledge (K). In this respect, by implementing

HIWS, employees are empowered to make more and better decisions due to enhanced information and knowledge, and they are rewarded for doing so (Macky & Boxall, 2009).

The positive effects of HIWS on organizational performance have been established in previous research (e.g. Boxall et al., 2019). However, their effects on employee outcomes is still the subject of academic debate leading scholars to postulate a potential optimistic versus pessimistic perspective of HRM (Peccei & Van de Voorde, 2019). Research to date suggests that HIWS generally improve well-being outcomes such as commitment and job satisfaction (e.g., Butts et al., 2009). However, there exists a handful of studies revealing that HIWS can cause dissatisfaction (e.g., Wood et al., 2012), especially when there is pressure to work harder without real improvements in rewards and autonomy (Macky & Boxall, 2008). Indeed, supporting this pessimistic perspective, some studies have found that HIWS can increase anxiety (Wood et al., 2012) and burnout (Kroon et al., 2009), although it is important to note that the practices were rated from the perspective of managers rather than the employees themselves. However, the majority of studies that build on the PIRK model and use the more reliable source of employee ratings, show that HIWS alleviate employees' levels of stress (Butts et al., 2009) and burnout (Kilroy et al., 2016), thereby supporting the optimistic perspective. Indeed, the optimistic perspective is appearing dominant for the involvement approach to workforce management since it represents a stakeholder approach to workforce management whereby employee well-being is seen as an important outcome in its own right (Wood, 2020). Supporting this logic, a recent review of studies on the topic by Boxall and colleagues (2019) highlight that HIWS generally tend to show an overall positive effect on employee outcomes but warn that further verification is still required.

In the present research, we advocate this optimistic approach and, building on JD-R theory, propose that HIWS represent a valuable organizational resource that will alleviate day-level emotional exhaustion (Kilroy et al., 2020). The JD-R model represents a dual process model which proposes, on the one hand, that job demands lead to burnout and, on the other hand, that job resources counteract burnout and increase engagement (Demerouti et al., 2001). Job resources are defined as “those physical, social, or organizational aspects of the job that may do any of the following: (a) be functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth and development” (Demerouti et al., 2001, p. 501). HIWS are increasingly being recognized as a key organizational resource in the JD-R model since they help employees achieve their work goals, deal with their job demands and stimulate growth, thereby improving well-being, that is, reducing burnout (e.g., Bakker & Demerouti, 2018; Boxall et al., 2019; Kilroy et al., 2020). Prior empirical research has found that HIWS can directly curb employee burnout (Castanheira & Chambel, 2010; Kilroy et al., 2016). It is possible that employee emotional exhaustion changes at a daily level. In a similar vein, we expect HIWS are negatively associated with day-level emotional exhaustion.

In addition, capturing the effects of general-level HIWS on day-level emotional exhaustion enables for a more accurate (valid) assessment of the focal outcome in its natural context as the plague of recall bias is reduced (e.g. Beal & Weiss, 2003). It is possible that organizational-level resources (HIWS) may influence processes at the lower level (i.e., daily emotional exhaustion) and testing this relationship from a multilevel perspective leads to a better understanding of how the relevant psychological phenomena unfold within organizations (Bakker & Demerouti, 2018). Based on JD-R theory and extending our understanding of the resource potential of HIWS to predict day-level emotional exhaustion, we formulate the following hypothesis:

*Hypothesis 1: General-level HIWS are negatively related to day-level emotional exhaustion.*

## **2.2 | HIWS, work pressure and emotional exhaustion**

Work pressure is concerned with the constant time demands placed on employees in carrying out their work and is thus reflective of a general measure of work intensification (Mullarkey et al., 1995). The negative consequences of work pressure for employee well-being have been demonstrated in past research. For example, in line with the health-impairment pathway of the JD-R model, studies found that time pressure increases emotional exhaustion over time (Demerouti et al., 2001; Demerouti et al., 2004). A job demand such as work pressure taxes employees energy reserves and ensures that they will need to invest even more effort and personal resources to cope with and meet demands thereby causing exhaustion (Lee & Ashforth, 1996). We can therefore expect that day-level work pressure will be positively related to day-level emotional exhaustion in our study.

The relationship between HIWS and day-level work pressure experienced by employees has not yet been subject to empirical investigation. However, the link between HIWS and job demands is one of contention. Despite the largely positive benefits of involvement, some scholars highlight that greater levels of involvement can be accompanied with higher levels of stress and fatigue (e.g. Stewart et al., 2010). This is a core tension within the HIWS approach to workforce management notwithstanding the fact that a certain amount of work pressure is not necessarily a bad thing and HIWS can also function well to ameliorate such job demands (e.g., Boxall et al., 2019). Indeed, the control/autonomy, the ability to share information and be adequately trained (all inherent to HIWS) can help employees cope with their workload, thereby culminating into lower burnout (Kilroy et al., 2016). Since HIWS can increase decision latitude for employees, this

enables them to adjust to demands, such as work pressure, according to their own needs and circumstances (Castanheira & Chambel, 2010). HIWS can further enable employees to think of better and more efficient ways of doing their jobs in a shorter time frame and react better and quicker to novel problems, thus improving workers' capacity to deal with work pressure (Wood et al., 2012). Following this more optimistic perspective, we can expect that HIWS are negatively related to day-level work pressure.

In accordance with JD-R theory, organizational resources (i.e., HIWS) can protect employees personal energy resources (i.e., effort invested to meet work pressure) and indirectly help workers cope with burnout (Lee & Ashforth, 1996). This finding was partly revealed by Macky and Boxall (2008) who found HIWS to decrease a broad measure of work intensification and lower stress although they did not test for mediation effects. Given the tension surrounding the potential intensification arising from HIWS, more empirical research is required (Boxall et al., 2019). On this basis, and to delve deeper into the effects of employees' perceptions of HIWS on well-being and the underlying mechanisms involved, we propose that HIWS will alleviate day-level emotional exhaustion via reducing day-level work pressure.

*Hypothesis 2: Day-level work pressure mediates the negative relationship between general-level HIWS and day-level emotional exhaustion.*

### **2.3 | HIWS, bonding social capital and emotional exhaustion**

Bonding social capital focuses on the extent to which there exists high-quality relationships among members of a group that enhance collaboration, cooperation and trust (Carmeli et al., 2009). Bonding social capital is considered an important resource, which has been linked with higher levels of employee engagement (Carmeli et al., 2009) and lower levels of emotional exhaustion (Kowalski et al., 2010). Bonding social capital is regarded as a vital social resource because it can

“help people cope with stress and to foster salutogenetic potential” (Kowalski et al., 2010, p. 1656). However, studies examining the relationship between bonding social capital and emotional exhaustion are rare and recent research has shown that daily positive social interactions predict positive day-level well-being outcomes (Bernstein et al., 2017). Therefore, to enrich the nomological network of bonding social capital further, the present research proposes that bonding social capital may be a valuable social resource that can alleviate employees’ day-level emotional exhaustion.

There is good reason to believe that HIWS may enhance bonding social capital among employees although an alternate view is also viable. Given that involvement implies moving away from standardization and enhancing the discretion of workers in work processes, HIWS may invoke inter-worker conflict due to disagreements about priorities and/or how to achieve goals (Boxall et al., 2019), which can undermine bonding social capital. Nevertheless, there are equal if not more compelling reasons for why HIWS might enhance bonding social capital among employees. Researchers have purported that HPWP (of which many practices mirror those of HIWS) enhance the social structure of work (Evans & Davis, 2005) and build relationships between employees (Vogus, 2006), making the development of bonding social capital more likely. For instance, Vogus (2006) argued that HPWP contribute to high quality interactions by signalling to employees the importance of relationships. For example, training practices provide an opportunity for employees to closely interact and to develop a shared understanding of how to perform work tasks. In a similar vein, participation and information sharing provide the context for enhanced communication while reward practices should be aligned with recognizing employees for their task discretion and achieving organizational goals on an individual and collective level, i.e. in teams (Boxall & Macky, 2009). Therefore, according to Vogus (2006, p.

166), these practices “create a climate conducive to richer interactions” in the organizational context. HIWS are therefore likely to create the conditions for employees to take the time to form trusting and cooperative relations with one another, i.e. enhance the potential for bonding social capital to develop. In a similar vein, Evans and Davis (2005) purport in their conceptual model that many involvement-oriented practices are imperative to an organization’s social structure, including the development of bridging ties, norms of reciprocity, shared mental models, role making and organizational citizenship behavior.

This leads us to believe that, through signalling, and social structure mechanisms, HIWS might enable employees to experience more cooperative, trusting and supportive relationships among their peers, thereby culminating in enhanced bonding social capital. In this instance and in accordance with the JD-R model (Bakker & Demerouti, 2018), the organizational level resource of HIWS can lead to the individual level job resource of perceived bonding social capital. Thus, we propose that the general-level HIWS are positively related to day-level bonding social capital, which in turn is negatively related to day-level emotional exhaustion.

*Hypothesis 3: Day-level bonding social capital mediates the negative relationship between general-level HIWS and day-level emotional exhaustion.*

#### **2.4 | The moderating role of general-level engaging leadership**

While HIWS are proposed to affect employees’ perceptions of day-level emotional exhaustion via work pressure and bonding social capital, the impact of HIWS on these outcomes may be subject to contextual influences (Boxall et al., 2019; Peccei et al., 2013). In this study, we focus on the contextual influence of leadership since supervisors play a significant role in implementing HIWS (Purcell & Hutchinson, 2007) yet studies that examine leadership styles in the context of HIWS-outcome relationships are scarce (Leroy et al., 2018). Purcell and Hutchinson

(2007) argue that HR practices and supervisors' behavior are two crucial elements of an HRM system. Similarly, Wright and Nishii (2013) summarized three-levels of HRM, i.e. the intended HR at organizational level, the actual HR practices implemented by line managers, and the perceived HR by employees. Research suggests that the 'actual HR' implemented by line managers is critical given that line managers interact with employees regularly and directly influence their experience, attitudes and subsequent outcomes (Fu et al., 2020). For instance, as regards the practice of training and development, it is usually the line managers who assess the needs of employees and inform them about (and allow them to attend) the relevant training and development opportunities. As a result, employees' skills are enhanced, which leads to high level of motivation and performance.

Engaging leadership which emphasizes *strengthening, connecting, inspiring, and facilitating (empowering)* behaviors, is a relatively new leadership style geared toward improving employee well-being, and we believe it shares the common foundation of line manager HRM implementation. The central tenet of engaging leadership, which is rooted in self-determination theory, is that when employees' supervisors *inspire* them (through entrusting them with their vision and mission and making them feel like they contribute to it), *strengthen* them (through delegating challenging tasks and encouraging employees to use their strengths), *connect* them (through encouraging interpersonal bonding and a team spirit), and *facilitate (empower)* them (through granting responsibility and freedom and encouraging employees to voice their opinions), their basic psychological needs of autonomy, competence, relatedness and meaningfulness, will be satisfied (Rahmadani et al., 2019). This leadership style further recognizes that, when these needs are satisfied, employees are more likely to experience higher levels of engagement and lower

levels of burnout. Recent research indeed showed that engaging leadership satisfies employees' basic psychological needs, thereby increasing their engagement (Rahmadani et al., 2020).

Given that HIWS also strive to satisfy these psychological needs, which can protect against strain (Butts et al., 2009), and because supervisors are responsible for implementing and managing HIWS (Purcell & Hutchinson, 2007), we purport that HIWS and engaging leadership are complementary resources, i.e., engaging leadership and HIWS are both likely to reinforce and depend on each other. In advancing this view, we draw on the aforementioned 'actual HR' perspective as well as Leroy et al.'s (2018) notion of 'supplementary fit', whereby leadership and HIWS need to be in sync in order to positively influence employee outcomes. It follows that any effects of HIWS on outcomes thus might depend on the perceived level of engagement by the direct supervisor/manager. For example, through their perceptions of HIWS, employees are likely to perceive greater decision latitude (e.g., to adjust to their demands including work pressure) and these perceptions might be further strengthened in the presence of high levels of *strengthening* and *empowering* leadership behaviors. Similarly, through HIWS, employees might feel a long term/social exchange relationship with their organization and its constituents (Evans & Davis, 2005), although the supervisor is likely to play an important role in making this happen. They can do so by *inspiring* their subordinates, thus creating a stronger social bond with the organization and its mission, and by *connecting* employees, thereby reaffirming the value of social relationships and providing the platform for them to develop. Therefore, in this paper, we propose that HIWS and engaging leadership interact in their cross-level impact on day-level work pressure and day-level bonding social capital such that the effects will be stronger under high rather than low levels of engaging leadership.

*Hypothesis 4: The negative relationship between general-level HIWS and day-level work pressure is stronger under high rather than low levels of general-level engaging leadership.*

*Hypothesis 5: The positive relationship between general-level HIWS and day-level bonding social capital is stronger under high rather than low levels of general-level engaging leadership.*

Schaufeli (2015) highlights that line managers play an instrumental role in managing the job demands and resources of employees, with an engaging leadership style likely to reduce the former and increase the latter. At the same time, HIWS can function as an organizational resource that can play an important role in reducing emotional exhaustion via curbing demands and increasing resources, as argued above (e.g. Boxall et al., 2019). As such, and in recognizing that HIWS and engaging leadership are complementary resources (Salas-Valina et al., 2020), this leads us to propose that engaging leadership will moderate the mediating effect of work pressure and bonding social capital in the relationship between HIWS and emotional exhaustion, such that the mediation effect will be stronger when employees perceive that they have a more engaging leader. This gives rise to our final hypotheses, for which the complete model is depicted in Figure 1.

*Hypothesis 6: The negative relationship between general-level HIWS and day-level emotional exhaustion via day-level work pressure is stronger under high rather than low levels of general-level engaging leadership.*

*Hypothesis 7: The negative relationship between general-level HIWS and day-level emotional exhaustion via increased bonding social capital is stronger under high rather than low levels of general-level engaging leadership.*

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Insert Figure 1 about here  
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### **3 | METHOD**

#### **3.1 | Participants and procedure**

Upon providing their informed consent, participants from both manufacturing and support functions of a Pharmaceutical Company located in Ireland completed a general survey prior to the start of the survey week and a daily survey at the end of their shift/day during the survey week. The daily surveys were administered in person by a member of the research team to employees towards the end of each shift/day to ensure that responses were based on that particular day, requesting that the completed surveys are left in a collection box before going home.

In total, 97 employees (51% male) out of 345 employees completed the full study including the general survey and each of the five diary surveys (response rate of 28%). These employees therefore formed the sample for this study. Among these participants, 17% had worked for the organization for less than one year; 23% between 1 and 3 years, 21% between 4 and 8 years, 35% between 9 and 15 years and 4% for more than 15 years. While 37% of participants worked shifts (early, late, and nights), 63% worked days (i.e., Monday to Friday). 62% of respondents were members of the operating team (i.e. packaging, manufacturing, warehouse) while the remaining 38% were members of the wider support team (e.g., engineers, quality control, support, and supply chain). 51% of respondents were at Plant 1 while 49% were at Plant 2.

#### **3.2 | General survey**

In the general baseline survey, participants provided demographic information and rated their perceptions of HIWS and engaging leadership on a 5-point rating scale from 1 (strongly disagree) to 5 (strongly agree).

**General level of HIWS.** We adopted 18 items from the high involvement climate scale of Riordan, Vandenberg and Richardson (2005) which were developed on the basis of the HIWS scale of Vandenberg et al. (1999). Indeed, the measure of Riordan et al. (2005) is an abbreviated version of Vandenberg et al.'s (1999) scale which is considered the gold standard for measuring HIWS (Boxall et al., 2019). Four involvement HR practices were measured, including training, participation, information sharing and performance-based rewards. For training, four items were used. A sample item was: "I receive sufficient training to do my job". For participation, three items were used. A sample item was: "I have enough input in deciding how to accomplish my work". For information sharing, six items were used. A sample item was: "Most of the time I receive sufficient notice of changes affecting my work group". For performance-based rewards, five items were used. A sample item was: "Generally, I feel this company rewards employees who make an extra effort". The Cronbach's alphas were .70 for training, .78 for participation, .71 for communication, and .83 for performance-based rewards. A second order confirmatory factor analysis (CFA) with all items loaded on the respective HR practices showed a good model fit ( $\chi^2/df = 189.27/127 = 1.49$ ,  $p < .001$ ; CFI = .91; RMSEA = .07 with 95% confidence interval (CI) between .05 and .09; SRMR = .07). Model fit indices are to be explained in the Analyses Strategy subsection. Consistent with existing research, we used an HIWS index via the mean of these HR practices.

**General level of engaging leadership.** We used the 12 item Engaging Leadership Scale (Schaufeli, 2021) which assesses four aspects of engaging leadership with three items each;

strengthening, connecting, empowering, and inspiring. A sample item is: “My supervisor delegates tasks and responsibilities to team members” (strengthening). Cronbach’s alpha was .94.

**General level of control variables.** Individual and work characteristics were controlled for at the between-person level as they may influence individuals experience of day-level emotional exhaustion (see Cullinane et al., 2017). Age was measured using three categories (1 = 16 to 24 years old, 2 = 25 to 44 years old, and 3 = 45 to 64 years old). Gender was measured by a binary variable (1 = female, 0 = male). Tenure was measured using five categories (1 = less than one year; 2 = between 1 and 3 years, 3 = between 4 and 8 years, 4 = between 9 and 15 years, and 5 = more than 15 years). Work type (1 = shift worker, 0 = day worker), function (1 = operations, 0 = support) and location (0 = Plant 1, 1 = Plant 2) were treated as dummy variables in the analysis. Table 1 provides an overview of the sample profile.

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Insert Table 1 about here  
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### 3.3 | Daily diary survey

The daily survey measured levels of work pressure, bonding social capital and emotional exhaustion on a specific day and therefore the scales were adjusted for daily measurement, e.g., using “today” as the reference at the beginning of items (please see below for examples). All day-level measures were rated on a 5-point rating scale from 1 (strongly disagree) to 5 (strongly agree).

**Day-level work pressure.** Three items were adopted from Mullarkey et al. (1995) to measure the day-level work pressure. A sample item is: “Today, I was under constant pressure at work”. Cronbach’s alphas ranged from .61 to .77 depending on the day.

***Day-level bonding social capital.*** Four items measured day-level bonding social capital (Carmeli et al., 2009). A sample item is: “Today, I could count on my colleagues at work”. Cronbach’s alpha ranged from .73 to .83 depending on the day.

***Day-level emotional exhaustion.*** Five items from the MBI-GS were used to measure day-level emotional exhaustion (Maslach et al., 1996). A sample item is: “Today, working all day was a real strain for me”. Cronbach’s alpha ranged from .85 to .87 depending on the day.

### **3.4 | Analyses strategy**

The first step of the analytic strategy involved performing confirmatory factor analysis (CFA) to assess the construct validity of all studied variables and to rule out the potential threat of common method bias. To address the potential concern of common method bias, we followed a number of recommendations by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) and Podsakoff, MacKenzie, and Podsakoff (2012). For example, during the survey design, we tested, revised, and retested the surveys among a group of participants in the sample organization to improve the face validity. During the survey distribution, we ensured our participants that the survey was confidential. In the research design, we asked participants to firstly fill in a general survey to measure the independent variable (general level HIWS) and moderator (general level engaging leadership); and then the daily surveys to measure the mediators and dependent variables. Such design of collecting data from different time points helped to reduce the common method bias. Lastly, in the analysis, we conducted a series of CFAs to examine the construct validity and compared it to a few alternative measurement models to check if common method bias is a concern.

During the CFA, for HIWS, we averaged the items into their respective HR practices (e.g. training, participation, information-sharing and performance-based rewards) and treated these HR

practices as separate indicators of HIWS in our CFA analyses. This is consistent with how existing studies treat higher order constructs (e.g. Zhang & Bartol, 2010).

We followed Hu and Bentler's (1999) fit criteria to assess the overall fit of the structural models; recommending cut-off values of .95 for the CFI, a cut-off value close to 0.06 for the RMSEA and a cut-off value close to 0.08 for the SRMR. The diary research design led to our data set to have a hierarchical structure where days were nested within persons. Thus, we used multilevel structural equation modelling (MSEM, Preacher, Zyphur, & Zhang, 2010) for analyzing the data using Mplus 8.3 (Muthen & Muthen, 2017). According to LoPilato and Vandenberg (2015, p. 293), the majority of multi-level research "has concerned itself with the effects of macro-level constructs on micro-level constructs (Kozlowski & Klein, 2000)" via "the cross-level direct effect and the cross-level interaction". In relation to the cross-level direct effect, theoretically researchers can hypothesize the impact of a higher-level construct on lower-level outcomes (James & Jones, 1974; Kozlowski, & Klein, 2000; Mathieu & Chen, 2011; Meyer, Dalal, & Hermida, 2010), as shown in this study about the impact of general-level HIWS (Level 2) on employee day-level outcomes (Level 1). However, such a "theoretical cross-level direct effect is different from the statistical direct effect" (LoPilato and Vandenberg, 2015: 301). Statistically, the cross-level direct effect indicates the effect of Level 2 variables on the group means of Level 1 variables (Bliese, Maltarich & Hendricks, 2018; LoPilato & Vandenberg, 2015).

The cross-level direct effect can only be tested when there is strong within-group agreement in the dependent Level 1 variables so that the group mean can truly represent the varied responses nested in the structure. In our study, the Level 2 variable (general-level HPWS) was hypothesized to influence Level 1 variables (daily-level work pressure, bonding capital and emotional exhaustion). Statistically, we followed the suggestions from Bliese et al. (2018) and LoPilato and

Vandenberg (2015). Firstly, we examined the inter-rater agreement for Level 1 variables. Inter-rater agreement was assessed using *Rwg* (James, Demaree, & Wolf, 1984, 1993). The mean/median of *Rwgs* were .89/.94 for day-level work pressure, .94/.97 for day-level bonding capital, and .93/.97 for day-level emotional exhaustion, which are well above the recommended cut-off of .60 (James, 1982) and the more commonly acceptable value of .70. With the high inter-rater agreement in Level 1 variables, we could proceed with the model test. We followed the recommendations of Bliese, Maltarich and Hendricks (2018) by grand-mean centering all Level 2 variables (general-level HPWS, general-level engaging leadership and all control variables at Level 2). We then calculated the interaction between general-level HPWS and general-level engaging leadership before proceeding to the analysis.

#### 4 | RESULTS

Table 2 depicts the results of the CFA analysis. Our hypothesized five factor model yielded a good fit to the data  $\chi^2/df = 226.17/154 = 1.47, p < .001$ ; CFI = .96; RMSEA = .03 with 90% confidence interval (CI) between .02 and .04; SRMR = .03 (within) and .06 (between). A few other measurement models were run and compared to this proposed measurement model as shown in Table 2. Overall, all alternative models had a worse model fit than the proposed five-factor model. Table 3 presents the descriptive statistics such as the means, standard deviations, and correlations between the studied variables. Table 4 presents the results from the multilevel SEM (Preacher et al., 2010).

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Insert Tables 2, 3 and 4 about here  
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Hypothesis 1 proposed that general-level HIWS would be negatively related to day-level emotional exhaustion; the relationship was negative and significant ( $B = -.52, p < .001$ , Model 1 in Table 4). When interpreting the cross-level direct effect result, researchers need to be mindful as there is a difference between the theoretical development and statistical results on the effect (Bliese, Maltarich & Hendricks, 2018; LoPilato & Vandenberg, 2015). Such results reveal that general-level HIWS reduced the mean of day-level emotional exhaustion. With theoretical and statistical support, hypothesis 1 was supported. This also applies to other hypotheses involving the relationships between Level 2 variables and Level 1 variables.

Hypothesis 2 proposed that day-level work pressure would mediate the relationship between general-level HIWS and day-level emotional exhaustion. As shown in Table 4 (Model 2), the coefficient of general-level HIWS on day-level work pressure was negative and significant ( $B = -.33, p < .05$ ). Day-level work pressure was positively associated with day-level emotional exhaustion ( $B = .35, p < .001$ ). The indirect effect was calculated as  $-.11 (p < .05)$ . In order to test for the mediating effect, this study followed the recommendations from Cheung and Lau (2008), MacKinnon et al. (2002), and MacKinnon et al. (2004) by using bootstrapping confidence intervals. The 90% bootstrapping confidence interval was between  $-.20$  and  $-.03$  which did not include 0. Therefore, hypothesis 2 was supported.

Hypothesis 3 proposed that day-level bonding social capital would mediate the relationship between general-level HIWS and day-level emotional exhaustion. There were significant relationships between general-level HIWS and day-level bonding social capital ( $B = .28, p < .01$ ) as well as between day-level bonding social capital and day-level emotional exhaustion ( $B = -.21, p < .001$ ). The indirect effect was calculated as  $-.06 (p < .05)$  with 90% bootstrapping confidence intervals between  $-.10$  and  $-.02$  which does not include 0. Therefore, hypothesis 3 is supported.

Hypothesis 4 proposed that the negative relationship between general-level HIWS and day-level work pressure would be stronger under high rather than low levels of general-level engaging leadership. As shown in Table 4, the interaction term between general-level HIWS and general-level engaging leadership was significant ( $B = -.32, p < .05$ ). As can be seen from the interaction plot chart (Figure 2), the slope of day-level work pressure on general-level HIWS was negative at high level of general-level engaging leadership while relatively flat at the low level of general-level engaging leadership. Simple slope analysis results provided support for this. At high level of general-level engaging leadership (+SD above the mean), the slope of day-level work pressure on general-level HIWS was  $-.71 (p < .001)$ . At low level of general-level engaging leadership (-SD below the mean), the slope of general-level HIWS on day-level work pressure was  $.01 (n.s.)$ . Therefore, general-level engaging leadership moderated the negative link between general-level HIWS and day-level work pressure such that the link was stronger under high rather than low level of general-level engaging leadership, thereby supporting hypothesis 4.

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Insert Figures 2 and 3 about here  
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Hypothesis 5 proposed that the positive relationship between general-level HIWS and day-level bonding social capital would be stronger under high rather than low levels of general-level engaging leadership. Following the same approach as above, the interaction term between general-level HIWS and general-level engaging leadership was significant ( $B = .24, p < .05$ ). The plot is provided in Figure 3. Simple slope analysis results revealed that the slope of the relationship between general-level HIWS and day-level bonding social capital was  $.51 (p < .001)$  at high levels of general-level engaging leadership. At low levels of general-level engaging leadership, the slope

of day-level bonding social capital on general-level HIWS was .01 (*n.s.*). Therefore, general-level engaging leadership moderated the positive link between general-level HIWS and day-level bonding social capital such that the link was stronger under high rather than low levels of general-level engaging leadership. Therefore, hypothesis 5 was supported.

Hypothesis 6 and 7 proposed that the negative relationship between general-level HIWS and day-level emotional exhaustion via day-level work pressure (H6) and day-level bonding social capital (H7) would be stronger under high rather than low levels of general-level engaging leadership. This hypothesis suggested a moderated mediation model (Preacher et al., 2007), which requires the model to meet the mediation (independent variable to dependent variable via the mediator), moderation (independent variable to mediator moderated by the moderator in our model), and the different conditional indirect effect (independent variable to dependent variable via the mediator, across low and high levels of the moderator). The last condition is the essence of a moderated mediation model as it decides whether the strength of the mediation effect differs across low and high levels of the moderator (Preacher et al., 2007). We used the Preacher et al.'s (2007) approach to assess the moderated mediation effect for work pressure which was  $-.23$  ( $p < .01$ ) with 90% confidence interval between  $-.35$  and  $-.12$  which does not cover 0. The same approach was adopted to assess moderated mediation for bonding social capital which was  $-.10$  ( $p = .01$ ) with 90% confidence interval between  $-.16$  and  $-.04$  which did not cover 0. As all the aforementioned conditions were satisfied, hypotheses 6 and 7 were supported.

## **5 | DISCUSSION**

The aim of this study was to investigate how, why and when HIWS influence employee the well-being outcome of emotional exhaustion. The findings revealed that general-level HIWS directly and indirectly reduced employees' day-level emotional exhaustion through reducing their

day-level work pressure and increasing their day-level bonding social capital. An important caveat is that these relationships are not universal but contingent. Indeed, the results revealed that the relationships between general-level HIWS with day-level bonding social capital (positive), and day-level work pressure (negative), were enhanced under high level of engaging leadership. The findings make a significant contribution to the literature in the following ways.

### **5.1 | Scholarly implications**

By focusing on the mediators between HIWS and employee emotional exhaustion, this study contributes to better understanding how HRM practices directly and indirectly influence employee well-being. Previous research has shown that HIWS can alleviate emotional exhaustion directly (Castanheira & Chambel, 2010; Kilroy et al., 2016). However, the underlying processes through which HIWS influence employee well-being are not fully understood.

By finding the direct and positive impact of HIWS on employee well-being, this study provides further support for an optimistic perspective (Peccei, 2004), and in particular demonstrates the important role of HIWS as a protective organizational resource against day-level emotional exhaustion. Based on the notion that work pressure (job demand) and bonding social capital (job resource) simultaneously also mediate the relationship between HIWS and employee well-being in an integrated model, our understanding of why HIWS work in transmitting their effects, is enriched. Indeed, our study further opens the ‘black box’ between HIWS and emotional exhaustion by adding to previous studies which found resources such as procedural justice and autonomy (Castanheira & Chambel, 2010; Kroon et al., 2009) and demands such as emotional demands, role overload and role conflict (Castanheira & Chambel, 2010; Kilroy et al., 2016) to partially mediate this link.

Furthermore, our study represents a contribution to the HRM-well-being research by exploring the conditional effect of HIWS on employee job demands and resources. The introduction of the novel construct of engaging leadership, as a contextual factor, helps to extend the HRM-well-being research by involving the line managers. Line managers play a key role in implementing and enabling HRM practices to function among employees. In fact, our findings suggest that the relationships between HIWS with both bonding social capital and work pressure were strengthened in the presence of high level of engaging leadership and cancelled out completely when engaging leadership was low. The overall moderated mediation model was significant indicating that the mediating role of work pressure and bonding social capital was only significant in the presence of engaging leadership. This is probably because line managers are the ones who are closer to the scheduling, organizing and allocation of resources and demands to employees (Schaufeli, 2015) making their input paramount in conjunction with more formal organizational practices. These findings challenge the notion that HIWS can universally alleviate emotional exhaustion via job demands and job resources. More specifically, while the HIWS approach to workforce management (compared with its companion approach of HPWP) does tend to produce positive well-being effects consistent with an optimistic or ‘high road’ approach (Boxall & Macky, 2009), this optimistic perspective may depend on line managers’ leadership behavior. Indeed, an engaging leader who *inspires, strengthens, connects* and *empowers* employees, ensures that employees can better avail of, and create the conditions necessary for, HIWS to exert their influence on work pressure and bonding social capital thereby alleviating emotional exhaustion.

Lastly, capturing well-being outcomes like emotional exhaustion by using a diary approach (assessing it across a number of days) has important methodological and theoretical advantages. It has been increasingly recognized that employee experiences such as work pressure, social

interactions and well-being can fluctuate from day to day. This is the reason (e.g. day level variations) why diary methods have been increasingly used in industrial/organizational psychology and especially in the areas of health and stress (e.g. Sonnentag & Niessen, 2008) and social interactions (Tschan et al., 2005). As indicated by Ohly et al. (2010, p. 80), “diary methods allow “for the study of thoughts, feelings and behaviors within the natural work context”. Relatedly, by testing the relationship between bonding social capital and emotional exhaustion (and other relationships e.g. HIWS and work pressure/emotional exhaustion) by using this diary design, it allows for a more accurate test of the relationship involved more generally due to the reduction in retrospective bias that occurs when using cross-sectional or longitudinal studies (Ohly et al., 2010). Due to retrospective bias, the validity of general survey measures is threatened, a problem which is partly avoided when constructs are filled in via questionnaire close to the actual experience and on multiple occasions. Thus, the mixed general and diary study approach enables the relationship between HIWS and emotional exhaustion to be tested in a more robust and accurate manner because of the reduced elapsed time between the experience of emotional exhaustion and the account of the experience (Ohly et al., 2010). Moreover, the credence and utility of HIWS in improving well-being is further illuminated making apparent that HIWS may reduce the possibility that day-level emotional exhaustion transpires into a more problematic and enduring issue.

## **5.2 | Practical implications**

Our findings suggest that soft HR approaches, especially the HIWS approach, offer clear benefits for employee well-being and thus represent a worthwhile investment for HR professionals and practicing managers. The study also provides insights for managers about how HIWS exert their effects. Given the importance of positive social relationships in the workplace and the

detrimental consequences of work pressure, managers should not only use HIWS but also take action to further cultivate positive social relations and lower work pressure.

Example strategies for the former include team away-days and more informal meeting interaction while for the latter more attention could be paid to job design and opportunities for recovery on the job as well as outside the job. However, of particular interest to practicing managers is that if they want employees to positively perceive HIWS, they cannot ignore the importance of line manager implementation of HIWS and in particular the style and type of leadership that they display. The finding that the interaction between HIWS and engaging leadership builds bonding social capital and reduces work pressure at the day-level informs practitioners that organization should not only design HR practices that focus on involving employees. It is vital to have supervisors or line managers that are engaging towards employees via strengthening, connecting, empowering, and inspiring behaviors. In other words, organizations need to train and develop line managers to demonstrate engaging behaviors with their followers to strengthen the impact of HIWS on their well-being.

### **5.3 | Limitations and directions for future research**

There are a number of limitations associated with this study. First, the relatively small sample size and in particular the number of days used in this diary aspect of the study was modest. This may have resulted in a lower level of statistical power and in particular a less than desired assessment of fluctuations in work pressure, bonding social capital and emotional exhaustion. According to Maas and Hox (2005), it is at this higher level (e.g. between person) where biased estimates can be obtained should the sample size be below this threshold (50) while the lower level (within person) sample size do not, to the same extent, influence the accuracy of the estimates. Our sample size at level 2 was 97, which was greater than the threshold of 50 as recommended by Maas

and Hox (2005). It was also comparable with existing diary studies (e.g. 45 in Xanthopoulou et al., 2009). Nonetheless, the relatively small sample size may limit the generalizability of this study. We recommend future research to assess the research model using a larger sample and over a period of time longer than a week as in the present study to verify the results. At the same time, future research might also include general-level measures of all focal variables in the proposed model (e.g. bonding social capital and work pressure) in order to establish construct validity and address potential endogeneity issues.

Second, a limitation of the study pertains to the study design. The study is correlational in nature (notwithstanding the fact that data were collected for 5 days in a row) and this ensures that caution needs to be exercised when interpreting causality. Separating out the variables across a greater time lag would enable a more robust determination of the relationships proposed in this model. Due to the relatively small sample size, one limitation in the analysis was that this study was not able to examine the temporal aspect of the daily measures (e.g., work pressure day 1, work pressure day 2, etc.) as well as due to the limitation of software. We encourage future research to overcome these limitations and account for the non-independent covariances<sup>1</sup>.

Finally, this study may be limited by the research context and chosen constructs. In contemporary organizations, employees are often working in teams. The contextual factors in teams such as climate may influence the effect of perceived HRM and leadership on their day-level outcomes. The present study was designed to examine the impact of general-level HIWS and the engaging leadership of line managers on employee day-level outcomes. It did not capture the team structure since members were targeted more generally. In addition, while the optimistic appears dominant in the present study, the industry context and possibility of other boundary

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<sup>1</sup> Thanks are given to one reviewer who raised this important point.

conditions should be acknowledged. Indeed, the pharmaceutical industry is a more favorable context for HIWS since there is a significant emphasis on involvement and improving the decision-making of workers to ensure high quality is built into the process (Bujar et al., 2020). Likewise, there are many other contextual variables such as for example different leadership styles and personal resources, that can determine the extent to which an optimistic or pessimistic perspective could unfold (Kilroy et al., 2020). As such further verification of these results across a broader range of contexts and the inclusion of additional contextual variables is warranted.

## **6 | CONCLUSION**

This study explored the direct and indirect impact of general-level HIWS on daily employee well-being. It aligns with the optimistic perspective, however, extends our understanding by adding an important contextual factor, i.e. engaging leadership. Only when people have engaging leaders who care about their well-being, can HIWS then foster daily employee well-being via reducing daily job demands and developing daily job resources. This study provides invaluable insights on the research on the HRM-well-being link and will lead future research to take more contextual factors into the equation to better understand *how*, *why* and *when* HIWS work and matter.

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## TABLES AND FIGURES

**Table 1. Sample Profile**

Variables	Categories	%	Variables	Categories	%
<i>Age</i>			<i>Gender</i>		
	16-24 years old	4%		Male	51%
	25-44 years old	65%		Female	49%
	45 to 64 years old	31%			
<i>Tenure</i>			<i>Work type</i>		
	less than one year	17%		Shift worker	37%
	1-3 years	23%		Day worker	63%
	4 -8 years	21%			
	9-15 years	35%	<i>Function</i>		
	15 years +	4%		Operations	62%
<i>Location</i>				Support	38%
	Plant 1	52%			
	Plant 2	48%			

**Table 2. Fit Statistics from Multi-level Measurement Model Comparison**

Models	$\chi^2$	<i>df</i>	$\chi^2/df$	<i>CFI</i>	<i>RMSEA</i> [90% <i>CI</i> ]	<i>SRMR</i> <i>within</i>	<i>SRMR</i> <i>between</i>	$\Delta\chi^2$	$\Delta df$
<b>Hypothesized measurement model</b>	<b>226.17</b>	<b>154</b>	<b>1.47</b>	<b>.96</b>	<b>.03</b> [.02, .04]	<b>.03</b>	<b>.06</b>		
Model A <sup>a</sup>	496.50	156	3.18	.83	.07 [.06, .08]	.13	.06	270.33***	2
Model B <sup>b</sup>	332.91	156	2.13	.91	.05 [.04, .06]	.06	.06	106.74***	2
Model C <sup>c</sup>	564.45	156	3.62	.79	.07 [.06, .08]	.11	.06	320.28***	2
Model D <sup>d</sup>	248.34	155	1.60	.95	.04 [.03, .05]	.03	.06	22.17***	1
Model E <sup>e</sup> (Harman's Single Factor Test)	697.30	158	4.41	.73	.08 [.07, .09]	.12	.06	471.13***	4

Notes: N= 493 at within-person level (listwise); = 97 at between-person level (listwise). \*\*\* $p < .001$ ;  $\chi^2$ =chi-square discrepancy, *df*=degrees of freedom; *CFI*=Comparative Fit Index; *CI* = confidence interval; *RMSEA*=Root Mean Square Error of Approximation; *SRMR*= Standardized Root Mean Square Residual;  $\Delta\chi^2$  = difference in chi-square,  $\Delta df$ = difference in degrees of freedom. In all measurement models, error terms were free to covary to improve fit and help reduce bias in the estimated parameter values. All models are compared to the full measurement model.

<sup>a</sup> = Work pressure and bonding social capital at day-level combined into a single factor.

<sup>b</sup> = Work pressure and emotional exhaustion at day-level combined into a single factor.

<sup>c</sup> = Bonding social capital and emotional exhaustion at day-level combined into one factor.

<sup>d</sup> = HIWS and engaging leadership at general-level combined into one factor.

<sup>e</sup> = Work pressure, bonding social capital, and emotional exhaustion at day-level combined into a single factor; HIWS and engaging leadership at general-level combined into one factor.

**Table 3. Descriptive Statistics and Correlations of Study Variables**

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
<i>Between-person level (Level 2)</i>												
1. HIWS	3.47	.49										
2. Engaging leadership	3.77	.65	.61**									
3. Age <sup>a</sup>	2.26	.53	-.07	-.11*								
4. Gender <sup>b</sup>	.49	.50	-.04	.02	-.05							
5. Tenure <sup>c</sup>	2.88	1.19	-.07	-.26**	.37**	-.01						
6. Work type <sup>d</sup>	.35	.48	-.12**	-.15**	.01	.12**	.03					
7. Function <sup>e</sup>	.61	.49	-.27**	-.37**	.19**	.10*	.32**	.54**				
8. Location <sup>f</sup>	.43	.50	-.02	-.08	.17**	-.01	-.02	.52**	.30**			
<i>Within-person level (Level 1)</i>												
9. Emotional exhaustion	2.65	.76	-.34**	-.30**	.09*	.05	.15**	.02	.11*	.01		
10. Work pressure	2.96	.78	-.16**	-.02	.07	-.02	-.01	-.06	-.12**	-.08	.44**	
11. Bonding social capital	3.81	.60	.19**	.12**	-.11*	.03	-.12**	.01	.03	-.15**	-.18**	-.11*

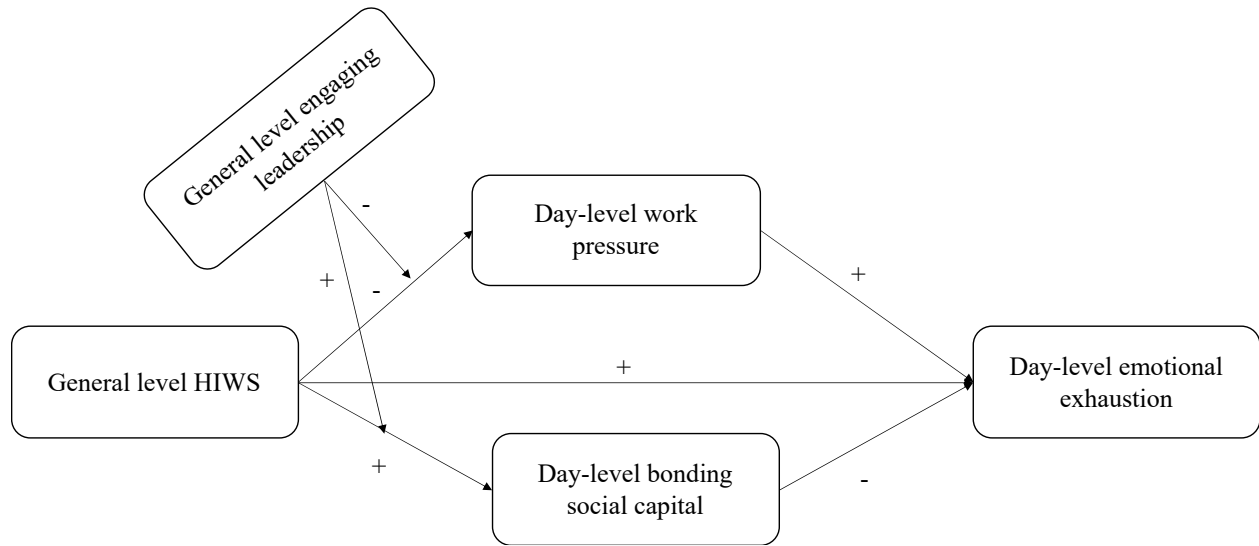
Note: The between-person level (Level 2) variables were disaggregated before calculating within-person level (Level 1) correlations. N= 475 at within-person level (listwise); = 92 at between-person level (listwise). The reduced sample size at Level 2 from the full sample n = 97 to 92 was due to the fact that five participants did not fill in the tenure information. <sup>a</sup> Age was coded as: 1=16-24 years old, 2=25-44 years old, and 3=45-64 years old. <sup>b</sup> Gender was coded as: 0=male and 1=female. <sup>c</sup> Tenure was coded as: 1= less than 1 year, 2=1-3 years, 3=4-8 years, 4=9-15 years, and 5 = more than 15 years. <sup>d</sup> Work type was coded as: 0 = day worker and 1 = shift worker (night). <sup>e</sup> Function was coded as: 0 = support and 1 = operations. <sup>f</sup> Location was coded as: 0 = Plant 1 and 1 = Plant 2. \*\*  $p < .01$ , \* $p < .05$  (two-tailed tests).

**Table 4. Results of MSEM**

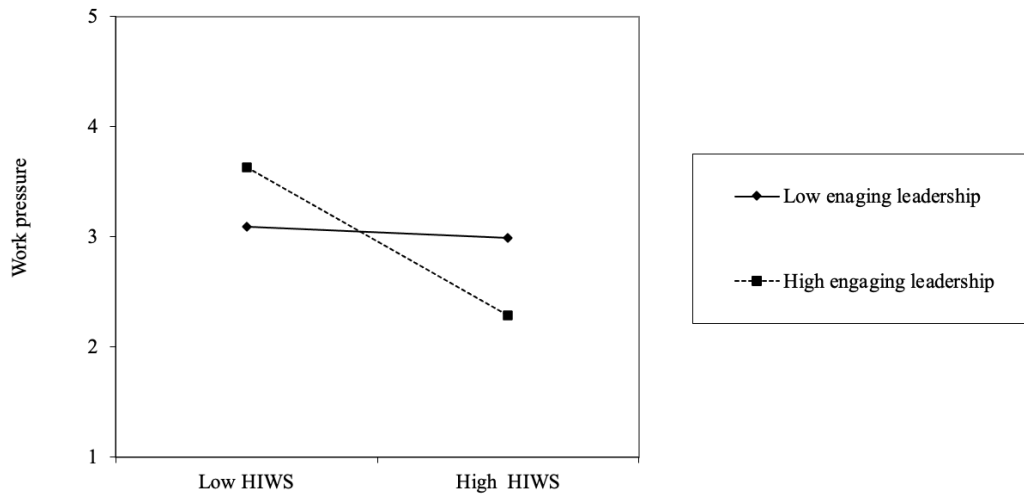
Variables	Model 1	Model 2			Model 3		
	Emotional Exhaustion	Work pressure	Bonding social capital	Emotional exhaustion	Work pressure	Bonding social capital	Emotional exhaustion
<i>Between-person level (Level 2)</i>							
<i>Control variables</i>							
Age <sup>a</sup>	.03(.14)	.17(.13)	-.04(.11)	.04(.15)	.19(.13)	-.06(.11)	.04(.15)
Gender <sup>b</sup>	.07(.13)	-.03(.13)	.00(.10)	.09(.06)	.01(.13)	-.03(.10)	.08(.13)
Tenure <sup>c</sup>	.09(.06)	-.00(.06)	-.08(.04)	.07(.13)	-.01(.07)	-.07(.04)	.07(.06)
Work type <sup>d</sup>	-.04(.20)	.14(.18)	.09(.13)	-.04(.20)	.10(.16)	.11(.12)	-.03(.20)
Function <sup>e</sup>	-.05(.16)	.35(.15)*	.22(.13)	-.05(.16)	-.36(.16)	.24(.14)	-.08(.16)
Location <sup>f</sup>	.04(.19)	-.14(.15)	-.28(.11)*	.04(.19)	-.10(.15)	-.30(.11)	.03(.18)
<i>Predictors</i>							
HIWS	-.52(.13)***	-.33(.13)*	.28(.09)**	-.52(.13)***	-.36(.15)*	.26(.11)*	-.40(.14)**
<i>Moderator</i>							
Engaging leadership					-.04(.15)	.09(.12)	-.16(.13)
HIWS*Engaging leadership					-.32(.15)*	.24(.10)*	
<i>Within-person level (Level 1)</i>							
<i>Mediators</i>							
Work pressure				.35(.06)***			
Bonding social capital				-.21(.05)***			

Note: N= 475 at within-person level (listwise); = 92 at between-person level (listwise). Unstandardized coefficients were reported with the standard errors in brackets. <sup>a</sup> Age was coded as: 1=16-24 years old, 2=25-44 years old, and 3=45-64 years old. <sup>b</sup> Gender was coded as: 0=male and 1=female. <sup>c</sup> Tenure was coded as: 1= less than 1 year, 2=1-3 years, 3=4-8 years, 4=9-15 years, and 5 = more than 15 years. <sup>d</sup> Work type was coded as: 0 = day worker and 1 = shift worker (night). <sup>e</sup> Function was coded as: 0 = support and 1 = operations. <sup>f</sup> Location was coded as: 0 = Plant 1 and 1 = Plant 2. \*\*  $p < .01$ , \* $p < .05$  (two-tailed tests).

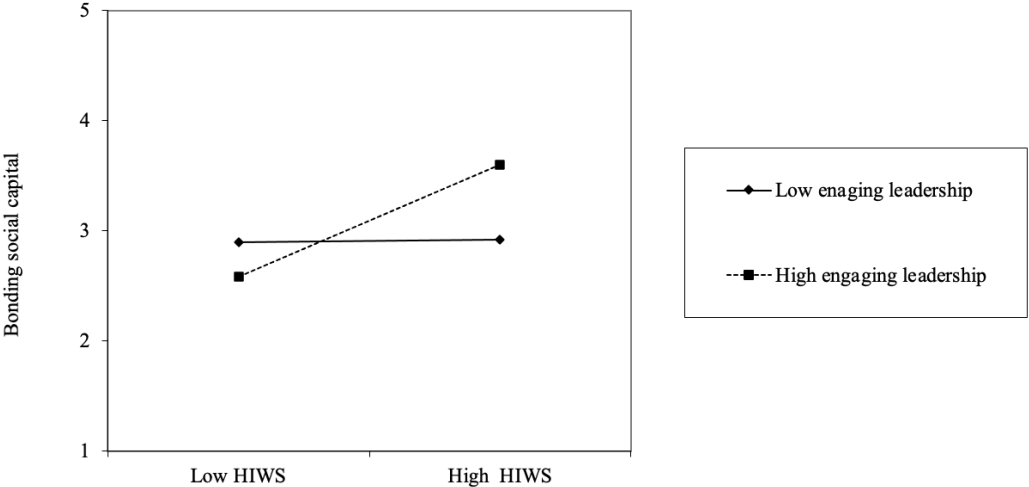
**Figure 1. Research Model with Hypotheses**



**Figure 2. Interaction Plot Between General-Level HIWS and Engaging Leadership on Day-Level Work Pressure**



**Figure 3. Figure 2. Interaction Plot Between General-Level HIWS and Engaging Leadership on Day-level Bonding Social Capital**



## **Appendix: Measurement Scales**

### **High Involvement Work Systems – Riordan et al. (2005)**

I have sufficient authority to fulfil my job responsibilities

I have enough input in deciding how to accomplish my work

I have enough freedom over how I do my job

Company goals and objectives are clearly communicated to employees.

The channels for employee communication with top management are effective

Top management is adequately informed of important issues in my department

Company policies and procedures are clearly communicated to employees

I often have to rely on the grapevine to get job related information

Most of the time I receive sufficient notice of changes affecting my work group

I am satisfied with the amount of recognition I received when I do a good job

Generally, I feel this company rewards employees who make an extra effort

There is a strong link between how well I perform my job and the likelihood of receiving a rise in pay/salary

There is a strong link between how well I perform my job and the likelihood of receiving high performance appraisal ratings

If I perform well, I am more likely to be promoted

I receive sufficient training to do my job

Education and training are integral parts of this company's culture

I have had sufficient/adequate job-related training

If I felt that I needed more job related training, the company would provide it

### **Engaging Leadership – Schaufeli (2021)**

My supervisor encourages team members to develop their talents as much as possible

My supervisor encourages collaboration among team members

My supervisor gives team members enough freedom and responsibility to complete their tasks

My supervisor is able to enthuse team members with his/her plans

My supervisor delegates tasks and responsibilities to team members

My supervisor actively encourages team members to aim for the same goals

My supervisor encourages team members to give their own opinion

My supervisor makes team members feel that they contribute to something important

My supervisor encourages team members to use their own strength

My supervisor recognises ownership of team member's contributions

My supervisor is inspiring

My supervisor promotes team spirit

### **Work Pressure – Mullarkey et al. (1995)**

I found that work piled up faster than I could complete it

I found myself working faster than I would like, in order to complete my work

I was under constant pressure at work

### **Bonding Social Capital – Carmeli et al. (2009)**

I got help from my colleagues at work

My supervisor encouraged collaboration among team members

I felt a sense of caring for each other at work

I could count on my colleagues at work

### **Emotional Exhaustion – Maslach et al. (1996)**

I felt emotionally drained from my work

I felt burned out from my work

I felt used up at the end of the workday

I felt tired when I got up in the morning and had to face another day on the job

Working all day was a real strain for me