Journal of Work and Organizational Psychology

http://journals.copmadrid.org/jwop

Utrecht Work Engagement Scale in Dominican Teachers: Dimensionality, Reliability, and Validity

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ABSTRACT

Work engagement is described by dedication, vigor, and absorption. The most widely used measure of engagement is the Utrecht Work Engagement Scale (UWES), intended to measure engagement for any occupational group. This research aims to study psychometric properties of the UWES for its use in the Dominican Republic and other Caribbean Spanish-speaking countries. The Composite Reliability Index (CRI) as well as alphas were calculated, indicating good internal consistency. Confirmatory factor analyses were carried out to test its dimensionality. Both tested models showed extremely good fit to the data, which called for model comparison. The three-factor solution was retained as the one showing the best relative fit. However, the three dimensions of the scale were largely correlated, providing evidence for some overlapping. Regarding criterion-related validity, the three factors were correlated as expected with the three dimensions of burnout, working climate, and working conditions.

Escala de Utrecht de implicación en el trabajo en los profesores dominicanos: dimensionalidad, fiabilidad y validez

RESUMEN

La implicación en el trabajo se describe por la dedicación, el vigor y la absorción. La medida más utilizada de implicación es la Escala de Utrecht de Implicación en el Trabajo (UWES), cuyo propósito es medir la implicación en cualquier grupo ocupacional. Esta investigación tiene como objetivo estudiar las propiedades psicométricas de la UWES para su uso en la República Dominicana y otros países del Caribe de habla hispana. Se calculó el Índice de Fiabilidad Compuesto (CRI), así como el alfa, indicando una buena consistencia interna. Se llevaron a cabo análisis factoriales confirmatorios para probar su dimensionalidad. Ambos modelos se ajustaron muy bien a los datos, lo que llevó a la comparación entre estos. La solución de tres factores resultó ser la que mostraba el mejor ajuste relativo. Sin embargo, las tres dimensiones de la escala se correlacionaban en buena medida, lo que prueba evidencia de solapamiento. En relación con la validez de criterio, como se esperaba, los tres factores correlacionaron con las tres dimensiones de *burnout*, con el clima de trabajo y con las condiciones de trabajo.

Work engagement is a relatively young concept. Since the beginning of the 21st century, there has been an increasing trend towards positive psychology. In this way, there has been a shift in attention from ill-health and unwellbeing towards the promotion of health and wellbeing. For this reason, occupational psychology has started to focus its attention on the positive aspects of work and, among those, on work engagement. Work engagement has been defined as a positive, encouraged, and accomplished attitude towards the job, characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Vigor is illustrated by the presence of mental resilience and high levels of energy at the workplace, as well as the motivation to invest effort in one's work despite all opposition. Dedication relates to "being strongly involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge" (Schaufeli & Bakker, 2003, p. 5). Finally, the third dimension, absorption, refers to achieving high levels of concentration and the sense that time passes quickly while being at work, to the point that it becomes difficult to detach oneself from work. Schaufeli, Taris, and van Rhenen (2008) have compared absorption to the concept of flow, a fully focused state of mind

(Csikszentmihalyi, 1990). However, these researchers note that the concept of absorption is one of a more pervasive and persistent nature.

Burnout may be seen as a natural criterion for the validity of work engagement dimensions, as burnout is defined as a state of mental and physical exhaustion characterized by feelings of emotional exhaustion and cynicism, as well as a reduced feeling of personal accomplishment.

Accordingly, Maslach and Leiter (1997) argued that vigor and dedication could be conceived respectively as the opposite poles of emotional exhaustion and cynicism. Later on, Schaufeli et al. (2002) labelled the first dimension as energy and the second one as identification. Still, there is an alternative theoretical position that argues that burnout and work engagement are distinct concepts and therefore should be assessed independently (Schaufeli & Bakker, 2001). Either approach allows for burnout dimensions to be used as validity criteria for work engagement.

Work engagement has been measured by two main scales. The Oldenburg Burnout Inventory (OLBI; Demerouti & Nachreiner, 1998) and the Utretch Work Engagement Scale (UWES; Schaufeli & Bakker, 2003). The OLBI was originally developed for the assessment of burnout but some researches argue that it can also be used to measure engagement (Bakker, Schaufeli, Leiter, & Taris, 2008). Following this perspective, the scale can be considered to measure two dimensions: the energy (exhaustion-vigor) dimension and the identification (cynicism-dedication) dimension. This scale is in line with the theoretical proposition of work engagement and burnout as being opposite poles of the same general construct (Maslach & Leiter, 1997). The UWES is the most widely used instrument to measure engagement with the workplace that assesses work engagement as an independent construct composed by three inter-related factors: vigor, dedication, and absorption. There are two versions of this scale. The original version, developed by Schaufeli and Bakker (2003), which is composed by 17 items, and a shortened one, developed by Schaufeli, Bakker and Salanova (2006), containing 9 items.

The UWES has been validated in several countries, including the Netherlands (Xanthopoulou, Bakker, Demerouti, & Kantas, 2012), Finland (Seppälä et al., 2008), Norway (Nerstad, Richardsen, & Martinussen, 2009), Italy (Balducci, Fraccaroli, & Schaufeli, 2010), Greece (Xanthopoulou et al., 2012), China (Fong & Ng, 2011), Japan (Shimazu et al., 2008), Switzerland (Zecca et al., 2015), Malaysia (Shahrazad Wan Sulaiman & Aisyah Zahoni, 2016) and Nepal (Panthee, Shimazu, & Kawakami, 2014). Regarding Spanish-speaking samples, the UWES has been validated in Argentina (Spotón, Mendrano, Maffei, Spotón, & Castellano, 2012) and Puerto Rico (Rodríguez-Montalbán, Sánchez-Cardona, & Martínez-Lugo, 2014). Those validations had mixed results. For both the UWES-17 and the UWES-9, the three factor model is generally chosen as the one showing the best fit. In some of the studies (Fong & Ng, 2011; Panthee et al., 2014) both the one-factor and the three-factor solution showed adequate fit, but the three-factor solution was ultimately retained as the result of better model comparison.

This study is aimed at examining the psychometric properties of the Spanish version of the UWES for its use in the Dominican Republic and other Caribbean Spanish-speaking countries, based on a representative and large sample of Dominican teachers. Validations with representative samples of occupational groups, such as teachers, at a national level are rare. There has been an abundance of validations in western countries but this scale's properties have been proven in only a few South American countries (Rodríguez-Montalbán et al., 2014; Spotón et al., 2012). The particular objectives are threefold: a) to establish the factor structure of the UWES, b) to estimate the reliability of the scale, and c) to offer evidence on its criterion-related and nomological validity. The hypotheses of this study are: a) the theoretical three factor structure of UWES (vigor, dedication, and absorption) will fit the data well; b) the three dimensions of work engagement will correlate positively and high with the two second order factors of the Q-Labors scale, working climate, and working environment; and c) there will be positive and high correlations among the three dimensions of engagement and professional efficacy (as measured by the MBI-GS), and negative and high correlations among dimensions of engagement and dimensions of cynicism and emotional exhaustion (also measured by the MBI-GS).

Method

Sample, Design, and Procedure

Data come from a cross-sectional survey of teachers from the Dominican Republic. Stratified sampling with proportional allocation was carried out, and simple random sampling was applied within each stratum. Strata were educational districts. The margin of error and the confidence level to obtain the sample size were 3% and 95%, respectively. The sample size needed was a total of 931. Up to a 5% of the sample was predicted not to complete the data-gathering process due to unpredictable circumstances and sample size was proportionally increased accordingly. Thus, the final aimed sample size was 978 (931*1.05). Their average age was 42.9 years old (*SD* = 8.7); 73.65% were women. With respect to the marital status: 24.8% were single, 63.3% were married, 5.5% were divorced, 3.8% were separated, and finally, 2.6% were widow/widower.

Instruments

The battery included multiple job-related questionnaires, as well as socio-demographic information. For the purposes of this research three scales were used.

The Maslach Burnout Inventory-General Survey (Schaufeli, Leiter, Maslach, & Jackson, 1996). This questionnaire is composed by 16 items covering three dimensions: cynicism, emotional exhaustion, and professional efficacy. The questionnaire is measured using a Likert scale, ranging from one (*totally disagree*) to five (*totally agree*). Internal consistency as estimated with the Composite Reliability Index (CRI; Raykov, 2004) showed estimated values of .78 for emotional exhaustion, .86 for professional efficacy, and .74 for cynicism. An a priori confirmatory factor analysis reasonably supported the three-factor structure with the following fit indices and statistics: χ^2 = 612.87, df = 101, p < .001, RMSEA = .072 (.067-.078) and CFI = .93.

The Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003). The UWES is a 17-item instrument, again Likert-type, ranging from one (*completely disagree*) to five (*completely agree*). Theoretically, six items measure vigor (1, 4, 8, 12, 15, 17), five others are indicators of dedication (2, 5, 7, 10, 13), and six conform to absorption (3, 6, 9, 11, 14, 16). Example items of vigor are: "At my work, I feel bursting with energy" or "At my job, I am very resilient, mentally". Dedication includes items such as "I find the work that I do full of meaning and purpose" and "I am proud on the work that I do". Finally the dimension of absorption is tapped by items such as "Time flies when I'm working" or "It is difficult to detach myself from my job".

The Q-Labors Scale (Casas, Repullo, Lorenzo, & Cañas, 2002), consists of 58 sentences with responses in the form of a Likert scale with five options (*completely disagree* to *completely agree*). It measures eight first order dimensions of work life quality: hierarchical relations, interpersonal relations, personal fulfillment, planning and management, timetable and personal life, physical and technological environment, workload, and management concern with the worker. These eight first order factors may be aggregated into two second order dimensions, namely work climate that comprises the first factors, and working conditions on which the other four factors loaded. These two second order dimensions were used for nomological validity estimates. Internal consistency estimated

with the Composite Reliability Index was .89 for work climate and .84 for working conditions. An a priori second order confirmatory factor analysis supported the structure with the following fit indices and statistics: χ^2 = 7337.49, df = 1943, p < . 001, RMSEA = .05 (.049-.051) and CFI = .92.

Statistical Analyses

Two a priori confirmatory factor analyses were specified: the theoretical three factor model and the more parsimonious one factor model. These models were estimated with robust maximum likelihood estimation (MLR), given the strong non-normality and with weighted least square mean and variance corrected (WLSMV) given the ordinal nature of the data. Both types of estimation work well with non-normal data, but WLSMV works better with non-normal and ordinal data (Finney & DiStefano, 2006). However, WLSMV does not compute the Bayesian information criteria (BIC), which is particularly relevant when comparing models. Therefore, both types of estimations were conducted. Model fit was assessed using several fit criteria: the chi-square statistic, the comparative fit index (CFI), the root mean squared error of approximation (RMSEA), the standardized root mean square residual (SRMR), and the Bayesian information criteria (BIC). BIC is used to compare models with a lower score indicating better relative fit. Cut-off criteria for reasonable fit were a CFI of at least .90, RMSEA less than .06, and SRMR less than .08 (Hu & Bentler, 1999). In addition, Cronbach's alpha and composite reliability indexes (CRI) were used to estimate internal consistency of the scale. Finally, criterion-related validity between burnout and work engagement was tested. Data analyses were conducted with SPSS 21 and Mplus 6.

Results

Internal Consistency and Factorial Validity

As a first result, descriptive statistics were calculated. Means, standard deviations, and correlations among the 17 items in the UWES scale are presented in Table 1. Means are, in general, quite high, and correlations are consistently statistically significant.

Then two a priori competitive models were tested in order to examine factorial validity. Model 1 portrays a unidimensional measure of engagement while Model 2 depicts the theoretical three-factor structure (vigor, dedication, and absorption). The goodness-of-fit indexes of the two hypothesized models are presented in Table 2. A relevant result is that both models yielded an excellent fit. Thus, in order to choose the best fitting model, model comparison was carried out by means of the Bayesian information criterion (BIC). Results, also presented in Table 2, led to the three-factor model as the one to be chosen as the best representation of the data, as all indices, specially BIC, favored the three factor structure. Nevertheless, the very good fit of the model with the single dimension pointed out that probably the three dimensions were highly correlated. The correlations were extremely high indeed. Vigor and dedication correlated .99 with WLSMV estimation and .96 with MLR. Vigor and absorption were correlated .91 (WLSMV) and .85 (MLR). Finally, absorption and dedication correlated .86 with WLSMV estimation and .80 with MLR estimation. Standardized factor loadings obtained with both methods of estimation for the retained model, Model 2, are presented in Table 3.

Factor loadings allowed us to estimate internal consistency via the CRI index. CRIs were .85 (WLSMV) and .85 (MLR) for vigor, .85 (WLSMV) and .82 (MLR) for dedication, and .74 (WLSMV) and .85

Table 1. Means, Standard Deviation, and Correlation Matrix of the UWES' Items

Item	Mean	SD	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14	I15	I16
																	Correlation matrix	
I1	4.52	0.65																
I2	4.09	1.15	.13**															
I3	3.73	1.26	.13**	.13**														
I4	4.42	0.70	.54**	.13**	.14**													
I5	4.58	0.60	.51**	.19**	.14**	.58**												
I6	4.24	0.91	.35**	.13**	.15**	.36**	.41**											
I7	4.47	0.61	.39**	.26**	.13**	.38**	.37**	.28**										
I8	4.55	0.58	.47**	.15**	.14**	.52**	.57**	.35**	.47**									
I9	3.99	0.93	.20**	.09**	.20**	.21**	.24**	.25**	.29**	.29**								
I10	4.10	0.87	.34**	.08*	.13**	.37**	.36**	.31**	.25**	.38**	.25**							
I11	4.70	0.52	.38**	.15**	.12**	.41**	.49**	.36**	.36**	.49**	.23**	.29**						
I12	3.85	1.08	.22**	.08**	.17**	.19**	.23**	.20**	.21**	.22**	.29**	.25**	.23**					
I13	4.26	0.86	.18**	.23**	.14**	.17**	.18**	.18**	.29**	.23**	.20**	.17**	.21**	.19**				
I14	4.62	0.52	.38**	.20**	.10**	.38**	.42**	.26**	.38**	.41**	.25**	.27**	.42**	.22**	.36**			
I15	4.30	0.73	.26**	.19**	.14**	.24**	.26**	.20**	.35**	26**	.26**	.18**	.23**	.24**	.32**	.35**		
I16	4.42	0.64	.39**	.17**	.09**	.44**	.42**	.27**	.40**	.42**	.22**	.38**	.35**	.20**	.26**	.42**	.39**	
I17	4.16	0.97	.22**	.05	.10**	.19**	.22**	.20**	.23**	.23**	17**	.18**	.20**	.17**	.16**	.26**	.26**	.28**

$^*p$ < .05, $^{**}p$ < .01.

Table 2. Goodness of Fit Indices for the Tested Models

Models	χ^2	df	p	CFI	RMSEA	90% CI	BIC	SRMR
			Robust WLSMV					
One factor	849.35	119	< .001	.953	.079	.074-.084		
Three factors	769.64	116	< .001	.958	.076	.071-.081		
			Robust ML					
One factor	454.77	119	< .001	.894	.054	.049-.059	34,831.60	.046
Three factors	411.44	116	<.001	.907	.051	.046-.056	34,793.92	.043

(MLR) for absorption. Following CRI, internal consistency of the scale can be considered adequate. Additionally, Cronbach's alphas were also estimated for the three-factor model of the UWES and the estimates were: .73 for vigor, .63 for dedication, and .58 for absorption.

Table 3. Standardized Factor Loadings for the Best-fitting Model

Item	Standardized WLSMV	Standardized MLR	Factor
1	.751***	.666***	Vigor
2	.453***	.268***	Dedication
3	.372***	.284***	Absorption
4	.794***	.703***	Vigor
5	.842***	.746***	Dedication
6	.664***	.552***	Absorption
7	.731***	.606***	Vigor
8	.823***	.740***	Dedication
9	.582***	.483***	Absorption
10	.597***	.517***	Vigor
11	.757***	.641***	Dedication
12	.526***	.433***	Absorption
13	.579***	.369***	Vigor
14	.773***	.612***	Dedication
15	.694***	.516***	Absorption
16	.738***	.631***	Vigor
17	.560***	.407***	Absorption

***$p < .001$.

Criterion-related and Nomological Validity

The correlations among the three engagement factors and their criteria (burnout dimensions) are presented in Table 4. The correlations were large, statistically significant, and in the expected direction. Vigor, absorption, and dedication positively correlated with professional efficacy and negatively with emotional exhaustion and cynicism. Additionally, work climate and working conditions were considered as nomological criteria, as positive relations are expected between good climate and conditions at work and feelings of engagement. These correlations are also shown in Table 4. The relationships were indeed positive, and larger in general with climate.

Table 4. Correlations of the Three Factors of Engagement with the Three Dimensions of Burnout (Emotional Exhaustion, Cynicism and Professional fficacy), Work Climate and Working Conditions

	Vigor	Dedication	Absorption
Emotional exhaustion	-.296***	-.209***	-.077*
Cynicism	-.707***	-.627***	-.488***
Professional efficacy	.246***	.250***	.061
Work climate	.529***	.495***	.349***
Working conditions	.330***	.298***	.217***

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

Discussion

A main conclusion of this study is that the internal consistency, structure, and validity of the UWES were very good in a large and representative sample of teachers in the Dominican Republic. Therefore, and given that this is the first validation of the UWES in the Dominican Republic, these are good news. Apparently, the UWES may be successfully employed in Central and South American countries in an important public service (teachers) and that makes a good psychometric behavior likely with other populations in the same context. Once the main conclusion is clear, going into details is needed. Internal consistency estimates, as measured by means

of CRI, were extremely good. Alphas estimates, on the other hand, showed less adequate results. However, it is well-known that CRI outperforms alpha as an internal consistency estimate (Raykov, 2004), so the results here presented are considered to support a good internal consistency of all dimensions of the UWES. This is consistent with the very good fit that the structural models had, with very large factor loadings.

Regarding factor structure, things were not so clear. On one hand, the theoretical three factor structure for the UWES was empirically supported, as the model fit was excellent. This is in line with all evidence from the developers of the scale (for example, Schaufeli & Bakker, 2003; Balducci et al., 2010) as well as many other validations (Nerstad et al., 2009; Rodríguez-Montalbán et al., 2014; Seppälä et al., 2008; Shahrazad Wan Sulaiman & Aisyah Zahoni, 2016; Shimazu et al., 2008; Spotón et al., 2012; Xanthopoulou et al., 2012; Zecca et al., 2015). On the other hand, several other researchers have found both support for a one-factor solution and the theoretical three-factor structure (Fong & Ng, 2011; Panthee et al., 2014), although it is also true that they finally adopted the three factor structure. This last evidence is the one supported by our data. Both models fitted the data extremely well and differences in fit were scarce. Moreover, there were extremely large correlations among the three dimensions, thus providing evidence of a huge overlapping among the engagement factors. We finally decided to retain the three factor structure, but more evidence is needed to know what the generalizability of this result is in other working populations in the Dominican Republic and other countries.

Finally, the criterion-related validity of the three dimensions was in accordance with expectations, as the relationships with the dimensions of burnout were large and in the expected direction. Either from the perspective supported by Maslach and Leiter (1997), in which vigor and dedication are conceived respectively as the opposite poles of emotional exhaustion and cynicism, or from the theoretical position that argues that burnout and work engagement are distinct concepts and therefore should be assessed independently (Schaufeli & Bakker, 2001), burnout is always a construct tightly related to work engagement. Finally, we also included two measures (work climate and working conditions) that could be considered part of the nomological net associated with engagement. In the case of work climate, there is evidence that a positive work climate predicts/ relates to an engaged worker (Putter, 2010), exactly the result found in our study. In the same vein, there is also extensive evidence on the strong relationships between working conditions such as job resources, including social support from colleagues and supervisors, performance feedback, skill variety, autonomy, or workload with work engagement (Bakker & Demerouti, 2007; Schaufeli & Salanova, 2007). Our results strongly support the positive association between good working conditions and engagement.

There is a large amount of accumulated evidence on the psychometric characteristics of the UWES. However, the new evidence we are presenting possesses two strengths. Firstly, all the analyses have been made in a representative sample of the population of teachers at national level in the Dominican Republic, and secondly, this sample represents an underrepresented population usually not covered in the (mainly) Western-European validations. In short, the UWES has been demonstrated to be a valid and reliable instrument for the measurement of engagement in a large and representative sample of teachers in a Central American country. The research also has limitations. Even though a cross-sectional study is enough to prove some psychometric properties as factor structure, internal consistency, and convergent/discriminant and/or nomological validity, other psychometric characteristics should be studied with a longitudinal (time-related) perspective, including the temporal stability of the scale and the stability of the factor structure along time, a stability that is needed in order to make meaningful comparisons among time points (for example

when treatments or intervention effects are to be studied). Additionally, comparison of these psychometric properties in other occupational groups from the Dominican Republic should be welcomed. Finally, further research is needed to disentangle if the large degree of overlapping among dimensions is sample/population/country specific or general across populations.

Conflict of Interest

The authors of this article declare no conflict of interest.

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