Personal resources and personal vulnerability factors at work: An application of the job demands-resources model among teachers at private schools in Peru

Abstract

We examine the role of personal resources (hardiness) and personal vulnerability factors (external locus of control and helplessness) at work, among 430 teachers at private schools. Based on the job demands-resources (JD-R) model and the conservation of resources theory, we parallel tested both motivational and health-impairment processes on the teachers' individual outcomes. The JDR model's motivational process was related to life satisfaction, and the health impairment process to perception of ill health. We hypothesize that hardiness will foster work engagement and that its role in the motivational process will be to mediate between job resources and work engagement. Then, we hypothesize that hardiness will prevent job burnout. Self-evaluations are expected to be activated by job burnout as an effect of its third dimension, inefficacy. We examine the mediational role of these self-evaluations between job burnout and ill health, and between job burnout and life satisfaction. The hypotheses are tested simultaneously using structured equation modelling. The results indicate that hardiness partially mediates the relationship between job resources and work engagement, and that hardiness reduces job burnout. Self-evaluations did not increase perception of ill health, but they did mediate the relationship between job burnout and life satisfaction. The findings show that hardiness plays the role of a personal resource in the motivational process and that it also has a preventive function against job burnout. Personal vulnerability factors, in the form of self-evaluations, were activated by job burnout, and their role was to significantly reduce life satisfaction. We discuss the implications of these findings.

Keywords: work engagement; job burnout; JD-R model; hardiness; personal vulnerability factors; self-evaluations

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Teachers' work engagement has a significant impact not only on their own well-being (Lorente, 2008) and performance (Bakker & Bal, 2010) but also on their students' engagement (Roorda, Koomen, Spilt & Oort, 2011), an important driver of student academic success (Klem & Connell, 2004). By contrast, stress and burnout in teachers have been associated with negative consequences for their health (Melamed, Shirom, Toker, Berliner & Shapira, 2006), including more anger and less enjoyment (Keller, Chang, Becker, Goetz & Frenzel, 2014), and with the use of more reactive and punitive responses that negatively impact the classroom climate and student-teacher relationships, among other negative consequences (Jennings & Greenberg, 2009).

Although school contexts vary across the world, Peruvian teachers face similar challenges as their colleagues in their daily work. Several studies have reported the presence of stress and burnout in the teacher population in Peru (Fernández, 2008, Cuenca & O'Hara, 2006, Yslado, Núñez, Norabuena, 2010). However, the results of the studies on burnout are different, possibly because they are carried out with different populations (urban public schools, rural public schools and both public and private schools). While most of the empirical studies in Peru have focused on teachers who work at public schools, this research intends to gain a better understanding of teachers who work at private schools.

Previous studies indicate that organizational characteristics such as job resources and job demands are antecedents in teachers' motivation and the development of job burnout (Bakker & Bal, 2010; Hakanen, Bakker & Schaufeli, 2006; Lorente, 2008), but the effect of personal characteristics on these two emotional states needs to be studied further given that Schaufeli & Taris (2014) point out that the results of research in this area may vary according to the chosen explanatory framework.

Personal characteristics, such as personal resources or personal vulnerability factors (PVFs) in teachers, may improve understanding of the processes of motivation and strain in the classroom. To study personal resources and PVFs in the workplace, we based our study on job demands-resources (JD-R) theory. This theory provides an open, heuristic model that distinguishes between the antecedents and consequences of motivation and strain at work.

The motivation process is represented by work engagement, "a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption" (Schaufeli, Salanova, González-

Romá & Bakker, 2002, p. 74). Engaged employees display high levels of energy and mental resilience while working (vigor); they are heavily involved in their work and find a sense of meaning in it (dedication); and while their time at work passes quickly because they are fully concentrated and happily engrossed in their work (absorption) (Bakker, Demerouti & Sanz-Vergel, 2014).

By contrast, the strain dimension is ultimately related to job burnout, a personal response to sustained on-the-job stressors that consists of three dimensions: exhaustion, cynicism and inefficacy (Maslach, Schaufeli & Leiter, 2001, p. 397). Although Maslach, Schaufeli & Leiter (2001) cite three dimensions in their definition of burnout, exhaustion and cynicism are generally considered the core dimensions of the syndrome (Schaufeli & Bakker, 2004). Exhaustion alludes to the prolonged state of feeling physically and emotionally depleted by stressors experienced at one's work (Bakker, et al., 2014). Cynicism refers to a negative response intended to distance oneself from or reflect indifference towards work in general, or towards people related to work (Bakker & Schaufeli, 2004). The third dimension, inefficacy, consists of diminished feelings of accomplishment at work. This dimension has been controversial. Some authors do not see inefficacy as a third dimension of burnout but rather as a function of exhaustion, cynicism or even a combination of both dimensions (Maslach et al., 2001, Byrne, 1994, Lee & Ashforth, 1996). More recently, in a longitudinal study, Diestel and Schmidt (2010) find that exhaustion and depersonalization longitudinally predicted accomplishment (inefficacy).

To explain how these opposite states develop and relate in the workplace, Demerouti, Bakker, Nachreiner & Schaufeli (2001) propose the JD-R model. This model distinguishes between two different processes: the motivational process, which is associated with positive organizational and well-being outcomes (Hakanen, Bakker, & Schaufeli, 2006), and the health-impairment (or "energetic") process, which is associated with negative personal outcomes.

The role of personal resources and PVFs, especially the latter, in the JD-R model is still under study (Schaufeli & Taris, 2014). Personal resources are considered aspects of the self that are linked to resilience and "pertain to an individual's sense of his/her ability to successfully control and impact his/her environment, especially during challenging circumstances" (Hobfoll, Johnson, Ennis & Jackson, 2003, p. 632). Based on this definition, resilience and a sense of one's ability to influence one's environment emerge as important personal resources to be studied. In this paper, we focus on hardiness, a psychological characteristic that encompasses both concepts (Alarcon, Eschleman & Bowling, 2009). Although hardiness is regarded as a positive trait associated with resilience and negatively associated with

stressors and strains (Eschleman, Bowling & Alarcon, 2010), its effects on the upward spiral of motivation at work have not been studied with the same rigor. Meanwhile, PVFs have not been integrated into the JD-R model, as observed by Schaufeli & Taris (2014).

In the present research, we study how situational factors, in the form of job demands and job resources; and individual variation, in the form of personal resources and personal vulnerabilities, impact teachers' motivation and strain, as well as the effect these factors have on their well-being (life satisfaction and perception of health). To support this analysis, the study refers to the JD-R model and conservation of resources (COR) theory (Hobfoll, 2002). We hope to contribute to the literature by exploring the impact of the work context on private school teachers in Peru, and thereby elucidating the relationships between their feelings and their well-being at work.

The JD-R model

The JD-R model is a descriptive model characterized by its flexibility, as it can be applied to any work environment. The model distinguishes between two types of job characteristics: job demands and job resources. Job demands refer to "those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs" (Schaufeli & Bakker, 2004). Job resources refer to those functional aspects of a job that concern achieving work goals, reducing job demands and associated individual costs (e.g., exhaustion), and stimulating personal growth and development (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). According to Van den Broeck, Vansteenkiste, Witte & Lens (2008), job resources foster motivation by fulfilling the basic psychological needs of autonomy, relatedness, and competence. This study factors in two job demands that have been associated with psychological strain in teachers across schools: administrative rigidity (Betoret, 2009) and work overload (Hakanen et al., 2006). Job resources are represented by two organizational characteristics: supervisory support (Hakanen et al., 2006; Moreno-Jiménez, Garrosa & González, 2000) and the availability of material resources (Moreno-Jiménez et al., 2000).

The JD-R model assumes that two different processes explain poor health and well-being at work (Bakker et al., 2014). The motivational process predicts well-being at work. This view assumes that job resources are the most important predictors of work engagement, and that work engagement predicts positive organizational outcomes such as a better performance (Schaufeli & Taris, 2014). The present study broadens the motivational process from well-being at work to general well-being by including life

satisfaction as a consequence of work engagement. Life satisfaction refers to the conscious, cognitive, and evaluative judgement that the individual makes regarding the quality of his/her own life (Pavot & Diener, 1993). In a longitudinal three-wave seven-year study on Finnish dentists, Hakanen & Schaufeli (2012) demonstrate that work engagement predicts general well-being in the long-term. We expect teachers who are engaged in their work to report higher levels of life satisfaction.

The health-impairment process explains the strain dimension. The assumption is that high job demands deplete employees' emotional and physical resources, leading to job burnout (Korunka, Kubicek, Schaufeli & Hoonakker, 2009). As Maslach (1993) point out, job demands act as stressors that drain employees' energy, and the individual's attempts to cope with the experience of exhaustion result in mental withdrawal. This process leads to health problems (Schaufeli & Bakker, 2004), turnover intentions (Schaufeli & Bakker, 2004), or decreased performance (Bakker et al., 2014), among other negative consequences. Our research model considers ill health to come as a consequence of job burnout. The reason for this choice lies in the evidence gathered in similar studies on the teacher population (Hakanen et al., 2006).

Motivational process: The role of hardiness as a personal resource

Hardiness consists of three different attitudes: commitment, control, and challenge (Kobasa, 1979). Maddi (2006) conceptualizes hardiness as a cognitive and emotional amalgam that constitutes a learned and growth-oriented personality buffer. Commitment refers to the tendency to commit to the events and people close to oneself, regardless of how stressful a situation involving them may become (Maddi, 2006). As such, committed individuals find meaning and purpose in the events and people they encounter in their daily lives (Kobasa, Maddi & Kahn, 1982). Control refers to the tendency to feel and act as if one has influence over the events surrounding oneself (Kobasa et al., 1982). The last dimension, challenge, is the disposition to perceive obstacles as challenges rather than threats. This dimension is associated with the belief that change is normal in life, and that the anticipation of change constitutes an interesting incentive for growth. Challenge entails receptiveness to change and embracement of variety in life (Kobasa et al., 1982).

People with high levels of hardiness view experiences as interesting and worthwhile (commitment) and subject to their influence (control), which gives them opportunities to learn and grow (challenge) (Bartone, 2015). The three dimensions are conceptually linked, but distinct (Kobasa, 1979). Possession of high levels of hardiness requires all three dimensions. Hardiness should not be considered a

unidimensional phenomenon, although the utility of each component varies depending on the criteria being examined (Eschleman et al., 2010).

To gain a better understanding of the role of hardiness as a personal resource in the motivational process of the JD-R model, we refer to the motivational perspective of the COR theory – a theory that often complements the JD-R model by explaining the underlying mechanisms of the relationship between resources and welfare (Hobfoll, 2002). The basic assumption of this theory posits that individuals will "seek to obtain, retain, and protect resources and that stress occurs when resources are threatened with loss or are lost or when individuals fail to gain resources after substantive resource investment" (Hobfoll, 2002, p. 312). Hobfoll (2002) explains the stress process as resource investment, noting that people invest resources under three different circumstances: to protect themselves from a loss, to recover resources, or to gain more resources. The mechanisms by which the resource gains and losses occur in the organization are explained by the crossover model (Chen, Westman & Hobfoll, 2015).

In our study, we expect personal resources such as hardiness to produce more psychological resilience, and that these resilience will "foster intrinsic motivation in the form of work engagement" (Chen et al., 2015, p.100). This would imply that hardiness in teachers could act as a driver of increased engagement in their work. There is empirical evidence to support the idea that hardiness fosters work engagement. In a cross-sectional study of service members of the International Security and Assistance Force Operation, Lo Blue, Taverniers, Mylle & Euwema (2013) find that hardiness was a positive predictor of the dimensions of work engagement.

Based on the gain cycle of the COR theory, we propose the following hypothesis to test this statement:

Hypothesis 1: Hardiness is positively associated with work engagement.

The COR theory has more implications for the inclusion of personal resources in the JD-R model. According to Hobfoll (2012), people who invest resources must possess not only the personal capacity to do so, but the environmental capacity as well. This implies that both job and personal resources are related and that they could play a role as antecedents in the motivational process. The role of hardiness in this process needs further research, but there is empirical evidence of a positive relationship between hardiness and job resources such as social support (Garrosa, Moreno-Jiménez & Rodríguez-Muñoz & Rodríguez-Carvajal, 2010) and supervisor support (Eschleman & Bowling, 2010).

Moreover, we expect hardiness to follow the same course as similar studies on the role of personal resources in the JD-R model. Xanthopoulou, Bakker, Demerouti, & Schaufeli (2007) find that personal resources, such as self-efficacy, optimism, and organizational-based self-esteem, partially mediated the relationship between job resources and work. Likewise, Vink, Ouweneel, & Le Blanc (2011) find that psychological capital (self-efficacy, optimism, hope, and resilience) also mediated partially between work engagement and the resources of social support, autonomy, supervision, and opportunities for development.

Following on from the JD-R model, the COR theory, and the aforementioned studies, we propose that hardiness explains part of the relationship between job resources and work engagement. Therefore, our second hypothesis is:

Hypothesis 2: Hardiness mediates the relationship between job resources and work engagement.

Health impairment process: The role of personal resources and personal vulnerability factors

We propose that hardiness plays a protective role against job burnout among teachers. According to the COR theory, individuals who acknowledge that they possess more personal resources will be better protected against job burnout. However, the primacy of resource loss present in the health impairment process is not as straight-forward as it may seem, which implies that there must be a powerful resilient response that counteracts or complements the impact of the loss experienced in this process (Hobfoll, 2012). We expect teachers with high levels of hardiness to be able to withstand the negative consequences of stressful situations. There is empirical evidence to support this relationship. In a meta-analysis, Alarcón et al. (2009) find that not only does hardiness have relatively strong negative correlations with the dimensions of job burnout, but that it was also the strongest predictor among all of the personal traits analyzed.

Accordingly, our third hypothesis refers to the preventive role of hardiness in the development of job burnout:

Hypothesis 3: Hardiness is negatively associated with job burnout.

While individual variation may play a protective role, it is also possible that it could act as a vulnerability factor in this process (Bakker & Taris, 2014). Personal vulnerability refers to how some individuals respond to and recover from stressful situations in a deficient or below-average way.

Although personal resources and vulnerability factors are related, they are different constructs. Personal resources act directly on personal development and vulnerabilities act on personal maladjustment. Therefore, a lack of personal resources does not necessarily imply vulnerability.

In the present study, we suggest that personal vulnerabilities in the JD-R model are related to the third dimension of job burnout, inefficacy. There is increasing evidence that inefficacy plays a divergent role (Bakker & Schaufeli, 2004). Shirom (1989) argues that the feeling of inefficacy is a consequence of the core negative emotional experience of the syndrome. Similarly, Diestel and Schmidt (2010) propose that employees who behave cynically obstruct access to external resources, thus making goal achievement increasingly difficult, which very likely will lead to feelings of ineffectiveness. Following this line of research, we propose that burnout syndrome may activate negative evaluations about oneself, which may in turn act as a PVF.

To study these vulnerabilities, we refer to an individual's external locus of control and helplessness given the detrimental effects we expect them to have in the workplace. While an external locus of control may act as a perception of one's lack of control over the work environment, helplessness may act as a perception of one's lack of power in the workplace. And although it may be controversial to propose that an external locus of control is always associated with personal maladjustment, we acknowledge that the individual's locus of control is not manifested in the change per se, but in the development of proactivity, which suggests that failure by the individual to attain the proposed achievement would not have detrimental effects on their adjustment to the environment.

These vulnerabilities are intrapersonal and dispositional effects of the loss of personal resources. We believe that teachers who feel overwhelmed by their workload and the organizational rigidity of their schools will be more susceptible to job burnout, and that this syndrome will both activate the dispositional vulnerabilities and limit the intrapersonal skills of affected individuals by increasing their feelings of inefficacy through self-evaluations of lack of control and power. This leads to our fourth hypothesis:

Hypothesis 4: Job burnout is positively associated with personal vulnerability factors in the form of self-evaluations of external locus of control and helplessness.

To explain the role played by personal vulnerabilities in the JD-R model, we turn to the COR theory, which states "…not only are those who lack resources more vulnerable to resource loss, but that

initial loss begets future loss" (Hobfoll, 2012, p.11). The lack of resources causes individuals to experience loss in a stressful way. In this case, the loss is seen as momentous, and its impact quickens (Hobfoll, 2012, Ennis, Hobfoll, & Schröder, 2000). The emotional impact of the stress experienced eats away at resiliency resources and limits the accumulation of new resources (Schumm, Stines, Hobfoll, & Jackson, 2005).

Following on from the COR theory, we propose that the experience of loss manifest in burnout syndrome may activate teachers' PVFs in the form of self-evaluations of lack of control and lack of power, and that these self-evaluations will have a concurrent impact on their health.

Consequently, our fifth hypothesis is as follows:

Hypothesis 5: Personal vulnerability factors mediate the relationship between job burnout and ill health. There is evidence to show that the experience of burnout at work has an impact on the individual's life in the long term. De Stasio, et al (2017) find that happiness at school significantly reduced the possibility of developing personal burnout among special needs teachers at kindergarten and primary school. In their longitudinal study, Hakanen & Schaufeli (2012) concluded that burnout predicted depressive symptoms, and not vice versa. This finding has some implications for our study. It suggests that teachers who experience burnout will be more given to depression in the future. The feelings of loss and stress felt by the teacher would undermine his/her coping strategies by increasing his/her self-evaluations of inefficacy; "this negative work-related state will spill and generalize into context-free states like depression symptoms and life dissatisfaction" (Hakanen & Schaufeli, 2012, p. 417).

The relationship between the selected PVFs and subjective well-being has also received empirical support. Life satisfaction has been negatively associated with both external locus of control (Judge, Locke, Durham, & Kluger, 1998; Sung-Mook, 1994) and helplessness (Minkov, 2009; van Mierlo, van Heugten, Post, de Kort, & Visser-Meily, 2015).

Therefore, we propose our sixth hypothesis:

Hypothesis 6: Personal vulnerability factors mediate the relationship between job burnout and life satisfaction.

Method

Participants and procedure

The present study included a total of 430 teachers who worked at seven private Peruvian schools in the cities of Lima and Arequipa. The sample population was 67% female with a mean age of 41 years

(ranging from 23 to 71, *SD* = 10.2). The age distribution was as follows: 25% of the teachers were between 23 and 33 years of age, 50% were between 34 and 47 years of age, and 25% were between 48 and 71 years old. The mean organizational tenure was 10.2 years (SD = 9.6), and the mean length of teaching experience was 17.1 years (SD = 10.0). Teachers from primary and secondary schools represented 57% of the sample, primary school teachers constituted 35% of the sample, and teachers who taught at both primary and secondary schools accounted for 8% of the sample. Finally, 80% of the teachers had a permanent employment contract.

We arranged meetings with the directors of 15 private schools in the cities of Lima and Arequipa to explain the aims of the study and to invite them to participate in the research. After the schools informed us of their decision (eight schools agreed to take part), we sent the printed questionnaires, in individual envelopes to ensure the confidentiality of each teacher's response, to the participating schools. Each questionnaire included a letter explaining the aims of the study and inviting the corresponding teacher to participate anonymously in the research. One week later, we collected the forms. The response rate was 71%. Thirteen questionnaires were excluded because of incomplete responses.

Measures

Job resources. We assessed *supervision* and *material resources* using the Teacher Job Burnout Questionnaire (CBP-R, Spanish version) (Moreno-Jiménez, Garrosa, & González, 2000). The two scales were scored on a five-point rating scale from 1 (totally disagree) to 5 (totally agree). The supervision scale consisted of nine items, of which the following is an example: "My superior takes into consideration what I say". Material resources were assessed using a two-item scale (e.g., "*My school provides enough materials for teachers to be effective*").

Job demands. We assessed *work overload* using the Teacher Job Burnout Questionnaire (CBP-R, Spanish version) (Moreno-Jiménez et al., 2000). The scale was scored on a five-point rating scale from 1 (totally disagree) to 5 (totally agree). The work overload scale consisted of four items, of which the following is an example: "*I feel I have extra work beyond what would normally be expected for me*".

We assessed *administrative rigidity* using the Stressor Multilevel Context Scale, Spanish version (Betoret, 2009). This scale consisted of five items rated on a four-point scale from 1 "It does not hinder me at all" to 4 "It hinders me a lot". A sample item from this scale is "*The organizational rigidity of the school and its departments*".

We assessed *work engagement* using the Spanish version of the Utrecht Work Engagement Scale, reduced scale (UWES) (Schaufeli & Bakker, 2003). The scale consisted of 9 items scored on a seven-point scale from 0 (*never*) to 6 (*always*). An example item on this scale is "*When I get up in the morning, I feel like going to work*". We considered work engagement as one dimension. In line with other studies, we conducted an exploratory factor analysis (EFA) following the maximum likelihood estimation method on the nine items, with oblique rotation (oblimin) (Abad, Olea, Ponsoda, & García, 2011). We used the Kaiser-Meyer-Olkin measure to verify the sampling adequacy for the analysis, KMO = ,93 which is considered acceptable (Field, 2009). The results indicated that the presence of a single factor explained 55.39% of the variance.

Job Burnout. We assessed the dimensions of *exhaustion* and *depersonalization* using the CBP-R, Spanish version (Moreno-Jiménez et al., 2000). The subscale of exhaustion consisted of seven items, while the subscale of cynicism consisted of three items. The items were scored on a five-point scale rated from 1 (totally disagree) to 5 (totally agree). Examples of items on the scales are "*I feel anxious and tense when I go to work every day*" and "*I really feel like my students don't like me*", respectively.

Personal resources. We assessed *hardiness* using the Hardiness Questionnaire, CPR, (Moreno-Jiménez, Garrosa, & González, 1999), which is a Spanish translation of the Personal Views Survey (Maddi, 1997). The scale consists of three subscales: challenge, control and commitment. Each subscale has seven items scored on a four-point scale rated from 1 (totally disagree) to 4 (totally agree). Example items from these scales are, respectively, "*As much as I can, I try to have new experiences in my daily work*", "*When you work seriously and thoroughly, you control the results*" and "*I really care and I identify with my work*".

Personal vulnerability factors. We assessed *external locus of control* using the Powerful Others scale from the Levenson Multidimensional Locus of Control Scales (Levenson, 1973). This scale consisted of eight items scored on a six-point scale rated from 1 (totally disagree) to 6 (totally agree). The scale was inversely graded, such that the highest score denotes an external locus of control. A sample item on this scale is "*To a great extent, I decide what happens in my life*".

We assessed *helplessness* using three items from the NEO Five-Factor Inventory (NEO-FFI), a scale for identifying neuroticism. The items were scored on a five-point scale rated from 1 (totally disagree) to 5 (totally agree). We selected the items after the conducting an EFA (maximum likelihood estimation method) with the entire sample, reaching saturation in three dimensions. We used the Kaiser-

Meyer-Olkin measure to verify the sampling adequacy for the analysis, KMO = .71, which is considered acceptable (Field, 2009). The items pertaining to the factor selected (which explained 20% of the variance) were "*I get scared easily*"; "*Frequently, I feel helpless, and I want someone else to help me resolve my issues*"; and "*When dealing with others, I fear doing something silly*".

We assessed *life satisfaction* using the Satisfaction with Life Scale (Diener, Emmons, Larsen & Griffin, 1985), Spanish version (Cabañero Martínez, Richart, Cabrero, Orts, Reig, & Tosal, 2004). The scale consisted of five items scored on a seven-point scale rated from 1 (totally disagree) to 7 (totally agree). A sample item on this scale is "*In most ways, my life is close to my ideal*".

We assessed *Ill health* using the Inventory of Stress Symptomatology, Scale of Physical Symptomatology, Spanish version (Benevides, Moreno-Jiménez, Garrosa, & González, 2002). The scale consisted of six items that were scored using a Likert scale rating from 1 (never) to 5 (constantly). A sample item is "*Indicate how often you have experienced the following symptoms…in the last six months*?" (*Cold and flu, voice problems, minor infections, allergies, sleeping problems, and gastric problems*).

Data analysis

To study the role of hardiness in the JD-R Model, we conducted structural equation modelling (SEM) analyses with IBM AMOS 23 (Arbuckle, 2014), using maximum likelihood estimation. Some questionnaire items had a small number of missing observations, less than 1% per variable. We used the E-M algorithm for the imputation technique to calculate these estimated scores. In preparation for the model, we checked for violations of assumptions of normality. We found univariate outliers at a proportion of less than 1% for the following variables: work engagement, exhaustion, cynicism, commitment, external locus of control, and helplessness. To reduce kurtosis in these variables, we applied the Winsorizing technique (Kokik & Bell, 1994).

We then employed EFA and CFA to define the observed variables associated with the latent variables. We constructed five latent variables. The latent variable Job Resources was indicated by Supervision and Material Resources ($\chi^2 = 196.81$, $df = 43$, CFI = .93, NFI = .92, TLI = .92 RMSEA = .09); Job Demands was indicated by Work Overload and Administrative Rigidity ($\chi^2 = 101.12$, $df = 25$, CFI = .95, NFI=.93, TLI=.92, RMSEA = .08); Job Burnout was indicated by Exhaustion and Cynicism ($\chi^2 = 77.29$, $df = 34$, CFI = .97, NFI= .94, TLI=.95, RMSEA = .05); Hardiness was indicated by Commitment, Control and Challenge ($\chi^2 = 309.01$, $df = 87$, CFI = .92, NFI=.89, TLI=.90, RMSEA =

.077); and PVF were indicated by External Locus of Control and Helplessness ($\chi^2 = 42.77$, $df = 26$, CFI = .98, NFI=.96, TLI=.98, RMSEA = .04). In all cases, the model fit was satisfactory.

After preparing the latent variables, we created the JD-R model. To analyze the mediation effect of work engagement on the motivational process, we drew paths from job resources to work engagement and from work engagement to life satisfaction. We repeated the same process to test the effect of job burnout in the health-impairment process, drawing paths from job demands to job burnout and from job burnout to ill health. Similarly, we drew a path from job burnout to life satisfaction. The latent variables, job demands and job resources, were correlated, as were job burnout and work engagement. Once we demonstrated that the model had a satisfactory model fit, we proceeded to include personal resources and PVF.

To test hypotheses 2, 5 and 6 we confirmed that the relationship between job resources and work engagement was significant; as well as the relationships between job burnout and ill health, and between job burnout and life satisfaction. Figure 1 presents the results of these relationships.

Then, we employed a second model that included the latent variables hardiness and PVF. To analyze the mediation effect of hardiness (Hypothesis 2), we established a path from job resources to hardiness and from hardiness to work engagement. We tested the significance of the mediational effect using a bootstrap technique with a 95% CI via calculation of 5000 bias-corrected samples. We tested Hypothesis 3 by adding a path from hardiness to job burnout.

Next, in the test for Hypothesis 4, we established a path from job burnout to PVF. Finally, we drew paths from PVF to ill health and to life satisfaction to test the mediation effect (hypotheses 5 and 6). We applied the aforementioned bootstrap technique to test the mediating relationship of these hypotheses 5 and 6.

We assessed model fit using absolute and incremental goodness-of-fit indices. Absolute measures of fit included the following: root mean square error of approximation (RMSEA) and standardized root mean square residual. Incremental measures of fit included the comparative fit index (CFI), normed fit index (NFI) and non-normed fit index, or Tucker and Lewis index (TLI). We considered RMSEA values below .05 a close approximate fit (Kline, 2000); and SRMR values below .08 a good fit (Hu & Bentler, 1999). For CFI, NFI and TLI, values greater than .95 were considered a good fit; and values between .90 and .95, satisfactory (Abad et al., 2011).

Results

Tables 1 presents the means, standard deviations, and reliabilities for each variable and the correlations among the variables in the study. All internal consistencies yielded Cronbach's alpha values greater than 0.7, which is considered satisfactory (Abad et al, 2011).

[Table 1 about here]

The results showed low levels of exhaustion and cynicism; high work engagement; low to medium work overload and administrative rigidity; medium to high supervisory support and material resources; high challenge, control and commitment; low external locus of control and helplessness; low ill health; and medium to high life satisfaction. All significant correlations followed the expected directions.

[Table 2 about here]

Results of the hypothesized model

To test the hypotheses, we conducted two structural equation modelling analyses. Table 2 presents the research models fit indices. We performed M0 following the JD-R model without personal characteristics. M0 had a satisfactory fit [χ^2 (41.26, *df* = 23, N = 430) = p < .001, GFI = .98. TLI = .96, CFI = .98, SRMR = .034, RMSEA = .043)]. The assumptions of JD-R theory were met: job demands predicted job burnout (γ = .81, p < .001); job burnout led to ill health (γ = .42, p < .001); job burnout completely mediated the relationship between job demands and ill health; job resources predicted work engagement (γ = .47, p < .001); work engagement led to positive outcomes such as life satisfaction (γ = .18, p < .01); and work engagement completely mediated the relationship between job resources and life satisfaction. The results also revealed a significant negative path from job burnout to life satisfaction (γ = -.39, p < .001); and two significant correlations between job demands and job resources (r = -.82, p < .001), and between job burnout and work engagement (r = -.46, *p* < .001).

[Figure 1 near here]

The model fit of M1 was satisfactory [χ^2 (144.09, *df* = 67, N = 430) = p < .001, CFI = .95, NFI = .91, TLI = .93, CFI = .95, SRMR = .048, RMSEA = .052)], as shown in Table 2. The first hypothesis was confirmed by a significant direct effect from hardiness to work engagement (γ = .31, p < .001). Then, to test Hypothesis 2 (partial mediation of hardiness in the relationship between job resources and work engagement) we started our analyses from M0. The results confirmed a significant relationship between job resources and work engagement. Then, in M1, we found significant paths from job resources to

hardiness ($\gamma = .27$, $p < .001$), and from hardiness to work engagement. These results indicated a mild but significant mediation effect of hardiness (b = .08, B = .176 SE = .066, p < .001). These findings were consistent with Hypothesis 2.

Model 1 included a path from hardiness to job burnout. The results indicated that this path was inverse and significant ($\gamma = -.27$, $p < .001$), which supported Hypothesis 3.

As shown in Figure 2, the correlation between hardiness and PVF was significant ($r = -.52$, $p < .001$), which indicated that hardiness was negatively associated with PVF. In M1, there was also a significant path from job burnout to predicted PVF ($\gamma = .63$, $p < .001$), which demonstrated Hypothesis 4. Hypothesis 5 was rejected, as the path from PVF to ill health was not significant ($\gamma = .02$, ns).

[Table 3 about here]

The mediation effect of PVF between job burnout and life satisfaction was confirmed (Hypothesis 6). PVF predicted life satisfaction ($\gamma = -.51$, $p < .001$). There was a significant indirect effect of job burnout on life satisfaction (b = -.324, B = -.641, SE = .154, p < .001), which indicated that the strain experienced in job burnout increased PVF, and that these vulnerabilities had an impact on life satisfaction by reducing the individual's perception of the quality of their own life.

[Figure 2 near here]

Discussion

In the present study we used the JD-R model and COR theory as a framework to study the role of personal resources and vulnerability factors in the work environment of teachers at private schools in Peru. In the study of personal resources we included an analysis of the activation of hardiness through job resources, and the further impact of hardiness on teachers' work engagement. We also included the protective effect of hardiness against job burnout. We expected teachers who experienced burnout to be more vulnerable to the loss of resources due to activation of self-evaluations of lack of control (external locus of control) and lack of power (helplessness). We expected those teachers who displayed higher self-evaluations of external locus of control and helplessness to report higher levels of ill health and lower levels of life satisfaction. The results are consistent with the relationships hypothesized, except for the relationship between self-evaluations of inefficacy and the perception of ill health.

The role of hardiness in the motivational process.

Our findings indicate that hardiness not only promotes work engagement (H1) among participating teachers, but that it also explains part of the relationship between job resources and work engagement (H2). Teachers with higher levels of hardiness benefit more from the resources offered, and they manage to remain more engaged. Although the mediation is significant, its effect is mild, which may indicate that the context had a stronger effect on the work engagement of teachers. Nevertheless, individual differences have a positive impact, and hardiness acts as a personal resource that increases teachers' work engagement. These findings are in line with the assumption of COR theory that people with greater personal resources display more of them to ensure more gains (Hobfoll, 2012).

Protective role of hardiness in the health impairment process

In the health impairment process, the job demands of work overload and perceived administrative rigidity acted as stressors at the participating schools, placing strain upon the teachers and exposing them to job burnout. Our findings indicate that teachers with higher hardiness experience less job burnout. Hardiness plays a preventive role against the strain produced by job burnout. The teachers who experience job burnout are more affected by health problems, but hardiness plays an indirect and modest role in reducing health problems.

As predicted by the COR theory, which states the primacy of resource loss, the health impairment process was more prominent than the motivational process. This effect is also observed by Hakanen et al. (2006) for Finnish teachers. Hobfoll (2011) explains that in the process of resource loss, people take a conservative investment approach, and a resilient response is needed to counteract the powerful, long-term impact of resource loss.

The JD-R model analyzed revealed a moderate association between work engagement and job burnout. This finding is consistent with Schaufeli & Bakker's approach (2004), suggesting that these concepts are negatively related but not on opposite poles. The COR theory substantiates this approach by stating that loss cycles and engagement cycles can occur simultaneously under certain circumstances, but this theory clearly notes that "…if the loss cycle persists and cannot be contained, it will not only weaken the engagement cycle but deeply damage it" (Hobfoll, 2012). In other words, when demands reach high levels, people will stray from the motivational process to meet survival demands in the health impairment process.

Personal vulnerability factors and their role in the health impairment process

As expected, PVFs in the form of self-evaluations of inefficacy, such as external locus of control and helplessness, are negatively associated with hardiness. The impact of PVFs in the JD-R model analyzed differed considerably from the impact of hardiness. Self-evaluations of personal inefficacy do not act as antecedents of job burnout or work engagement; they are profoundly affected by job burnout. Teachers who experience more symptoms of job burnout are more disposed to self-evaluations of inefficacy. However, against expectations, we did not find a relationship between PVF and perceptions of ill health. Self-evaluations of inefficacy have no effect on perceptions of health. This could be explained by the passive coping strategy these self-evaluations trigger in the teachers assessed. In this case, the teachers' self-evaluations of inability to cope with the demanding environment in which they work might elicit a response of inner resignation, as these teachers might feel that their work has lost meaning for them.

Nevertheless, the negative effect of these self-evaluations of inefficacy can be observed in the reduced perception of life satisfaction among participating teachers. In the JD-R model analyzed, these self-evaluations explain the relationship between job burnout and life satisfaction. Teachers who experience job burnout are susceptible to self-evaluations of ineffectiveness, and these in turn significantly reduce their perceived life satisfaction. These results are consistent with Corollary 2 of COR theory, which states "…that not only are those who lack resources more vulnerable to resource loss, but that initial loss begets future loss" (Hobfoll, 2010, p. 11). Job burnout is experienced as traumatic by individuals who express more vulnerability factors, which leads to diminished subjective well-being. According to Lazarus & Folkman (1984) the most damaging life events are those in which a person experiences a loss of central and extensive commitments. Hobfoll (2010) distinguishes between individuals exposed to a single traumatic episode and individuals exposed to chronic and ongoing episodes of stress. He suggests that in the latter group, which may be more applicable to those teachers found to be more vulnerable, this successive exposure to stressors takes an increasing toll on resiliency by consuming key resiliency resources and limiting the development of new resource reservoirs (Hobfoll, 2010).

The impact of job burnout on self-evaluations of external locus of control and helplessness associated with beliefs of inefficacy contributes to the controversy surrounding the status of the third

dimension of burnout syndrome. Is lack of professional efficacy part of the syndrome or a consequence of it? Our findings seem to support the thesis that inefficiency is a consequence of the syndrome.

Limitations

This study was subject to certain limitations. The first limitation stemmed from our self-report measures. These measures relied on the sincerity of the participants' responses and may have been subject to bias. We ensured that the teachers knew that their questionnaires were confidential, and we provided each of them with an envelope to maintain their privacy. To ensure that biases did not present a problem, we practiced a zero-constrained test to analyze common method bias. The results were not significant, which indicates that common method bias was not a problem. Similarly, although we ensured that the Spanish versions of the questionnaires were understood by the teachers, the participating Peruvian teachers may still have found some idioms difficult to understand (e.g. some items of the UWES absorption dimension).

Second, although the SEM suggests causality, no causal inferences can be made. This cross-sectional study is subject to the flaws that are typical of this method. To confirm the proposed processes, longitudinal studies are necessary.

Third, although we believe that our findings could represent other occupational sectors, the fact that they refer to teachers at private schools in Peru means they should be interpreted with caution. Our study included primary and secondary school teachers who may experience differing realities from one another, and distinguishing between them was difficult because some teachers worked in both divisions. Nonetheless, the job demands and job resources present in the latent variables studied were common to both divisions.

Compliance with ethical standards.

Conflict of interest. The authors certify that there is no conflict of interest of any kind.

Ethical approval. The present study followed the ethical standards of the 1964 Helsinki declaration and its later amendments or comparable ethical standards on all procedures regarding human participants.

Informed consent. The headmasters or headmistresses of the participating schools, and, in turn, the teachers who took part, voluntarily gave their consent to take part in the study after the aims and objectives of the research project were made known to them.

References

Abad, F.J., Olea, J., Ponsoda, V., & García, C. (2011). *Medición en ciencias sociales y de la salud.* Madrid: Síntesis.

Alarcon, G., Eschleman, K. J., & Bowling, N. A. (2009). Relationships between personality variables and burnout: A meta-analysis. *Work & Stress, 23(3),* 244–263. doi:10.1080/02678370903282600

Arbuckle, J. L. (2014). *IBM® SPSS® AMOSTM™ 23 user's guide*. Crawfordville, FL: Amos Development Corporation.

Bakker, A. B., & Bal, M. P. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology, 83*, 189–206. doi:10.1348/096317909x402596

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. doi:10.1146/annurev-orgpsych-031413-091235

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182. doi:10.1037/0022-3514.51.6.1173

Bartone, P. (2015). Leader influences on resilience and adaptability in organizations. In U. Kumar (Ed.), *The Routhledge international handbook of psychosocial resilience* (pp. 93–111). New Delhi: Sage.

Benevides, A., Moreno-Jiménez, B., Garrosa, E., & González, J. (2002). La evaluación específica del síndrome de Burnout en psicólogos: el "Inventario de Burnout de psicólogos". *Clínica y Salud, 13*, 257–283.

Betoret, F. D. (2009). Self-efficacy, school resources, job stressors and burnout among Spanish primary and secondary school teachers: A structural equation approach. *Educational Psychology, 29*, 45–68. doi:10.1080/01443410802459234

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*, 20–28. doi:10.1037/0003-066x.59.1.20

Bright, S. J., Kane, R., Marsh, A., & Bishop, B. (2013). Psychometric properties of the locus of control of behaviour scale (LCBS) among Australians seeking alcohol and other drug (AOD) treatment. *Australian Psychologist, 48*, 172–177. doi:10.1111/j.1742-9544.2012.00094.x

Byrne, B. (1994). Burnout: Testing for the Validity, Replication, and Invariance of Causal Structure Across Elementary, Intermediate, and Secondary Teachers. *American Educational Research Journal, 31* (3), 645-673

Cabañero Martínez, M. J., Richart, M., Cabrero, J., Orts, M., Reig, A., & Tosal, B. (2004). Fiabilidad y validez de la Escala de Satisfacción con la Vida de Diener en una muestra de mujeres embarazadas y puérperas. *Psicothema*, *27*, 448–455.

Chen, S., Westman, M., Hobfol, S.E. (2015). The commerce and crossover of resources: Resource conservation in the service of resilience. *Stress and Health, 31*(2), 95-105.

Cuenca, R., y O'Hara, J. (2006). El estrés de los maestros: percepción y realidad. Estudio de casos en Lima Metropolitana. Lima: Ministerio de Educación -DINFOCAD -PROEDUCA – GTZ.

De Stasio, S., Fiorilli, C., Benevene, P., Uusitalo-Malmivaara, L., Di Chiacchio, C. (2017). Burnout in special needs teacher at kindergarten and primary school: investigating the role of personal resources and work wellbeing. *Psychology in the Schools, 54*(5), 472-486.

De Vellis, R. (2012). *Scale development: Theory and applications*. Los Angeles, CA: Sage.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*, 499–512. doi:10.1037/0021-9010.86.3.499

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71–75. doi:10.1207/s15327752jpa4901_13

Diestel, S. & Schmidt, K.H. (2010). Direct and interaction effects among the dimensions of the Maslach burnout inventory: Results from two German longitudinal samples. *International Journal of Stress Management, 17*(2), 159-180.

Ennis, N.E., Hobfoll, S.E., Schröder, K.E. (2000). Money doesn't talk, it swears: how economic stress and resistance resources impact inner-city women's depressive mood. *Am. J. Community Psychol., 28*(2), 149-173.

Eschleman, K. J., Bowling, N. A., & Alarcon, G. M. (2010). A meta-analytic examination of hardiness. *International Journal of Stress Management, 17*, 277–307. doi:10.1037/a0020476

Fernández, M. (2008). Burnout, autoeficacia y estrés en maestros peruanos: Tres estudios fácticos. *Ciencia y Trabajo, 10*(30), 120-125.

Garrosa, E., Moreno-Jiménez, B., Rodríguez-Muñoz, A., & Rodríguez Carvajal, R. (2011). Role stress and personal resources in nursing: A cross-sectional study on burnout and engagement. *International Journal of Nursing Studies, 48*(4), 479-489.

Hakanen, J., Bakker, A., Schaufeli, W. (2006). Burnout and work engagement among teachers. *Journal of School Psychology, 43*, 495-513. doi:10.1016/j.jsp.2005.11.001

Hakanen, J. J., & Schaufeli, W. B. (2012). Do burnout and work engagement predict depressive symptoms and life satisfaction? A three-wave seven-year prospective study. *Journal of Affective Disorders, 141*, 415–424. doi:10.1016/j.jad.2012.02.043

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*, 307–324. doi:10.1037/1089-2680.6.4.307

Hobfoll, S.E. (2010). Conservation of resource caravans and engaged settings. *Journal of Occupational and Organizational Psychology, 84*, 116-122.

Hobfoll, S. E. (2012). Conservation of resources theory: Its implication for stress, health, and resilience. In S. Folkman (Ed.), *The Oxford handbook for stress, health, and coping* (pp. 1–42). Oxford: Oxford Handbooks Online.

Hobfoll, S. E., Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology, 84*, 632–643. doi:10.1037/0022-3514.84.3.632

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6(1)*, 1–55. doi:10.1080/10705519909540118

Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research, 79*, 491–525. doi:10.3102/0034654308325693Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology, 83*, 17–34. doi:10.1037/0021-9010.83.1.17

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*, 262–273.

Kline, P. (2000). *The handbook of psychological testing* (2nd ed.). London: Routledge.

Keller, M. M., Chang, M.-L., Becker, E. S., Goetz, T., & Frenzel, A. C. (2014). Teachers' emotional experiences and exhaustion as predictors of emotional labor in the classroom: An experience sampling study. *Frontiers in Psychology, 5*, 1442.

Kobasa, S. C. (1979). Stressful life events, personality, and health: An inquiry into hardiness. Journal of Personality and Social Psychology, 37(1), 1–11. doi:10.1037/0022-3514.37.1.1

Kobasa, S. C., Maddi, S. R., & Kahn, S. (1982). Hardiness and health: A prospective study. *Journal of Personality and Social Psychology, 42*, 168–177. doi:10.1037/0022-3514.42.1.168

Kokik, P., & Bell, P. (1994). Optimal winsorizing cutoffs for a stratified finite population estimator. *Journal of official Statistics, 10*, 419–435.

Korunka, C., Kubicek, B., Schaufeli, W., & Hoonaker, P. (2009). Work engagement and burnout: testing the robustness of the Job Demands-Resources model. The *Journal of Positive Psychology, 4(3)*, 243-255.

Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal, and Coping.* New York: Springer Publishing Company, Inc.Lee, R.T., & Ashforth, B.E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology, 8*, 123-133.

Lefcourt, H. M. (1991). Locus of control. In J. S. Robinson (Ed.), *Measures of personality and social psychological attitudes* (2nd ed., pp. 413–498). San Diego, CA: Academic Press.

Levenson, H. (1973). Multidimensional locus of control in psychiatric patients. *Journal of Consulting and Clinical Psychology, 41*, 397–404. doi:10.1037/h0035357

Levenson, H. (1974). Activism and powerful others: Distinctions within the concept of internal-external control. *Journal of Personality Assessment, 38*, 377–383. doi:10.1080/00223891.1974.10119988

Lo Bue, S., Taverniers, J., Mylle, J., & Euwema, M. (2013). Hardiness promotes work engagement, prevents burnout, and moderates their relationship. *Military Psychology, 25*, 105–115. doi:10.1037/h0094952

Lorente, L. S. (2008). Extension of the Job Demands-Resources model in the prediction of burnout and engagement among teachers over time. *Psicothema, 20*, 354–360.

Maddi, S. (1997). Personal views survey II: A measure of dispositional hardiness. In C. P. Zalaquett & R. J. Wood (Eds.). *Evaluating stress: A book of resources* (pp. 293–309). Lanham, MD: Scarecrow Press, Inc.

Maddi, S. R. (2006). Hardiness: The courage to grow from stresses. *The Journal of Positive Psychology, 1*, 160–168. doi:10.1080/17439760600619609

Maddi, S. R., & Kobasa, S. C. (1984). *The hardy executive: Health under stress*. Homewood, IL: Dow Jones-Irwin.

Maslach, C. J. (1996). *Maslach burnout inventory manual* (3rd ed.). Palo Alto: Consulting Psychologists Press.

Maslach, C., & Schaufeli, W. (1993). Historical and conceptual development of burnout. In: W.B. Schaufeli, C. Maslach,& Marek (Eds.). *Professional burnout: Recent developments in theory and research* (pp. 19-32). Washington, DC: Taylor & Francis.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*, 397–422. doi:10.1146/annurev.psych.52.1.397

Melamed, S., Shirom, A., Toker, S., Berliner, S., & Shapira, I. (2006). Burnout and risk of cardiovascular disease: Evidence, possible causal paths, and promising research directions. *Psychological Bulletin, 132*, 327–353. doi:10.1037/0033-2909.132.3.327

Minkov, M. (2009). Predictors of differences in subjective well-being across 97 nations. *Cross-Cultural Research, 43*, 152–179. doi:10.1177/1069397109332239

Moreno-Jiménez, B., Garrosa, E., & González, J. (1999). La personalidad resistente, burnout y salud. *Escritos de Psicología, 4*, 64–77.

Moreno-Jiménez, B., Garrosa, E., & González, J. (2000). La evaluación del estrés y el burnout del profesorado: CBP-R. *Revista de Psicología del Trabajo y de las Organizaciones, 16*, 331–349.

Pavot, W. & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment, 5*, 164-172.

Parkes, K. R. (1984). Locus of control, cognitive appraisal, and coping in stressful episodes. *Journal of Personality and Social Psychology, 46*, 655–668. doi:10.1037/0022-3514.46.3.655

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher-student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research, 81*, 493–529. doi:10.3102/0034654311421793

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80(1)*, 1–28. doi:10.1037/h0092976

Rotter, J. B. (1990). Internal versus external control of reinforcement: A case history of a variable. American Psychologist, 45, 489–493. doi:10.1037/0003-066x.45.4.489

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*, 293–315. doi:10.1002/job.248

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies, 3*, 71–92. doi:10.1023/a:1015630930326

Schaufeli, W., & Bakker, A. (2003). The Utrecht work engagement scale. Unpublished manuscript. Utrecht University, The Netherlands. Retreived from www.schaufeli.com.

Schaufeli, W., & Taris, T. (2014). A critical review of the job demands-resources model: Implications for improving work and health. In G. Bauer & O. Hämmig (Eds.), *Bridging occupational, organizational and public health: A transdisciplinary approach* (pp. 43–67). Dordrecht: Springer.

Shirom, A. (1989). Burnout in work organizations. In: C.L. Cooper & I.T. Robertson (Eds.), *International review of industrial and organizational psychology* (pp. 25-48). New York: Wiley.

Schumm, J.A., Stines, L.R., Hobfoll, S.E., & Jackson, A.P. (2005). The double-barreled burden of child abuse and current stressful circumstances on adult women: The kindling effect of early traumatic experience. *Journal of Traumatic Stress, 18*(5), 467-476.

Sung-Mook, H. (1994). The relationship of satisfaction with life to personal characteristics. *The Journal of Psychology, 128*, 547–558. doi:10.1080/00223980.1994.9914912

Van den Broeck, A., Vansteenkiste, M., De Witte, H., & Lens, W. (2008). Explaining the relationships between job characteristics, burnout, and engagement: The role of basic psychological need satisfaction. *Work & Stress, 22*, 277–294. doi:10.1080/02678370802393672

van Mierlo, M. L., van Heugten, C. M., Post, M. W. M., de Kort, P. L. M., & Visser-Meily, J. M. A. (2015). Life satisfaction post stroke: The role of illness cognitions. *Journal of Psychosomatic Research, 79*, 137–142. doi:10.1016/j.jpsychores.2015.05.007

Vink, J., Ouweneel, E., Le Blanc, P.M. (2011). Psychological resources for engaged employees: Psychological Capital in the Job Demands-Resources Model. *Gedrag en Organisatie, 24*(2), 101-120.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management, 14*, 121–141. doi:10.1037/1072-5245.14.2.121

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior, 74*, 235–244. doi:10.1016/j.jvb.2008.11.

Yslado, R., Núñez, L., & Norabuena, R. (2010). Diagnóstico y programa de intervención para el síndrome de burnout en profesores de educación primaria de distritos de Huaraz e Independencia. *Revista IIPI, 13*(1), 151-162.