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Burnout and Work Engagement: A Thorough Investigation of the Independency of Both Constructs

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This study among 528 South African employees working in the construction industry examined the dimensionality of burnout and work engagement, using the Maslach Burnout Inventory-General Survey, the Oldenburg Burnout Inventory, and the Utrecht Work Engagement Scale. On the basis of the literature, we predicted that cynicism and dedication are opposite ends of one underlying attitude dimension (called "identification"), and that exhaustion and vigor are opposite ends of one "energy" dimension. Confirmatory factor analyses showed that while the attitude constructs represent opposite ends of one continuum, the energy constructs do not—although they are highly correlated. These findings are also supported by the pattern of relationships between burnout and work engagement on the one hand, and predictors (i.e., work pressure, autonomy) and outcomes (i.e., organizational commitment, mental health) on the other hand. Implications for the measurement and conceptualization of burnout and work engagement are discussed.

Keywords: burnout, confirmatory factor analysis, dimensionality, work engagement

Most scholars agree that burned-out employees are characterized by high levels of exhaustion and negative attitudes toward their work (cynicism; Maslach, Schaufeli & Leiter, 2001). Recently, Schaufeli and Bakker (2003, 2004; Schaufeli, Salanova, González-Romá, & Bakker, 2002) introduced work engagement as the hypothetical antipode of burnout. Accordingly, engaged employees are characterized by high levels of energy and dedication to their work. One unclear issue is whether the dimensions of burnout and work engagement are each others opposite, which would mean that one instrument (covering both ends of the continuum) would be sufficient to measure both constructs. Demerouti, Bakker, Vardakou, and Kantas (2003) developed the Oldenburg Burnout Inventory (OLBI) which contains questions on both ends of the exhaustion-vigor and cynicism-dedication continua, hereafter referred to as energy and identification dimensions (see also González-Romá, Schaufeli, Bakker & Lloret, 2006).[1]

The present study builds on the study of González-Romá et al. (2006), and adds to the literature in several ways. First, we will use a parametric scaling technique namely confirmatory factor analysis to test the dimensionality of the energy and identification dimension of burnout and of work engagement. This will overcome an important drawback of the MSP-program used by González-Romá et al. to conduct Mokken analysis—that is, that the sequential item selection and scale construction procedure may not find the dominant underlying dimensionality of the responses to a set of items (Van Abswoude, Vermunt, Hemker, & Van der Ark, 2004). Moreover, Mokken analysis can be applied to scales including items with

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[1] In the following, we will use the term identification to describe the hypothetical dimension running from distancing [cynicism (MBI-GS) or disengagement (OLBI)] to dedication (UWES and OLBI). In addition, we will use the term energy to describe the hypothetical dimension running from exhaustion (OLBI and MBI-GS) to vigor (UWES and OLBI).

a hierarchical property that is, that can be ordered by degree of difficulty. However, none of the instruments used in this study are known for including hierarchical structured items.

Second, in addition to the Maslach Burnout Inventory-General Survey (MBI-GS; Maslach, Jackson, & Leiter, 1996) and the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2002) we will use the OLBI, which is a valid instrument that can be used to measure the energy and identification dimensions of burnout and work engagement simultaneously as bipolar constructs. We focused on these instruments because they include both core dimensions of burnout and work engagement, namely a vigor/exhaustion dimension and an identification/distancing dimension, while instruments like the Shirom-Melamed Burnout Scale (Shirom, 2003) or the Copenhagen Burnout Inventory (Kristensen, Borritz, Villadsen & Christensen, 2005) focus solely on vigor/exhaustion.

Third, next to the factor structure we will also examine the pattern of relationships of the (bipolar and/or unipolar) dimensions of burnout and work engagement with relevant job characteristics (work pressure and job autonomy) and organizational outcomes (organizational commitment and mental health). We focus on these constructs because they have been studied most often as being related to the energy or identification dimensions of burnout or engagement.

Measurement of Burnout and Work Engagement

The most commonly used instrument for the measurement of burnout is the MBI-GS (Schaufeli, Leiter, Maslach, & Jackson, 1996). Based on the notion that emotional exhaustion, depersonalization and personal accomplishment (representing symptoms of burnout specific for human services) can be broadened beyond the interpersonal domain that is characteristic for the human services, they distinguished three generic burnout dimensions that were labeled exhaustion, cynicism and professional efficacy, respectively. Many empirical findings point to the central role of exhaustion and cynicism as the "core" dimensions of burnout, as opposed to the third component—lack of professional efficacy (Lee & Ashforth, 1996). As a result, the third dimension measured with the MBI-GS was excluded from this study. Several studies have supported the invariance of the MBI-GS factor structure across various occupational groups (Bakker, Demerouti & Schaufeli, 2002; Leiter & Schaufeli, 1996), and across nations (Richardsen & Martinussen, 2004; Schutte, Toppinen, Kalimo, & Schaufeli, 2000).

Unfortunately, the MBI-GS has one important psychometric shortcoming, namely that the items within each subscale are all framed in the same direction. Accordingly, all exhaustion and cynicism items are phrased negatively, whereas all professional efficacy items are phrased positively. From a psychometric point of view, such one-sided scales are inferior to scales that include both positively and negatively worded items (Price & Mueller, 1986) because they can lead to artificial factor solutions in which positively and negatively worded items are likely to cluster (Demerouti & Nachreiner, 1996; cf. Doty & Glick, 1998) or may show artificial relationships with other constructs (Lee & Ashforth, 1990).

The UWES (Schaufeli & Bakker, 2003, 2010; Schaufeli et al., 2002) has been developed to measure work engagement defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption. Vigor refers to high levels of energy and mental resilience while working. Dedication refers to a sense of significance, enthusiasm, inspiration, and pride. Vigor and dedication are the direct positive opposites of exhaustion and cynicism, respectively. Absorption is excluded from the present study because burnout does not contain any parallel dimension to this dimension. The UWES has been validated in several countries (e.g., Schaufeli et al., 2002; Schaufeli & Bakker, 2004; Storm & Rothmann, 2003; Yi-Wen & Yi-Qun, 2005). However, some studies found a one- instead of a three-factor structure of work engagement (e.g., Sonnentag, 2003).

We propose an alternative measure of burnout and work engagement: The OLdenburg Burnout Inventory (OLBI; Demerouti, 1999; Demerouti & Nachreiner, 1998). It includes positively and negatively framed items to assess the two core dimensions of burnout: *exhaustion* and *disengagement from work*. Exhaustion is defined as a consequence of intensive physical, affective and cognitive strain, that is, as a long-term consequence of prolonged exposure to certain job demands. Contrary to exhaustion as operationalized in the MBI-GS, the OLBI covers affective but also physical and cognitive aspects of exhaustion. Such an operationalization of exhaustion/vigor covers more thoroughly peoples' intrinsic energetic resources, that is, emotional robustness, cognitive liveliness and physical vigor (Shirom, 2003) and enables the application of the instrument to those workers with physical and cognitive work. Disengagement refers to distancing oneself from one's work in gen-

eral, work object, and work content. Moreover, the disengagement-items concern the relationship between employees and their jobs, particularly with respect to identification with work and willingness to continue in the same occupation. Depersonalization is consequently only one form of disengagement which is directed toward customers.

The factorial validity of the OLBI has been confirmed in studies conducted in different countries (Demerouti & Bakker, 2008; Demerouti, Bakker, Nachreiner, & Ebbinghaus, 2002; Halbesleben & Demerouti, 2005; Demerouti et al., 2003). Following a multitrait multimethod approach, Demerouti et al. (2003) and Halbesleben and Demerouti (2005) confirmed the convergent validity of the OLBI and MBI-GS.

The Dimensionality of Burnout and Work Engagement

There are different views regarding the dimensionality of burnout and work engagement. Demerouti and colleagues (2001, 2003) assume that the dimensions of burnout and work engagement are bipolar dimensions. This is reflected in the OLBI which includes both negatively and positively worded items so that both ends of the continuum are measured. In other words, the exhaustion and disengagement subscales include items that refer to their opposites, namely vigor and dedication, respectively. Positively framed items should be reverse-coded if one wants to assess burnout. Alternatively, to assess *work engagement* the negatively framed items should be recoded (Demerouti & Bakker, 2008).

Maslach and Leiter (1997) agree with this standpoint. They rephrased burnout as an erosion of engagement with the job, whereby energy turns into exhaustion, involvement turns into cynicism, and efficacy turns into ineffectiveness. In their view, work engagement is characterized by energy, involvement and professional efficacy, which are the direct (perfectly inversely related) opposites of the three burnout dimensions. However, it should be noted that their MBI-GS includes negative items only. Therefore, low scores on exhaustion and cynicism cannot be taken as being representative of vigor and dedication, since employees who indicate that they are not fatigued are not necessarily full of energy.

Schaufeli and Bakker (2003, 2010; Schaufeli et al., 2002) argue that work engagement cannot be measured by the opposite profile of the MBI-GS, because, even though in conceptual terms engagement is the positive antithesis of burnout, the content and consequently the measurement of both concepts is different. As the MBI-GS includes only negatively worded items, it is difficult to conclude that individuals who reject a negatively worded statement would automatically agree with a positively worded one. Thus, Schaufeli and Bakker (2003) proposed that burnout and work engagement should be conceived as two opposite concepts that should be measured independently with different instruments.

A direct test of the dimensionality of burnout and work engagement has been conducted by González-Romá et al. (2006). They used the MBI-GS and the UWES to test the hypothesis that items reflecting exhaustion-vigor and cynicism-dedication are scalable on two distinct underlying bipolar dimensions (labeled energy and identification, respectively). Using a nonparametric scaling technique, they showed that these core burnout and engagement dimensions can indeed be seen as opposites of each other along two distinct bipolar dimensions (energy vs. identification). However, a closer look at their findings reveals that the exhaustion—vigor items constitute a weak to moderate energy dimension, and that the cynicism—dedication items constitute a strong identification dimension. Nevertheless, it can be concluded from this study that negatively and positively framed items can be used to assess the core dimensions of burnout *and* work engagement. Specifically:

> *Hypothesis 1:* Disengagement/cynicism and dedication are opposite ends of one dimension.
>
> *Hypothesis 2:* Exhaustion and vigor are opposite ends of one dimension.

Work pressure and autonomy are two job characteristics that have been related to burnout and to work engagement. Specifically, work pressure has the strongest positive relationship with exhaustion (Demerouti, Bakker, & Bulters, 2004; Lewig, Xanthopoulou, Bakker, Dollard, & Metzer, 2007; Hakanen, Bakker, & Schaufeli, 2006; Rothmann & Pieterse, 2007); and a less strong but negative relationship with vigor (Hakanen et al., 2006; Rothmann & Pieterse, 2007). However, some authors found a nonsignificant relationship between work/time pressure and exhaustion or vigor (Mauno, Kinnunen, & Ruokolainen, 2007). The relationship between work pressure and the identification components of burnout and work engagement is, however, weak (e.g., Bakker, Demerouti, & Verbeke, 2004; Hakanen et al., 2006; Rothmann & Pieterse, 2007). Autonomy seems to be related to the identification dimensions and the energy dimensions

(Bakker et al., 2004; Demerouti et al., 2001; Schaufeli & Bakker, 2004). It shows a negative relationship with exhaustion and cynicism (Bakker et al., 2004; Hakanen et al., 2006; Koekemoer & Mostert, 2006; Schaufeli & Bakker, 2004), and a positive relationship with vigor and dedication (Hakanen et al., 2006; Mauno et al., 2007).

Organizational commitment is an outcome that is particularly related to the identification components of burnout and work engagement (Schaufeli & Bakker, 2004) and weakly related/unrelated to the energy components, specifically exhaustion (Hakanen et al., 2006; Llorens, Bakker, Schaufeli, & Salonova, 2006). Finally, mental health shows a stronger relationship with the energy dimensions and in particular with exhaustion (Hakanen et al., 2006; Jackson & Rothmann, 2005; Lewig et al., 2007; Schaufeli & Bakker, 2004).

What is of interest for our research question is whether the two ends of the energy and identification dimensions show the same pattern of relationships with these constructs. Similar relationships would be evidence for bipolar constructs, while differential relations would substantiate the argument for independent (unipolar) dimensions. For instance, if exhaustion and vigor are equally strong related to work pressure (but in the opposite direction) this would suggest that they represent opposite poles of one dimension. If, however, one of them is substantially stronger related to work pressure this would mean that they represent different and thus independent dimensions. Because there is no clear evidence for differential relationships between these constructs and the two ends of the energy and identification dimensions we formulated the following hypotheses:

> *Hypothesis 3:* Cynicism/disengagement and dedication/engagement will be equally strong related to other constructs (work pressure, autonomy, organizational commitment, mental health), but in the opposite direction.

> *Hypothesis 4:* Exhaustion and vigor will be equally strong related to other constructs (work pressure, autonomy, organizational commitment, mental health), but in the opposite direction.

Method

Participants and Procedure

A cross-sectional survey was conducted using a convenience sample of employees of a company in the South African construction industry ($N = 528$). The response rate was 53%. After permission was obtained from executive management, the managers, Human Resources department, and employee/employer committees were informed of the study during management meetings. Thereafter, all employees received paper-and-pencil questionnaires and envelopes at their work that could be returned to the researchers involved. A letter explaining the purpose of the research accompanied the questionnaire. The employees were kindly requested to fill in the questionnaire in private and send it to the Human Resources department, where the researchers collected all the completed questionnaires. Participation was voluntary, and the confidentiality and anonymity of the answers was emphasized.

The majority of the participants worked in the Construction (40.2%) and Mining (24.2%) units, while the rest worked in the Shared Services (12.3%), Handling (8.3%), Energy (5.1%), Rental (5.1%), and Agriculture (4.8%) departments. The participants were predominantly male (71.5%), while 62.7% were White, 20.4% were African, 11.2% were Colored, and 3.1% were Indian. The mean age was 39.61 ($SD = 11.02$). A total of 58.5% of the participants had a high school qualification (Grade 10-Grade 12), while 39.2% possessed a (technical college) diploma or university degree. Most participants were married/living with a partner, with children living at home (50.6%).

Instruments[2]

MBI-GS. We used the MBI-GS (Schaufeli et al., 1996) to assess the core burnout dimensions with two subscales, namely Exhaustion and Cynicism. *Exhaustion* was measured with five items (e.g., "I feel emotionally drained from my work"). *Cynicism* was assessed with five items (e.g., "I have become less enthusiastic about my work"). All items are scored on a seven-point scale, ranging from (0) "never" to (6) "every day." High scores on exhaustion and cynicism indicate burnout.

OLBI. The OLBI originally distinguishes an exhaustion and disengagement dimension. However, both subscales include four items that are positively worded and four items that are negatively worded. This means that both ends of the energy and identification dimensions are included in the OLBI. The

[2] Le Roux (2005) and Rost (2007) have confirmed the construct equivalence of the instruments used in the present study for different language and educational groups.

answering categories are (1) "strongly agree" to (4) "strongly disagree." The OLBI items are displayed in the Appendix.

UWES. The UWES (Schaufeli & Bakker, 2003; Schaufeli et al., 2002) was used to assess the two core dimensions of work engagement, namely *vigor* and *dedication*. *Vigor* was assessed with six items (e.g., "At my work, I feel bursting with energy"). *Dedication* was assessed with five items (e.g., "I find the work that I do full of purpose and meaning"). All items are scored on a seven-point rating scale, ranging from (0) "never" to (6) "every day." High scores indicate work engagement.

Work pressure was measured with six items that were adapted from the Job Content Questionnaire (Karasek, 1985). The original statements were rephrased as questions (e.g., "Are you asked to do an excessive amount of work?"). Items were scored on a scale ranging from (1) "almost never" to (4) "always," with higher scores indicating higher job pressure.

Autonomy was measured with six items from the validated questionnaire of Van Veldhoven, Meijman, Broersen and Fortuin (1997) (e.g., "Can you decide for yourself how to carry out your work?"). Items were scored on a four-point rating scale: (1) "almost never" to (4) "always". Higher scores signify a higher level of autonomy.

Mental health was measured with the General Health Questionnaire (GHQ-28, Goldberg & Williams, 1988). The GHQ-28 is a 28 item questionnaire generally used for the screening of mental illness. The GHQ-28 asks participants to report if they have had any medical complaints and how their general health had been over the past few weeks, rating them on a 4-point scale ranging from (1) "better than usual" to 4 "much worse than usual." The scale taps four factors: somatic symptoms, anxiety and insomnia, social dysfunction and depression. Scores were coded such that higher overall scores indicate better mental health.

Organizational commitment was measured with five items of the affective organizational commitment scale developed by Meyer, Allen, and Smith (1993). An example item is "This organization has a great deal of personal meaning for me." Items were rated on a 5-point scale ranging from (1) "totally agree" to (5) "totally disagree."

Statistical Analysis

In preliminary, unreported CFAs, one- and two-factor models were fitted to responses to each of the three instruments separately. The results indicated that two-factor model solutions (exhaustion and cynicism for the MBI-GS, exhaustion and disengagement for the OLBI, vigor and dedication for the UWES) fitted responses to all instruments substantially better than did one-factor solutions. All items had significant loadings on the expected factors except for the third item of the cynicism scale (i.e., "I just want to do my work and not be bothered"). This is consistent with earlier studies (Schutte et al., 2000; Storm & Rothmann, 2003). Consequently, we decided not to include this item in further analyses.

We fitted the responses to all three instruments simultaneously to the data. However, the energy dimensions (OLBI-exhaustion, OLBI-vigor, MBI-exhaustion, and UWES-vigor) were analyzed separately from the identification dimensions (OLBI-disengagement, OLBI-dedication, MBI-cynicism, and UWES-dedication). This was done in order to avoid building large models (in this case including 36 manifest variables) that generally show a poor fit to the data. Bentler and Chou (1987) suggest that models should not exceed the total of 20 manifest variables because in large models with large sample sizes 'the sample size multiplier that transforms the fit function into a χ^2-variate will multiply a small lack of fit into a large statistic' (p. 97). Building smaller models still allows testing our hypotheses. We followed the same way of modeling to test the relationships between the energy and identification dimensions with other variables (work pressure, autonomy, mental health, and commitment) save one difference: we included age and gender as control variables. Specifically, age and gender had a path to all manifest variables of the models. CFAs were conducted with AMOS 7 (Arbuckle, 2006). Next to the inspection of the goodness-of-fit indices we performed chi-square difference tests in order to compare alternative, nested models.

Results

Cronbach's alpha and bivariate correlations between the study variables are displayed in Table 1. Note that while all (sub-)scales had sufficient reliability, for OLBI vigor this was $\alpha = .63$. However, we had to keep this subscale in order to retain a minimum of two indicators for each end of the continua.

Inferring Identification and Energy Dimensions

The dimensionality of the identification dimension was tested with alternative models (see Figure 1). We tested whether considering separate identification factors that is, MBI-cynicism, UWES-dedication,

Table 1
Means, Standard Deviations, and Bivariate Correlations of the Study Variables

	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. MBI exhaustion	2.51	1.40	.82													
2. MBI cynicism	2.20	1.26	.44	.73												
3. UWES vigor	4.48	1.10	−.35	−.42	.69											
4. UWES dedication	4.95	1.19	−.42	−.48	.71	.85										
5. OLBI exhaustion total[1]	2.17	.57	.62	.45	−.53	−.50	.74									
6. OLBI exhaustion	2.47	.74	.60	.41	−.44	−.42	.90	.78								
7. OLBI vigor	1.87	.57	−.45	−.37	.48	.45	−.82	−.49	.63							
8. OLBI disengagement total[1]	2.07	.55	.52	.54	−.55	−.68	.67	.62	−.53	.79						
9. OLBI disengagement	1.97	.62	.38	.37	−.48	−.65	.50	.37	−.51	.82	.69					
10. OLBI dedication	2.85	.69	−.49	−.54	.45	.49	−.62	−.65	.39	−.85	−.41	.71				
11. Mental health	.68	.45	−.54	−.39	.37	.41	−.61	−.56	.49	−.49	−.39	.43	.94			
12. Work pressure	2.26	.55	.27	.08	.09	.02	.13	.17	−.04	.04	−.04	−.11	−.16	.77		
13. Autonomy	2.30	.63	−.28	−.18	.32	.36	−.34	−.28	.31	−.36	−.33	.28	.31	−.09	.78	
14. Organizational commitment	2.04	.79	.31	.37	−.36	−.50	.30	.26	.27	.48	.49	−.32	.19	.04	.22	.87

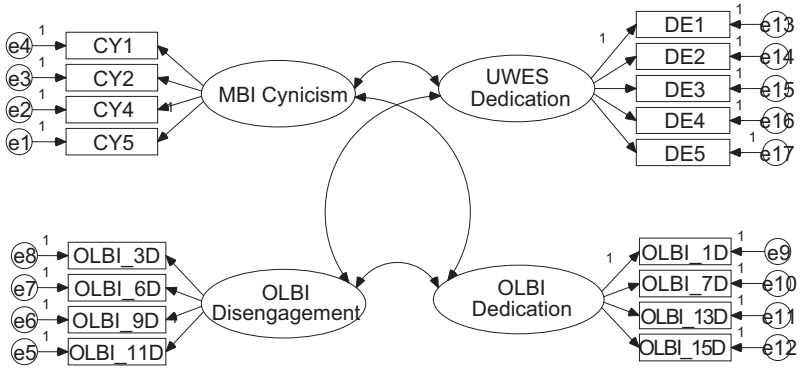
Note. Cronbach's alpha on the diagonal, $N = 528$.
[1] OLBI exhaustion total and OLBI disengagement total refer to the average score of all positively and negatively worded items of the original exhaustion and disengagement OLBI dimensions, respectively.
All correlations $r \geq |.13|$ are significant at $p < .01$, while correlations $|.09| \leq r < |.13|$ are significant at $p < .05$.

OLBI-disengagement, and OLBI-dedication (Model 1), was better compared to two second-order factors of distancing and dedication (Model 3) or compared to only one second-order factor of identification (Model 2). Note that OLBI-disengagement included the four negatively formulated items and OLBI-dedication the four positively formulated items of the disengagement scale. In this way, we had two indicators for each end of the continuum (i.e., two scales for distancing and two for dedication), which is useful for building second-order latent factors. The same procedure was followed for the energy dimensions in a separate series of analyses including MBI-exhaustion, UWES-vigor, OLBI-exhaustion and OLBI-vigor, OLBI-exhaustion, and OLBI-vigor as first-order factors.

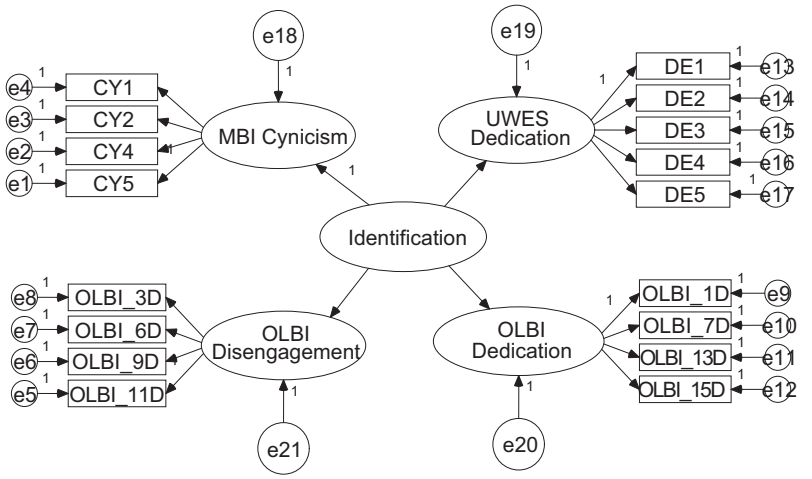
Model 1 explains responses to the items in terms of four first-order factors. This first-order model is important because its fit establishes an upper limit for the higher-order models (cf. Marsh, Antill, & Cunningham, 1989). As can be seen in Table 2, the fit of Model 1 is reasonable for both the identification and the energy dimensions. For both dimensions, the factor structure is well-defined in that all factor loadings were statistically significant and each of the four factors accounts for a significant portion of the variance.

The aim of the higher-order models is to describe correlations among first-order factors in terms of higher-order factors. Three different second-order models were tested. In Model 2, the four first-order factors of the identification dimensions were used to define an overall identification factor (assuming a bipolar dimension). In Model 3, MBI-cynicism and OLBI-disengagement loaded on a distancing second-order factor, while UWES-dedication and OLBI-dedication loaded on a dedication second-order factor (assuming a unipolar dimension). The second-order factors were allowed to correlate. In Model 4 we tested the discriminant validity of the two second-order latent factors (of Model 3) by constraining their correlation to be 1 (implying identical constructs, cf. Bagozzi, 1993). Following the same logic we tested parallel models for the energy dimensions using the respective four first-order factors. All models were nested in Model 1 so that none can fit the data better than the first-order factors model but they were more parsimonious in that they included fewer parameters.

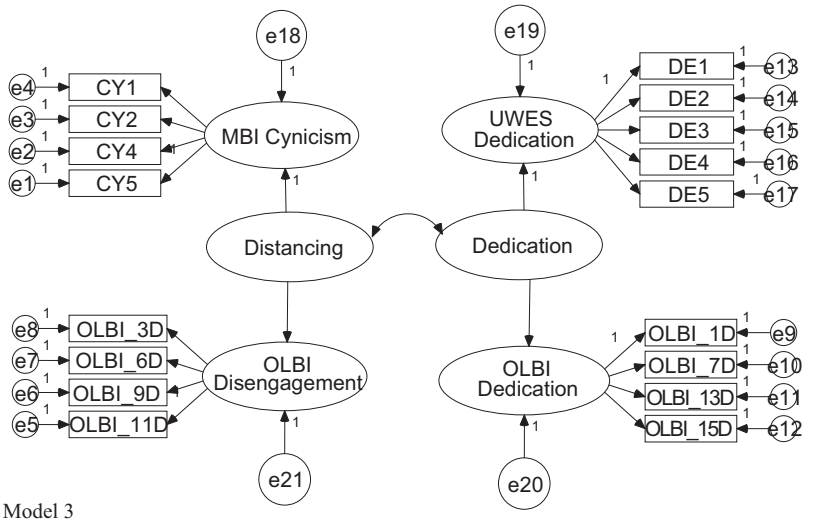
First, we discuss results regarding the identification dimensions. Model 2, including a single higher-order factor, fitted the data significantly worse than Model 1. This means that much of the variation among the first-order factors is unexplained by a global identification factor. Model 3 (positing two higher-order factors) provides a better fit to the data than the one-factor model (Model 2) and is not significantly worse than the first-order factors model



Model 1



Model 2



Model 3

Figure 1. Hierarchical models of the structure of responses to all identification dimensions of burnout and work engagement.

Table 2
Goodness-of-Fit Indices (Maximum-Likelihood Estimates) for the Confirmatory Factor Analyses

Model	χ^2	df	*p*	AGFI	RMSEA	TLI	CFI
Identification dimensions							
1. First-order factors	332.90	113	.001	.90	.06	.92	.93
2. One second-order factor	368.88	115	.001	.89	.07	.91	.92
3. Two second-order factors	334.01	114	.001	.90	.06	.92	.93
4. Two second-order factors constrained	336.60	115	.001	.90	.06	.92	.93
Null	3331.26	136	—	.26	.21	—	—
Energy dimensions							
1. First-order factors	496.51	146	.001	.87	.07	.87	.89
2. One second-order factor	521.18	148	.001	.87	.07	.86	.88
3. Two second-order factors	497.52	147	.001	.87	.07	.87	.89
4. Two second-order factors constrained	507.35	148	.001	.87	.07	.87	.88
Null	3242.47	171	—	.32	.20	—	—

Note. $N = 528$. χ^2 = chi square; df = degrees of freedom; AGFI = adjusted goodness of fit index; RMSEA = root mean square error of approximation; TLI = Tucker Lewis index; CFI = comparative fit index.

(Model 1). This would suggest that distancing and dedication are distinguishable (i.e., not representing two ends of a bipolar construct). However, the estimated correlation between the second-order factors was high (-.83). Indeed, the model (Model 4) that assumed no discriminant validity between the second-order factors, distancing and dedication, was not significantly worse than Model 3, which included two correlated second-order factors, $\Delta\chi^2$ (1) = 2.59, *ns*, or Model 1, the first-order factor model ($\Delta\chi^2$ (2) = 3.70, *ns*). This suggests that distancing and dedication are opposite ends of one dimension supporting Hypothesis 1.

The results for the energy dimension were somewhat different. Again Model 2, positing a single second-order factor showed a worse fit to the data than Model 1. Model 3, positing two higher-order factors of exhaustion and vigor, did not fit worse to the data than Model 1 ($\Delta\chi^2(1) = 1.01$, *ns*). This indicates that exhaustion and vigor are distinguishable. The estimated correlation was high (−.81), which implies that exhaustion and vigor overlap substantially. Constraining the correlation between the higher order factors, exhaustion and vigor, to be equal to one resulted in a slightly worse fit of the model—that is, Model 4 was significantly worse than both Model 3 ($\Delta\chi^2(1) = 9.83$, $p < .01$), including two distinguishable higher order factors, and Model 1, the first-order factor model ($\Delta\chi^2(2) = 10.84$, $p < .01$). Thus, the energy components seem to form two distinguishable yet highly related dimensions.

Relations of Burnout and Work Engagement With Other Constructs

If burnout and work engagement are each other's opposite, they should be equally strong related to other constructs but in the opposite direction. We focused on work pressure, autonomy, organizational commitment, and mental health. The examination is accomplished by adding each construct (as latent factors with manifest variables) separately to Model 2 (including one second-order factor) and Model 3 (including two second-order factors) considered in the previous section and by allowing them to correlate with the second-order factors. Additionally, age and gender were included as control variables with paths to each manifest variable. Table 3 displays the estimated standardized correlations.

Work pressure. The work pressure latent factor was inferred from three item parcels (each representing the average of two items) as manifest variables. When work pressure was added to Model 2, it was unrelated to the identification second-order latent factor but was significantly related to the second-order latent factor of vigor/exhaustion. When two second-order latent factors were posited, work pressure was positively related to the exhaustion factor and unrelated to the vigor factor. Again, it was unrelated to the distancing and engagement factors. Thus, Hypothesis 3 is confirmed for work pressure since it is unrelated to both distancing and dedication. On the contrary, Hypothesis 4 should be rejected for work

Table 3
Relations (Estimated Correlations) of Higher Order Energy and Identification Factors to Work Pressure, Autonomy, Organizational Commitment, and Mental Health After Controlling for Gender and Age

	Models containing one higher order factor		Models containing two higher order factors			
	Energy[1]	Identification[1]	Exhaustion	Vigor	Distancing	Dedication
Work pressure	−.20	.01[#]	.28[a]	.02[#b]	.10[#]	.05[#]
Autonomy	.44	.41	−.38[a]	.46[b]	−.36[a]	.40[b]
Organizational commitment	.48	.67	−.41[a]	.55[b]	−.59[a]	.65[b]
Mental health	.79	.56	−.77[a]	.68[b]	−.62[a]	.47[b]

Note. All correlations were significant at $p < .001$ except for the correlations marked with the # symbol.
[1] High scores indicate high work engagement (i.e. high energy and high identification level).
[a,b] Means with different superscripts differ significantly at the $p < .05$ level (as calculated through AMOS by means of critical ratios for differences).

pressure because it shows differential relationships with the exhaustion and vigor factors.

Autonomy. The autonomy latent factor was inferred from three item parcels (each representing the average of two items) as manifest variables. Autonomy was related to both the identification and the energy second-order latent factors. When two higher order factors of attitudes were posited (i.e., Model 2), the dedication-autonomy correlation was similar to the distancing-autonomy correlation. However, the vigor-autonomy correlation was significantly higher than the exhaustion-autonomy correlation. Thus, autonomy showed the same pattern of relationships with both identification components, substantiating Hypothesis 3, but a more differentiated pattern for the two energy components, rejecting Hypothesis 4.

Organizational commitment. Using the five items we built three parcels to operationalize the latent factor of commitment. Organizational commitment had a stronger correlation with the identification factor than with the energy factor. When two higher-order identification factors were posited they showed a similar relationship with commitment. When two higher-order energy factors were included, the vigor-commitment correlation was significantly stronger than the exhaustion-commitment correlation. Thus, similar to the findings regarding autonomy, organizational commitment showed the same pattern of relationships with both identification components, substantiating Hypothesis 3, and a differentiated pattern for the two energy components, rejecting Hypothesis 4.

Mental health. The mental health factor was inferred from four item parcels (each representing the average of seven items belonging to one dimension) as manifest variables. Mental health was significantly related to the second-order factors of attitudes and energy. However, the correlation was stronger for the energy factor. The model including separate exhaustion and vigor second-order factors showed that the correlation between exhaustion and mental health was stronger than the correlation between vigor and mental health. Similarly, mental health was stronger related to disengagement than to dedication. Contrary to Hypotheses 3 and 4, mental health is stronger related to the negatively worded dimensions.

Common Method Variance

As with all self-report data, there is the potential for the occurrence of method variance. Two tests were conducted to determine the extent of method variance in the current data. First, a Harmon one-factor test was conducted (Podsakoff & Organ, 1986) in two series of analysis: (a) all energy items and the items of each of the other constructs separately and (b) all identification items and the items of each of the other constructs. Results from these tests suggested the presence of at least five factors in each analysis, indicating that common method effects were not a likely contaminant of the results observed in our study. To confirm these results, additional analyses were performed to test for common method variance following the procedure used by Williams, Cote, and Buckley (1989). We compared Model 3, including the additional constructs and the control variables, with a model including additionally a single method factor. Results indicated that while the method factor did improve model fit in four of the seven cases (the model with energy items and work pressure could not be estimated), it accounted for a small portion (10%) of the total variance, which is

less than half the amount of method variance (25%) observed by Williams et al. (1989). Both tests suggest that common method variance is not a pervasive problem in this study.

Discussion

The aim of this study was to examine whether the dimensions of burnout and work engagement are bipolar constructs representing each other's opposite. In order to investigate this we used the MBI-GS (measuring burnout using negatively formulated items only), the UWES (measuring work engagement using positively formulated items only), and the OLBI (measuring both burnout and work engagement as bipolar constructs using positively and negatively formulated items). Practically, these scales measure parallel dimensions using items with overlapping content. In addition, we examined the relationships of the derived dimensions to work pressure, autonomy, organizational commitment, and mental health.

Taken together, the results inhibit us from providing a simple answer to the question whether burnout and work engagement are bipolar constructs. Our findings indicate that we should answer this question for each dimension separately. While the identification dimensions of burnout (cynicism/disengagement) and work engagement (dedication) seem to be each other's opposite, the energy dimensions (exhaustion vs. vigor) seem to represent two separate but highly related constructs. This conclusion can be justified both on the basis of the CFA findings, and the pattern of relationships with other constructs.

According to the CFA findings, constraining the correlation between the second-order latent factors of the identification dimensions to be one did not make the model inferior to a model without this restriction. This means that their correlation was so high that we can assume that the constructs practically overlap. This finding agrees with González-Romá et al.'s (2006) findings who used nonparametric methods to assess the dimensionality of two of the three instruments included in our study (MBI-GS and UWES). For the energy dimensions, however, constraining the correlation of the two second-order latent factors to one resulted in a significantly worse model fit. Although the bivariate and estimated correlation between exhaustion and vigor was high, they do not seem to form quite two opposites of one continuum. This finding also agrees with González-Romá et al. (2006) who found that the exhaustion and vigor items constitute a weak to moderate energy dimension.

Findings regarding the relationships between the burnout and work engagement dimensions and hypothetical predictors and outcomes showed a similar picture. Expanding González-Romá et al.'s (2006) findings, results showed that work pressure, autonomy, and organizational commitment have equally strong relationships with distancing and dedication, but in an opposite fashion. Only mental health turned out to be somewhat stronger related to distancing than to dedication. This does not seem to be an artifact of the item formulation because the GHQ-28 includes both positively and negatively worded items. These findings largely support the idea that distancing and dedication represent a bipolar construct ("identification") since they show no substantial differences in the pattern of relationships with other relevant constructs. In contrast, vigor and exhaustion show a different pattern of relationships with work pressure, autonomy, organizational commitment, and mental health. Autonomy and commitment are stronger related to vigor than to exhaustion, whereas work pressure and mental health are stronger related to exhaustion than to vigor. These findings further substantiate the argument that vigor and exhaustion represent independent dimensions.

The logical question now is how can we make sense of these findings? The finding that the distancing and dedication factors represent two ends of one construct is not very surprising because people can either hold negative or positive attitudes toward their work. It seems unlikely that they endorse both simultaneously. This is also justified by the distribution of the scores across the identification dimensions. Thus, responses to the identification items of burnout and work engagement constructs seem to follow the structure of the circumplex of emotions as suggested by Watson and Tellegen (1985) where distancing and dedication are considered as two opposites of one continuum. In addition, Cacioppo and Berntson (1994) have argued that the evaluative space in which attitudes exist is two-dimensional, corresponding to the dimensions of the Watson and Tellegen model.

On the contrary, the energy dimensions as operationalized by the various instruments seem to contain different aspects. This applies particularly to the operationalizations of vigor. While OLBI-vigor is measured with items like "After working, I have enough energy for my leisure activities" or "When I work, I usually feel energized," a typical item of UWES-vigor is "At my work, I feel bursting with energy." The difference between these items is that OLBI conceives vigor as having sufficient energy reserves during and after work while UWES views vigor as

having a *surplus* of energy reserves while being at work. Moreover, vigor, as defined by Schaufeli and Bakker (2003, 2004), in addition to the core meaning of high energy levels, seems to include a motivational element as well (i.e., the willingness to invest effort). Thus, conceptually and psychometrically, at least UWES-vigor is not exactly the opposite of exhaustion as measured with the MBI-GS because it also contains motivational aspects.

In light of these findings we could suggest that reporting different scores for the identification components of burnout and work engagement does not seem necessary since they more likely represent the same construct. Our findings suggest using two different scores for MBI-exhaustion and UWES-vigor, because these scales measure two different but highly (negatively) related constructs. Alternatively, the OLBI instrument could be used, which has been proven to contain two factors of exhaustion and disengagement (or, positively framed, vigor and engagement) (Demerouti et al., 2003; Demerouti & Bakker, 2008) operationalized by positively and negatively worded items, thus capturing both ends of the continuum. Note that it is necessary to use the *total* scores for the exhaustion/vigor and for the engagement/ disengagement dimensions and not to split them as was done in the present study (cf. low reliability of OLBI vigor).

Limitations and Future Research

The first limitation of the study is its reliance on self-report, cross-sectional data. While it provides a useful consideration of the factor structure of the different instruments, it cannot address the validity issues requiring a diversity of measurement formats. By conducting two different tests we found that responses to the items were not seriously influenced by an artificial common method factor. However, future studies aiming to examine dimensionality issues need to integrate data from other sources of information such as objective absenteeism in order to minimize common method artifacts.

Several aspects of the study raise concerns regarding the generalizability of our results. Specifically, although the sample of participants represented a diverse number of jobs (e.g., employees in different business units and departments), our sample is restricted to employees of the construction industry and has not been randomly selected from the full range of possible occupations. Moreover, our sample was overrepresented by White, middle-aged men. Future studies might focus more exclusively on other groups in South Africa (e.g., Black, Colored, and Indian) from all age groups and in different sectors. However, the findings seem generally consistent with González-Romá et al. (2006) who conducted their research in The Netherlands with Dutch language instruments.

Another possible drawback of this study is that the use of the English language for the questionnaires could also have a detrimental influence on the results of the study because of the possibility of misunderstanding and misinterpretation of items from those participants for whom English is not their first language. In order to minimize the influence of this possible drawback, we explained the meaning of words that could have possible been misunderstood in footnotes. In order to reject the possibility that our findings are influenced by the instruments that we utilized, testing dimensionality issues with other scales would put our hypotheses to an even more robust test. However, the existing alternatives—that is, the instruments of Shirom (2003) and Kristensen et al. (2005) —focus only on the exhaustion dimension. A related drawback concerns the low reliability ($< .70$) of the UWES-vigor scale and OLBI-vigor subscale. This might be due to the previous limitations, sampling error and misunderstanding of the items. Note, however, that the OLBI-vigor subscale is not supposed to be analyzed separately from OLBI-exhaustion. Together, the items form a reliable scale.

A final potential drawback concerns the way of analysis. First, as we conducted analysis for the energy and the identification dimensions separately, this has implications for establishing construct validity as for example, the relationships between the dimensions could not be controlled for. Second, when we conducted linearity tests of means comparison we found that of the 162 comparisons, 41 pairs showed a significant deviation from linearity at $p < .003$ (applying Bonferroni correction). In 21 of all significant deviations from linearity, three items of UWES-vigor were involved. Strictly speaking, we would have to eliminate UWES-vigor from the analysis or conduct nonparametric analyses. However, because only one of the six scales seems to show nonlinear relationships with items of the other scales, we decided to keep this scale in the analysis and to continue with CFA instead of nonparametric tests.

The practical importance of uncovering whether burnout and work engagement are each other's opposite concerns mainly psychometric issues within organizational studies. Organizations need to have short and valid screening instruments to evaluate the

occupational health of their employees. If burnout and work engagement can partly be conceived as each other's opposites, this means that a fewer number of items are necessary to measure them. This implies that they have partly the same and partly different possible antecedents.

Conclusion

The present study offers evidence for the reliability and construct validity of a new instrument to assess burnout and work engagement. The Oldenburg Burnout Inventory (OLBI) captures the same constructs as assessed with the alternative measurement instruments MBI-GS (that assesses only burnout) and UWES (that assesses only work engagement). This means that the OLBI is a reasonable alternative that can be used to assess burnout and work engagement simultaneously. We hope that the present study encourages the use of the OLBI (see Appendix), but also further stimulates our understanding of the fascinating phenomena of burnout and work engagement.

References

Arbuckle, J. L. (2006). *Amos (Version 7.0)* [Computer Program]. Chicago: SPSS.

Bagozzi, R. P. (1993). An examination of the psychometric properties of measures of negative affect in the PANAS-X scales. *Journal of Personality and Social Psychology, 65,* 836–851.

Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2002). The validity of the Maslach Burnout Inventory - general survey: An internet study. *Anxiety, Stress, and Coping, 15,* 245–260.

Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management, 43,* 83–104.

Bentler, P. M., & Chou, C. P. (1987). Practical issues in structural modeling. *Social Methods & Research, 16,* 78–117.

Cacioppo, J. T., & Berntson, G. G. (1994). Relationship between attitudes and evaluative space: A critical review, with emphasis on the separability of positive and negative substrates. *Psychological Bulletin, 115,* 401–423.

Demerouti, E. (1999). *Burnout: Eine Folge Konkreter Abeitsbedingungen bei Dienstleistungs und Produktionstdtigkeiten.* (Burnout: A consequence of specific working conditions among human service and production tasks). Frankfurt/Main: Lang.

Demerouti, E., & Bakker, A. B. (2008). The Oldenburg Burnout Inventory: A good alternative to measure burnout and engagement. In J. Halbesleben (Ed.), *Stress and burnout in health care* (pp. 65–78). Hauppage, NY: Nova Sciences.

Demerouti, E., Bakker, A. B., & Bulters, A. J. (2004). The loss spiral of work pressure, work-home interference and exhaustion: Reciprocal relations in a three-wave study. *Journal of Vocational Behavior, 64,* 131–149.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Ebbinghaus, M. (2002). From mental strain to burnout. *European Journal of Work and Organizational Psychology, 11,* 423–441.

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.

Demerouti, E., Bakker, A. B., Vardakou, I., & Kantas, A. (2003). The convergent validity of two burnout instruments: A multitrait-multimethod analysis. *European Journal of Psychological Assessment, 19,* 12–23.

Demerouti, E., & Nachreiner, F. (1996). Reliabilität und Validität des Maslach Burnout Inventory (MBI): Eine kritische Betrachtung [Reliability and validity of the Maslach Burnout Inventory: A critical note]. *Zeitschrift für Arbeitswissenschaft, 50,* 32–38.

Demerouti, E., & Nachreiner, F. (1998). Zur Spezifität von Burnout für Dienstleistungsberufe: Fakt oder Artefakt? [The specificity of burnout in human services: Fact or artifact?]. *Zeitschrift für Arbeitswissenschaft, 52,* 82–89.

Doty, D. H., & Glick, W. H. (1998). Common methods bias: Does common methods variance really bias results? *Organizational Research Methods, 1,* 374–406.

Goldberg, R. J., & Williams, P. (1988). *A user's guide to the General Health Questionnaire.* Windsor, U.K.: NFER-Nelson.

González-Romá, V., Schaufeli, W. B., Bakker, A. B., & Lloret, S. (2006). Burnout and work engagement: Independent factors or opposite poles? *Journal of Vocational Behavior, 62,* 165–174.

Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology, 43,* 495–513.

Halbesleben, J. R. B., & Demerouti, E. (2005). The construct validity of an alternative measure of burnout: Investigating the English translation of the Oldenburg Burnout Inventory. *Work & Stress, 19,* 208–220.

Jackson, L. T. B., & Rothmann, S. (2005). Work-related well-being of educators in a district of the North-West Province. *Perspectives in Education, 23,* 107–122.

Karasek, R. A. (1985). *Job content instrument: Questionnaire and user's guide.* Los Angeles: Dept. of Industrial and Systems Engineering, University of Southern California.

Koekemoer, F. E., & Mostert, K. (2006). Job characteristics, burnout and negative work-home interference. *South African Journal of Industrial Psychology, 32,* 87–97.

Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress, 19,* 192–207.

Lee, R. T., & Ashforth, B. E. (1990). On the meaning of Maslach's three dimensions of burnout. *Journal of Applied Psychology, 75,* 743–747.

Lee, R. T., & Ashforth, B. E. (1996). A meta-analytic examination of the correlates of the three dimensions of burnout. *Journal of Applied Psychology, 81,* 123–133.

Leiter, M. P., & Schaufeli, W. B. (1996). Consistency of the burnout construct across occupations. *Anxiety, Stress and Coping, 9,* 229–243.

Le Roux, A. M. (2005). *The validation of two burnout*

measures in the South African earthmoving equipment industry. Unpublished masters' dissertation, North-West University, Potchefstroom Campus, South Africa.

Lewig, K. A., Xanthopoulou, D., Bakker, A. B., Dollard, M. F., & Metzer, J. C. (2007). Burnout and connectedness among Australian volunteers: A test of the job demands-resources model. *Journal of Vocational Behavior, 71,* 429–445.

Llorens, S., Bakker, A. B., Schaufeli, W., & Salonova, M. (2006). Testing the robustness of the Job Demands–Resources model. *International Journal of Stress Management, 13,* 378–391.

Marsh, H. W., Antill, J. K., & Cunningham, J. D. (1989). Masculinity and femininity: A bipolar construct and independent constructs. *Journal of Personality, 57,* 625–663.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory manual* (*3rd ed.*). Palo Alto, CA: Consulting Psychologists Press.

Maslach, C., & Leiter, M. P. (1997). *The truth about burnout.* San Francisco: Jossey-Bass.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52,* 397–422.

Mauno, S., Kinnunen, U., & Ruokolainen, M. (2007). Job demands and resources as antecedents of work engagement: A longitudinal study. *Journal of Vocational Behavior, 70,* 149–171.

Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component model. *Journal of Applied Psychology, 78,* 538–551.

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management, 12,* 531–544.

Price, J. L., & Mueller, C. W. (1986). *Handbook of organizational measurement.* Marshfield, MA: Pitman.

Richardsen, A. M., & Martinussen, M. (2004). The Maslach Burnout Inventory: Factorial validity and consistency across occupational groups in Norway. *Journal of Occupational and Organizational Psychology, 77,* 1–20.

Rost, I. (2007). *Work wellness of employees in the earthmoving equipment industry.* Unpublished doctoral thesis, North-West University, Potchefstroom Campus, South Africa.

Rothmann, S., & Pieterse, J. (2007). Predictors of work-related well-being in sector education training authorities. *South African Journal of Economic and Management Sciences, 10,* 298–312.

Schaufeli, W. B., & Bakker, A. B. (2003). *UWES - Utrecht Work Engagement Scale: Test Manual.* Utrecht, The Netherlands: Department of Psychology, Utrecht University.

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.

Schaufeli, W. B., & Bakker, A. B. (2010). Defining and measuring work engagement: Bringing clarity to the concept. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 10–24). New York: Psychology Press.

Schaufeli, W. B., Leiter, M. P., Maslach, C., & Jackson, S. E. (1996). The Maslach Burnout Inventory-General Survey. In C. Maslach, S. E. Jackson, & M. P. Leiter (Eds.), *Maslach Burnout Inventory.* Palo Alto, CA: Consulting Psychologists Press.

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.

Schutte, N., Toppinen, S., Kalimo, R., & Schaufeli, W. B. (2000). The factorial validity of the Maslach Burnout Inventory–General Survey (MBI–GS) across occupational groups and nations. *Journal of Occupational and Organizational Psychology, 73,* 53–66.

Shirom, A. (2003). Job-related burnout. In J. C. Quick, & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 245/265). Washington, DC: American Psychological Association.

Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between non-work and work. *Journal of Applied Psychology, 88,* 518–528.

Storm, K., & Rothmann, S. (2003). A psychometric analysis of the Maslach Burnout Inventory-General Survey in the South Africa Police Service. *South African Journal of Psychology, 33,* 219–226.

Van Abswoude, A. A. H., Vermunt, J. K., Hemker, B. T., & Van der Ark, L. A. (2004). Mokken scale analysis using hierarchical clustering procedures. *Applied Psychological Measurement, 28,* 332–354.

Van Veldhoven, M., Meijman, T. F., Broersen, J. P. J., & Fortuin, R. J. (1997). *Handleiding VBBA: Onderzoek naar de beleving van psychosociale arbeidsbelasting en werkstress met behulp van de vragenlijst beleving en beoordeling van de arbeid* [Manual VBBA: Research on the experience of psychosocial work load and job stress with the Questionnaire on the Experience and Evaluation of Work]. Amsterdam: SKB.

Watson, D., & Tellegin, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98,* 219–235.

Williams, L. J., Cote, J. A., & Buckley, M. R. (1989). Lack of method variance in self-reported affect and perceptions at work: Reality or artifact? *Journal of Applied Psychology, 74,* 462–468.

Yi-Wen, Z., & Yi-Qun, C. (2005). The Chinese version of Utrecht Work Engagement Scale: An examination of reliability and validity. *Chinese Journal of Clinical Psychology, 13,* 268–270.

(*Appendix follows*)

Appendix

Oldenburg Burnout Inventory

Instruction: Below you find a series of statements with which you may agree or disagree. Using the scale, please indicate the degree of your agreement by selecting the number that corresponds with each statement

	Strongly agree	Agree	Disagree	Strongly disagree
1. I always find new and interesting aspects in my work.	1	2	3	4
2. There are days when I feel tired before I arrive at work.	1	2	3	4
3. It happens more and more often that I talk about my work in a negative way.	1	2	3	4
4. After work, I tend to need more time than in the past in order to relax and feel better.	1	2	3	4
5. I can tolerate the pressure of my work very well.	1	2	3	4
6. Lately, I tend to think less at work and do my job almost mechanically.	1	2	3	4
7. I find my work to be a positive challenge.	1	2	3	4
8. During my work, I often feel emotionally drained.	1	2	3	4
9. Over time, one can become disconnected from this type of work.	1	2	3	4
10. After working, I have enough energy for my leisure activities.	1	2	3	4
11. Sometimes I feel sickened by my work tasks.	1	2	3	4
12. After my work, I usually feel worn out and weary.	1	2	3	4
13. This is the only type of work that I can imagine myself doing.	1	2	3	4
14. Usually, I can manage the amount of my work well.	1	2	3	4
15. I feel more and more engaged in my work.	1	2	3	4
16. When I work, I usually feel energized.	1	2	3	4

Note. Disengagement items are 1, 3(R), 6(R), 7, 9(R), 11(R), 13, 15. Exhaustion items are 2(R), 4(R), 5, 8(R), 10, 12(R), 14, 16. (R) means reversed item when the scores should be such that higher scores indicate more burnout.

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