

An ultra-short measure for work engagement: The UWES-3.
Validation across five countries

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ABSTRACT

The current study introduces an ultra-short, three-item version of the Utrecht Work Engagement Scale. Using five national samples from Finland (N = 22,117), Japan [N = 1,968], the Netherlands (N = 38,278), Belgium/Flanders (N = 5,062), and Spain (N = 10,040) its internal consistency and factorial validity vis-à-vis validated measures of burnout, workaholism, and job boredom is demonstrated. Moreover, the UWES-3 shares 86-92% of its variance with the longer 9-item version and the pattern of correlations of both versions with 9 indicators of well-being, 8 job demands, 10 job resources, and 6 outcomes is highly similar with an average, absolute difference between correlations of only .02. Hence, it is concluded that the UWES-3 is a reliable and valid indicator of work engagement that can be used as an alternative for the longer version, for instance in national and international epidemiological surveys on employee's working conditions.

INTRODUCTION

Soon after its introduction in academia (Kahn, 1990) engagement at work became a very popular topic, particular in the psychological and HRM literatures. In the former it is predominantly labelled 'work engagement', whereas in the latter 'employee engagement' is used. However, both terms can be used interchangeably. According to Google Scholar (June, 2016), the number of publications with either 'work engagement' or 'employee engagement' in the title steadily increased annually from 13 in 2,000 to 814 in 2015, so that meanwhile over 4,600 scientific publications are available.

Arguably, the most widely used operationalization of engagement in academic studies is the Utrecht Work Engagement Scale or UWES (Farndale, Beijer, Van Veldhoven, Kelliher & Hope-Hailey, 2014). The UWES is based on in-depth interviews and was introduced as a 17-item self-report questionnaire that includes three dimensions (Schaufeli, Salanova, Bakker, & González-Roma, 2002): (1) *vigor*, characterised by "high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties"; (2) *dedication*, characterised by "feelings of a sense of significance, enthusiasm, inspiration, pride, and challenge"; and (3) *absorption*, characterized by "being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself" (Schaufeli et al., 2002, pp. 74-75). Some years later, a shorter version of the UWES with nine items – three items for each dimension – was introduced (Schaufeli, Bakker & Salanova, 2006). The UWES-9 assesses work engagement as a unitary construct that is constituted by three closely related aspects. (*cf.* de Bruin & Henn, 2013).

Shortening the original version of the UWES is important to reduce the demands placed on survey participants, which requires researchers either to assess fewer constructs, or assess constructs with fewer items. This dilemma is particularly salient for employee engagement surveys, which are carried out in the business community. Employers usually impose time constraints for surveying employees during their work time so that there is increasing pressure

on researchers to develop valid, reliable, yet short measures without redundant items (Fisher, Matthews & Gibbons, 2015). Such brief measures also reduce participant's fatigue, frustration, and the likelihood of refusing to participate because the survey is perceived to be too long and time consuming (Burisch, 1984).

The aim of the current paper is to introduce an ultra-short version of the UWES with only three items – one for each dimension of work engagement. More specifically we will compare the UWES-3 with the UWES-9 with respect to: (1) well validated measures of burnout, workaholism, and job boredom.; (2) internal consistency; (3) relations with biographical variables (age, education, job tenure); (4) relations with employee well-being, job demands, job resources, personal resources, and outcomes. Our expectation is that the UWES-3 will perform similarly as the UWES-9 with regards to these four points.

In order to increase the generalizability of the findings beyond the country in which the UWES was developed (the Netherlands) we used additional samples from four other countries, including three languages. The Flemish sample shares the same language (Dutch) but originates from another country (Belgium). Finland and Spain represent two parts of European that differ in socio-economic history and development. The former represents Scandinavian countries with long-standing and well-established welfare states, whereas the latter represents Southern Europe with young democracies and recent, major socio-economic transformations. Finally, a Japanese sample is included because it represents a highly developed East Asian county with quite different cultural roots.

Hence, the current study sets out to demonstrate in five national samples that the ultra-short UWES-3 performs equally well as the longer, well-established UWES-9.

Engagement and employee well-being

Work engagement can be distinguished from other kinds of employee well-being such as burnout, boredom, workaholism and job satisfaction. From the outset, work engagement was conceived as the opposite, positive pole of burnout, a work-related state that is characterized by mental exhaustion (Maslach, Schaufeli & Leiter, 2001). This implies that burnout and work

engagement are negatively related. The same is true for job boredom, which, like burnout, is characterized by low arousal and displeasure (Loukidou, Loan-Clarke & Daniels, 2009), whereas, in contrast, work engagement is characterized by high arousal and pleasure. Work engagement can also be distinguished from workaholism, which refers to a strong inner compulsion to work excessively hard (Schaufeli, Taris & Bakker, 2008) and which is characterized by high arousal and displeasure. Finally, work engagement can also be differentiated from job satisfaction (Christian, Garza & Slaughter, 2011). Although both are characterized by pleasure, levels of arousal are higher for engagement than for job satisfaction.

Using a fourfold table that emerges after crossing two polar dimensions – pleasure vs. displeasure and activation vs. deactivation – Salanova, Del Líbano, Llorens and Schaufeli (2014) confirmed the discriminant validity of work engagement. More specifically, their cluster analysis showed that employees who score high/low on energy, pleasure, challenge, efficacy and identification with work can be classified into each of the quadrants of the fourfold table that correspond with engagement (activation/pleasure), workaholism (activation/displeasure), burnout (deactivation/displeasure) and satisfaction (deactivation/pleasure).

Hence, based on the presumption that work engagement can theoretically and empirically be differentiated from other types of employee well-being, we expect that engagement appears as separate factors vis-à-vis well-validated measures of burnout, boredom, and workaholism. Unfortunately this is not possible for job satisfaction because different measures were used in the five national samples. In addition, we expect that engagement correlates negatively with burnout and boredom, and positively with workaholism and job satisfaction.

Assessing work engagement with the UWES-17 and the UWES-9

The psychometric qualities of the UWES-17 have been demonstrated in numerous studies in terms of internal consistency, stability, and construct validity (for an overview see Schaufeli, 2012). An iterative process was used to reduce the number of items of the original 17-item version that started with the selection (on face validity) of the most characteristic item of each subscale (see

Schaufeli et al., 2006; p. 707). Next, this item was regressed on the remaining items of that particular subscale and the item with the highest β value was then added to the initial item. In the next step, the sum of these two items was regressed on the remaining items of the subscale and again the item with the highest β value was added to both items that were previously selected, and so on. This iterative procedure was aborted when no substantial variance was added by a subsequent item. As a result, the UWES-9 emerged, which performs quite as well as the longer, original version. For instance, its internal consistency across 10 different countries varies between .85 and .92, with a median of .92 (Schaufeli et al., 2006). Moreover, stability coefficients of the UWES-9 are about .70 across time lags that span 16 to 18 months (De Lange, De Witte & Notelaers, 2008; Seppälä, Mauno et al., 2009). After systematically comparing the UWES-9 and the UWES-17 in a series of psychometrical studies, Mills, Culbertson and Fullagar, (2011) concluded: “It appears as though the UWES-9 could serve as a viable—and perhaps even preferable—alternative to the longer UWES-17” (p. 541). Hence, the UWES-9 may be considered a parsimonious version of the UWES-17 that yields similar reliable and valid work engagement scores.

Engagement and the Job Demands Resources model

We use the Job Demands Resources (JD-R) model as a conceptual framework for investigating the content validity of both versions of the UWES. This model has been used to map the antecedents and consequences of work engagement (Schaufeli & Bakker, 2004; Bakker & Demerouti, 2008). The JD-R model assumes a motivational process that is sparked by abundant job resources (e.g., job control and co-worker support); that is, positive aspects of the job that may: (a) be functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth and development. Because of their motivating nature job resources foster the willingness of employees to devote their efforts and abilities to the work task, and therefore induce a state of work engagement. In its turn, work engagement leads to various positive outcomes such as work performance and organizational commitment. In addition, the JD-R model also assumes that personal resources such as optimism and self-efficacy (i.e., aspects of the self that refer to the

ability to control and impact one's environment successfully) have a positive impact on work engagement. Conversely, personal vulnerability factors (e.g. neuroticism) have a negative relationship with work engagement. Finally, a more recent extension of the JD-R model (Crawford, LePine & Rich, 2010) predicts that challenging job demands (e.g., mental demands) are positively related to work engagement, whereas hindrance demands (e.g., role conflict) are either unrelated or negatively related. On balance, the JD-R model assumes that relationships of work engagement with job resources are stronger and more consistent than with job demands.

The empirical support for the JD-R model is abundant. For instance, in their recent review Schaufeli and Taris (2014) found that twelve studies confirmed the mediating role of engagement in the motivation process. In the remaining four studies partial instead of full mediation was found for engagement.

Based on the JD-R model it is assumed that both versions of the UWES are consistently and positively related to job resources, personal resources and outcomes, whereas correlations with job demands are lower and differ in direction, depending on the nature of the demand (i.e., challenging or hindering). However, most importantly, it is expected that the pattern of correlations of the UWES-3 and UWES-9 with the variables of the JD-R model is highly similar.

METHOD

Sample and procedure

Five composite, national samples were included in the current research. Except for the Japanese sample all other national samples are not representative for the local workforce.

More specifically, about half of the *Finnish* sample (N = 22,117) consists of employees and managers of different industries who participated in the same research project (53%) supplemented with other profession-based sub-samples of dentists (13%), dental nurses (2%), judges (3%), fire-fighters (2%), nuclear safety engineers (3%), workers in the forest industry (9%), and personnel from schools including teachers, administrative staff, cooks, and cleaners (15%).

The *Japanese sample* was drawn from registered monitors of a survey company. A total of 13,564 employed monitors, who were matched in age, gender and resident area to a Japanese representative sample, were randomly invited to participate in the survey. The final sample consists of 1.968 Japanese employees.

The *Dutch sample* (N = 38,278) originates from a large occupational health service and comprises all employees who participated in psychosocial risk evaluations that were carried out between 2008 and 2013. Most employees work in business and financial services (20%), manufacturing and construction (18%), wholesale and retail (17%), health care (16%), public administration (7%), and education (7%).

The *Flemish sample* (N = 5,062) resulted from a two-stage sampling procedure. First, a representative sample of 20 organisations was randomly selected from all economical branches in Flanders. Next, within each organisation, either a random sample of employees was drawn (11 organisations) or all employees were invited to fill out the questionnaire (9 organisations). The sample is heterogeneous, but not representative for the Flemish working population.

Finally, the *Spanish sample* (N = 10,040) is a composite, heterogeneous sample that includes white and blue collar workers from different occupational sectors, such as teachers, tile workers, technology workers, nurses, and physicians.

 Insert Table 1 about here

Table 1 shows that the gender distribution differs markedly: the majority of the Finnish sample is female, whereas most Dutch respondents are male. Also the educational level differs between countries with relatively high levels in the Finnish sample and low levels in the Japanese sample. Compared to the other samples, the Spanish sample is relatively young and thus also has less job tenure.

Measures

The current study includes a large number of variables, many of which have been measured with different instruments in different national samples. This diversity is not considered a problem here because we are not interested in the relationships of the UWES with various variables *per se*, but in the similarity in correlations of both UWES versions with other variables. Moreover, because we used convenience samples, not all variables have been included in all national samples.

UWES-3. In all countries the UWES-9 was administered. Based on face validity, theoretical reasoning, and earlier feedback from respondents, three items from the UWES-9 were selected, each or every dimension of work engagement: (1) “*At my work, I feel bursting with energy*” (vigor); (2): “*I am enthusiastic about my job*” (dedication); (3) “*I am immersed in my work*” (absorption). Item 1 was selected because it refers most unambiguously to the employee’s level of energy, which is considered a hallmark of vigor. Item 2 was selected because enthusiasm is a high arousal and pleasurable emotion that is associated with work engagement (Bakker & Oerlemans, 2011). Finally, item 3 was selected because the other two absorption items either referred to happiness or were formulated in too extreme manner (i.e. getting carried away). The same three items were used as starting point for the iterative process of item selection that lead to the shortening of the original UWES-17 into the UWES-9. This means that item selection of the current study is consistent with the study that introduces the UWES-9 (Schaufeli et al., 2006).

Other study variables. For an overview of the indicators of well-being and the measures that represent the four elements of the JD-R model (i.e., job demands, job resources, personal resources, and outcomes) see Table 2.

 Insert Table 2 about here

RESULTS

Comparison with other well-being measures

Using confirmatory factor analysis (CFA), the relationship of both UWES versions was studied vis-à-vis validated measures of burnout, workaholism, and

job boredom (see Table 3). It was expected that both versions of the UWES could be discriminated from these three measures. Three sets of CFA's were carried out for each of the well-being measures separately to test this assumption. The so-called multiple-group method was used in which the same model is fitted to the data of multiple samples simultaneously. First, a null-model was fitted to the data first that assumed that *all* items load on *one* general well-being factor (M0). Next, a model with each (sub)scale representing a separate latent factor and *no* correlated errors between the items was fitted to the data (M1). Finally, in case M1 did not fit well enough to the data, a revised model (M2) was tested in which only errors between pairs of items within one particular latent factor (subscale) were allowed to correlate (see also discussion). This was only the case for one pair of workaholism items and two pairs of items of the UWES-9 (i.e. #1 and #2, and #8 and #9). It is important to note that in *none* of the revised models, errors between items of the UWES-3 were allowed to correlate. Using the ΔX^2 statistic the difference between the 0-model and the best fitting model (either M1 or M2) was tested. A significant value for ΔX^2 indicates that the model with separate factors fits better than a general well-being model and hence demonstrates that the UWES can be discriminated from the other well-being measures.

 Insert Table 3 about here

Burnout. As can be seen from Table 3, the null-model (M0) with one latent, undifferentiated well-being factor did *not* fit to the Finnish and the Dutch data. Next, a four-factor correlated model was fitted simultaneously to the data of both national samples that included three latent burnout factors (emotional exhaustion, cynicism, and professional efficacy) plus one latent UWES factor with 9 and 3 items, respectively. The original model (M1) that included the UWES-9 did *not* fit very well to the data of both countries (Table 3), but the fit improved significantly ($\Delta X^2 = 63739.14$; $df = 4$; $p < .001$) after two pairs of errors of UWES-9 items were allowed to correlate. As a result, all fit indices for M2 satisfied their criteria. Following Byrne (2009) values of NFI, TLI and CFI that exceed .90, and a value of .08 or lower for RMSEA are considered to indicate sufficient model-fit.

The fit of the multi-factor model was superior to that of the 0-model ($\Delta X^2 = 210438.99$; $df = 18$; $p < .001$ for the UWES-9 and $\Delta X^2 = 125466.78$; $df = 12$; $p < .001$ for the UWES-3), indicating that both UWES versions can be discriminated from the burnout measure.

Workaholism. Again, the null-model (M0) did *not* fit the Finnish, Dutch, and Japanese data, neither for the UWES-9 nor for the UWES-3. Next, a three-factor correlated model was fitted simultaneously to the data of these three countries that included two latent workaholism factors (working excessively and working compulsively) plus one latent UWES factor with 9 and 3 items, respectively. The original model (M1) did not fit very well to the data of the three countries, but the fit of the re-specified model (M2) – with one correlated error between two workaholism items – was sufficient, with all fit-indices satisfying their criteria. M2 fitted significantly better to the data than M1: $\Delta X^2 = 7124.53$; $df = 9$; $p < .001$ for the UWES-9 and $\Delta X^2 = 967,54$; $df = 3$; $p < .001$ for the UWES-3. The fit of the multi-factor model was superior to that of the 0-model ($\Delta X^2 = 38743.68$; $df = 18$; $p < .001$ for the UWES-9 and $\Delta X^2 = 15872.99$; $df = 12$; $p < .001$ for the UWES-3), indicating that both UWES versions can be discriminated from the workaholism measure.

Job boredom. Finally, the null-model (M0) did *not* fit the Finnish and Dutch data. Next, a two-factor correlated model was fitted simultaneously to the data of both countries that included one latent job boredom factor and one latent UWES factor of 9 and 3 items, respectively. The original model (M1) that included the UWES-9 did not fit very well to the data of both countries, but the fit of the re-specified model (M2) – with correlated errors between two engagement items – was significantly better than that of M1 ($\Delta X^2 = 12882.80$; $df = 4$; $p < .001$), with all fit indices satisfying their criteria. The fit of the multi-factor model was superior to that of the 0-model ($\Delta X^2 = 30908.42$; $df = 6$; $p < .001$ for the UWES-9 and $\Delta X^2 = 12012.28$; $df = 2$; $p < .001$ for the UWES-3), indicating that both UWES versions can be discriminated from the boredom measure.

In sum; factorial validity was demonstrated for the UWES-9 and UWES-3 vis-à-vis the MBI-GS (burnout), the DUWAS (workaholism), and the DUBS (job

boredom). In other words, like the UWES-9 the UWES-3 can be discriminated from scales that assess three other types of work-related well-being.

Internal consistency

The three engagement items are moderately to highly correlated: vigor-dedication ($r = .69$ in the total sample; $.64 < r < .75$ in the national samples), vigor-absorption ($r = .56$ in the total sample; $.46 < r < .65$ in the national samples), and dedication-absorption ($r = .60$ in the total sample; $.46 < r < .54$ in the national samples). As can be seen from Table 2, Cronbach's α 's of the UWES-3 are sufficient in all five national samples; that is, they exceed the generally accepted value of .70 (Nunnally & Bernstein, 1994). Because values of Cronbach's α increase with test length, α 's are somewhat higher for the UWES-9 as compared to the UWES-3. Applying the Spearman-Brown prediction formula, it appears that increasing the test-length of the UWES-3 with 6 items would yield virtually the same predicted as observed α -values for the UWES-9 in the Finnish (.92 vs. .94), Japanese (.94 vs. .94), Dutch (.93 vs. .94), Flemish (.94 vs. .94), and Spanish (.90 vs. .90) samples. Hence, reducing the UWES-9 with 6 items does not decrease the internal consistency beyond what can be expected.

Correlations between both versions

Item-total/rest correlations of the UWES-3 and UWES-9 are very high for Finland (.96/.90), Japan (.96/.92), Netherlands (.96/.91), Flanders (.95/.88), and Spain (.93/.85). By definition, the former are higher than the latter because of partially overlapping items. The mean correlations of the single *items* of the UWES-3 with the total score of the UWES-9 are quite similar across countries as well, ranging from .80 to .85. Hence, the items that constitute the UWES-3 are highly representative for the pool of 9 items they were drawn from.

Mean differences between countries

Like the mean values of the UWES-9 ($F(4,75834)=2875.44$) those of the UWES-3 ($F(4,76128)=2282.78$) also differ between the national samples. Post-hoc testing using Fisher's Least Significant Difference (LSD) test reveals that mean scores on the UWES-3 and UWES-9 differ systematically between all national samples with the highest scores for Finland ($M=4.60/4.61$,

SD=1.21/1.18) and the lowest scores for Japan (M=2.86/2.77, SD=1.11/1.23) for the UWES-3 and UWES-9, respectively.

Relations with age, level education, and tenure

Mean Pearson product-moment correlations across countries with age ($r = .04/.05$) and tenure ($r = -.03/-.02$), and Spearman correlations with level with education ($r = .04/.05$) are similarly low for the UWES-3 and UWES-9, respectively. The only correlation that exceeds .10 is observed for age in Japan ($r = .20/.25$).

Females score significantly higher than males on the UWES-3 ($t_{(74501)} = -37.70$; $d = .29$) and the UWES-9 ($t_{(74226)} = -39.99$; $d = .27$). However, mean gender differences are rather small with values of Cohen’s d lower than .10 for both UWES versions in all countries, except Finland, where d -values of .41 and .43 were observed for the UWES-3 and UWES-9, respectively. Most importantly, gender differences across all countries were similar for both UWES-versions.

Relations with well-being

Generally speaking correlations with well-being are weak to moderate and in the expected direction (see Table 4); that is, negative with indicators of ill-being (burnout, boredom, depression, and psychological distress) and positive with the only indicator of well-being (satisfaction). Correlations with workaholism are more complex and differ between countries. Most importantly, however, the absolute average difference between the correlations of indicators for well-being with the UWES-3 and UWES-9 is very small (.02). Formal testing of these differences is not very insightful because trivially small differences (e.g. .01 or .02) produce statistical significant results given the very large sample sizes. In our samples, only a difference of zero is non-significant. So it is safe to conclude that correlations of the UWES-3 with all six indicators (and nine subscales) of employee well-being are practically similar to those of the UWES-9.

 Insert Table 4 about here

As displayed in Table 3, generally correlations are slightly lower for the UWES-3 compared with the UWES-9, with an average, absolute difference of only

.02 and with almost all differences less than .05. The most salient exception is the correlation with workaholism in Japan; here the UWES-3 correlates *higher* than the UWES-9 with a difference slightly larger than .05.

 Insert Table 5 about here

Relations with job demands

As can be seen from Table 5 work engagement correlates positively with some demands (e.g., mental demands) and negatively with others (i.e., role conflicts). Generally correlations are (very) weak and do not exceed .25. Moreover, differences in correlations of both versions with job demands are very small; on average .02. Most correlations with the UWES-3 are lower than with the UWES-9 (11 vs. 7; 2 correlations are similar). However, all differences are less or equal to .05 with the exception of work overload in Japan, where the correlation with the UWES-3 is .07 stronger than with the UWES-9.

 Insert Table 6 about here

Relations with job resources

Table 6 shows that all correlations with job resources are positive and in general weakly to moderately strong. All correlations are slightly lower for the UWES-3 than for the UWES-9, except for four correlations that are similar. However, the absolute differences are again very small; on average .02, with no difference exceeding .05. As predicted by the JD-R model, compared to job demands correlations with job resources are higher and more consistent.

 Insert Table 7 about here

Relations with personal resources

Table 7 shows that correlations with personal resources are generally moderately strong and only slightly differ between both UWES versions; (i.e., .02). With only one exception), all correlations with the UWES-3 are lower than

with the UWES-9. As expected, only correlations with neuroticism and external locus of control are negative, as these are personal vulnerability factors.

 Insert Table 8 about here

Relations with outcomes

Likewise Table 8 shows that correlations with outcomes are generally moderately strong and only slightly differ between both UWES versions (i.e., .02). All correlations are positive, except for turnover intention, meaning that engaged employees are *not* keen to leave the organization. With the exception of four correlations that are similar, correlations with the UWES-3 are lower than with the UWES-9.

In sum

Taken together, the 102 correlations of both versions of the UWES with 41 different variables – across five national samples – are virtually identical. Generally speaking correlations with the UWES-3 are slightly lower than with the UWES-9. However these differences are very small. On average the difference in absolute correlations is .02, whereby in only 5.8% of all cases this difference exceeds the value of .05, with a maximum of .07.

DISCUSSION

This study demonstrates convincingly that the UWES-9 can be shortened, without any significant loss of information, to an ultra-short version with only three items, each representing one particular aspect of work engagement: vigor, dedication, and absorption. This is illustrated by the following results:

- The internal consistency of the UWES-3 is similar to that of the UWES-9, taken its shorter test-length into consideration.
- Both measures share between 86% and 92% of their variances, depending on the sample.
- Correlations of both measures with age, level of education and tenure are virtually identical, as is the small gender difference in mean engagement scores.

- Both measures detect similar mean differences in levels of engagement across all five national samples.
- The pattern of correlations of both measures with 9 indicators of well-being, 8 job demands, 10 job resources, and 6 outcomes is highly similar with an average, absolute difference of only .02.
- Like the UWES-9, the UWES-3 can be discriminated from other measurement instruments that assess burnout (MBI-GS), workaholism (DUWAS), and job boredom (DUBS).

It was observed that correlations with well-being, job demands, job resources, personal resources, and outcomes are marginally *lower* for the UWES-3 as compared to the UWES-9. This is the statistical consequence of shortening the scale, then by doing so coefficient α – which is the lower bound for internal consistency – is by definition reduced. Therefore, a larger proportion of the variance is due to measurement error, so that correlations are diminished. But please note that differences in correlations with both versions are very small and not relevant for practice; on average only .02, with less than 6% of the differences exceeding .05.

Moreover, our results agree with the JD-R model that job resources are stronger and more consistently related to work engagement than job demands (Bakker & Demerouti, 2008; Schaufeli & Taris, 2014). Across our samples job demands are on average correlated about .40 with both engagement measures, against only approximately .15 with job demands. Moreover, and in line with other studies (*cf.* Crawford et al., 2010) challenge demands such as mental demands and – to a lesser degree work overload – are *positively* related to work engagement, whereas hindrance demands such as job insecurity and role conflicts are *negatively* related to work engagement. However, some demands are also inversely related with work engagement in different samples, such as work overload, mental demands, and work-home conflict. Most likely, these differences have to do with the fact that the difference between challenge and hindrance demands is not as clear-cut as initially assumed (*cf.* Schaufeli & Taris, 2014)

Although the aim of this study was *not* to compare work engagement across different countries, two interesting differences were observed between Japan and the European countries. First, levels of work engagement are much lower in Japan than in any other European country. This was observed previously as well and has been explained by Japanese culture, which strongly emphasizes harmony and hence precludes the expression of positive feelings and experiences because this would place the individual in a superior position in the group and hence jeopardize harmony (Shimazu, Miyanaka, & Schaufeli, 2010). Like the UWES-9, the UWES-3 is able to detect these differences. Second, the pattern of correlations of both versions of the UWES is slightly different in Japan, as compared to the European countries. This applies particularly to the compulsive component of workaholism that correlates positively to work engagement in Japan, whereas this correlation is negative in both European samples from Finland and the Netherlands. Perhaps this can be explained by differences in work ethic between Europe and Japan. In contrast to Europe Japan does not have a self-enhancement culture and work is closely connected with self-sacrifice, duty, and toil (Sagie, Elzizur & Koslowski, 1996). Hence, it can be speculated that Japanese employees may experience their work as engaging and compulsive at the same time.

Weaknesses and strengths

The current study has four potential weaknesses. First, convenience samples were used for all European countries; only the Japanese sample was representative for the working population of that country as far as age, gender and residential area concerned. This restricts the generalization of the research findings, but only to a limited degree because we were *not* interested in differences across countries *per se* but in comparing both versions of the UWES. So rather than being representative, it is important that the samples include many different variables that represent the elements of the JD-R model. The fact that convenience samples were used also has another drawback, namely that in different samples different measures of the same construct have been used (see Table 2). However, this heterogeneity can also be seen as an advantage because it allows investigating the comparative validity of both UWES versions across

different operationalizations of similar constructs. Once more, our objective was *not* to study the relationships of work engagement with various other concepts *as such*, but to study the *differences* between both versions of the UWES.

Second, In order to increase model fit, correlations were allowed in the re-specified models between pairs of errors of items from the same (sub)scale. Although it is – generally speaking – not recommended to allow errors to correlate in order to improve model fit, this is considered to be legitimate when it can be defended on conceptual grounds (Byrne, 2009), as in the current case. It is important to note that in *none* of the models pairs of errors of UWES-3 items were allowed to correlate and that in *all* samples the errors of items 1 and 2 and of the items 8 and 9 of the UWES-9 were allowed to correlate. Both item pairs, which refer to vigor and absorption, respectively, overlap in content (*'At my work, I feel bursting with energy'* with *'At my job, I feel strong and vigorous'* and *'I am immersed in my work'* with *'I get carried away when I'm working'*). The pairs of errors that were allowed to correlate in the other scales (MBI-GS, DUWAS and DUBS) usually differed per country. However, a detailed investigation about the cross-national invariance of the factor-structure of these measures is beyond the scope of the current article because our focus is primarily on the UWES. Nevertheless, our results seem to be slightly at odds with a recent cross-cultural study that showed that a second-order latent factor model that included DUWAS workaholism (working excessively and working compulsively) and UWES-9 work engagement (vigor, dedication and absorption) was invariant across East Asian countries (Japan and China) and European countries (Finland, the Netherlands, and Spain) (Hu, Schaufeli et al, 2014). Hence, it seems that further cross-national research is needed.

Third, in the current study the UWES-3 has not independently used from the UWES-9, so that its true reliability and validity is not yet fully understood. At least not based on the current study. However, a recent study that integrated the concept of engaging leadership into the JD-R model (Schaufeli, 2015) used the UWES-3. Its internal consistency was high ($\alpha = .95$) and it appeared that work engagement – as assessed with the UWES-3 – was related to job resources, burnout and various outcomes (e.g. employability and job performance)

according to the predictions of the JD-R model. Hence, this study supports the reliability and validity of the UWES-3. Nevertheless, more research is needed.

Finally, an inherent weakness of this ultra-short measure of engagement is that the three-dimensional nature of longer UWES versions has been sacrificed in favor of its brevity. That means that researchers who are interested in studying these dimensions separately are advised to use the longer 9- or 17-item versions.

Final note

The 3-item version of the Utrecht Work Engagement Scale (UWES) appears to be a reliable and valid indicator of work engagement that can be used just as well as the longer 9-item version. This ultra-short version not only reduces the length of engagement surveys in companies but also opens the possibility to include work engagement in national and international epidemiological surveys on employee's working conditions. These surveys, which are carried out by NGO's, national government agencies or international bodies, are usually very comprehensive and do therefore not allow the inclusion of longer scales that are used in academic research.

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Table 1: Samples

	<i>N</i>	<i>Gender (%)</i>		<i>Education (%)</i>			<i>Age</i>		<i>Tenure</i>	
		<i>Men</i>	<i>Women</i>	<i>Low</i>	<i>Middle</i>	<i>High</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Finland	22,117	30.3	69.7	8.7	22.2	69.1	46.5	10.6	14.4	11.3
Japan	1,968	51.2	48.4	31.1	12.7	56.3	45.2	12.5	11.1	10.4
Netherlands	38,278	70.8	29.9	16.6	39.7	43.7	43.7	10.4	19.9	11.7
Flanders	5,062	53.1	46.9	18.7	32.5	48.8	40.9	10.2	----	----
Spain	10,040	56.6	43.4	5.3	43.5	51.2	36.8	10.3	8.2	8.8
<i>Total</i>	<i>77,465</i>	<i>55.9</i>	<i>44.1</i>	<i>14.8</i>	<i>33.5</i>	<i>51.7</i>	<i>43.6</i>	<i>10.9</i>	<i>15.6</i>	<i>11.7</i>

Note: For Flanders a tenure classification instead of a mean value is available: 6.5% < 1 yr.; 29.2% 1-5 yr.; 25% 6-15 yr.; 20% 16-35yr.; 19.2% > 25 yr.

Table 2: Study variables

	Finland			Japan			Netherlands			Flanders			Spain		
	#	α	Source	#	α	Source	#	α	Source	#	α	Source	#	α	Source
<i>Job well-being</i>															
• Work engagement															
• 3 item version	3	.80	UWES	3	.85	UWES	3	.82	UWES	3	.85	UWES	3	.77	UWES
• 9 item version	9	.94	UWES	9	.95	UWES	9	.94	UWES	9	.93	UWES	9	.90	UWES
• Burnout															
• Exhaustion	5	.91	MBI				5	.88	MBI						
• Cynicism	5	.83	MBI				4	.82	MBI						
• Accomplishment	6	.92	MBI	6	.93	MBI	6	.84	MBI						
• Total score													15	.80	MBI
• Workaholisme															
• Working excessively	5	.78	DUWAS	5	.81	DUWAS	5	.75	DUWAS						
• Working compulsively	5	.82	DUWAS	5	.74	DUWAS	5	.82	DUWAS						
• Total score													10	.79	DUWAS
• Boredom	6	.85	DUBS				6	.76	DUBS				2	r = .35	Salanova, et al., (2011)

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• Job satisfaction	1	--	Lehto & Sutela (2009)	1	--	BSJQ	3	.92	QEEW	4	.89	Price (1997)	5	.80	Kunin, 1955
• Depression	1 3	.85	BDI	6	.92	BJSQ	6	.78	4DSQ						
• Psychological distress				18	.94	BJSQ	1 6	.91	4DSQ						
<i>Job demands</i>															
• Work overload	3	.77	Lindström et al. (2000)	3	.81	BJSQ	5	.87	QEEW	4	.84	QEEW	5	.88	Beehr et al. (1976)
• Emotional demands	3	.84	COPSOC				3	.83	QEEW				8	.83	Salanova et al. (2014)
• Mental demands							5	.83	QEEW	7	.84	QEEW	3	.74	Salanova et al. (2014)
• Interpersonal conflict				3	.68	BSJQ	4	.81	QEEW	1	--	Self			
• Work-home conflict	4	.84	Grzywacz & Marks (2000)				7	.90	QEEW				4	.82	Grzywacz & Marks (2000)
• Role conflict										4	.62	QEEW			
• Job insecurity	1	--	Lehto & Sutela (2009)							4	.86	VanderElst et al. (2014)			
<i>Job resources</i>															

• Job control	3	.77	Lindström et al. (2000)	3	.73	BJSQ	3	.82	QEEW	4	.58	QEEW	4	.80	Jackson et al. (1993)
• Skill utilization	6	.73	JCQ	1	--	BJSQ				7	.80	QEEW			
• Role clarity	2	.76	QPSN	3	.68	BJSQ	5	.84	QEEW	4	.75	QEEW			
• Feedback	3	.70	Hackman & Oldham (1975)				3	.87	QEEW	5	.81	QEEW	3	.65	Hackman & Oldham (1975)
• Supervisor support	3	.77	Lindström et al. (2000)	3	.83	BJSQ	3	.90	QEEW				6	.82	Grau, et al. (2000)
• Coworker support	2	.84	QPSN	3	.81	BJSQ	3	.89	QEEW	5	.88	QEEW	2	r = .40	Salanova et al. (2011)
• Trust in management	1	--	COPSOQ	4	.91	BJSQ									
• Procedural justice	4	.83	COPSOQ							6	.88	Altena & Van Yperen (1998)	5	.85	Colquitt (2001)
• Opportunity for development				3	.89	BJSQ	4	.87	QEEW						
<i>Personal resources</i>															
• Personal initiative	4	.77	Frese et al. (1997)				7	.84	Frese et al. (1997)						

• Optimism	3	.86	Scheier et al. (1994)				6	.72	Luthans et al. (2007)						
• Self-esteem				10	.85	Rosenber g (1979)									
• Self-efficacy	4	.88	Schwarzer & Jerusalem (1995)	10	.85	Sherer et al. (1982)	5	.80	Ouweneel et al. (2012)				10	.81	Schwarzer & Jerusalem (1995)
• Extraversion							1 2	.79	NEO-PI-R						
• Neuroticism							1 2	.85	NEO-PI-R						
• External locus of control										6	.82	Rotter (1966)			
<i>Outcomes</i>															
• Organizational commitment	3	.77	Lindström et al. (1997)				5	.80	QEEW				8	.81	Cook & Wall (1980)
• Workability	1	--	WAI				4 7	-- ^a	WAI						
• In-role performance	9	.89	Goodman & Svyantek (1999)	2	.83	BJSQ									

• Extra-role performance	3	.87	Goodman & Svyantek (1999)												
• Overall performance				1	--	HPQ									
• Turnover intention	1	--	Lehto & Sutela (2009)				4	.91	QEEW						

Notes: UWES=Utrecht Work Engagement Scale (Schaufeli et al., 2006); MBI=Maslach Burnout Inventory-General Survey (Schaufeli, Leiter, Maslach & Jackson, 1996; Spanish version: Salanova, Schaufeli, Llorens, Pieró & Grau, 2000); DUWAS=Dutch Workaholism Scale (Schaufeli, Shimazu, & Taris, 2009); DUBS=-Dutch Boredom Scale (Reijseger et al., 2013); BDI=Beck Depression Inventory (Beck & Beck, 1972); 4DSQ=Four Dimensional Symptom Questionnaire (Terluin et al., 2004), COPSOQ=Copenhagen Psychosocial Questionnaire (Kristensen et al., 2005); QPSN= General Nordic Questionnaire for psychological and social factors at work (Elo, et al., 2000) ; WAI=Workability Index (Tuomi et al., 1998); JCQ=Job Content Questionnaire (Karasek, 1979); BJSQ=Brief Job Stress Questionnaire (Shimomitsu et al. , 1998); HPQ=Health and Performance Questionnaire (Kessler et al., 2003); RED-ES= Cuestionario para la evaluación de riesgos psicosociales (Questionnaire for the assessment of psychosocial risks) (Salanova et al., 2011); QEEW=Questionnaire on the Experience and Evaluation of Work (Van Veldhoven et al., 2002); NEO-PI-R=NEO Personality Inventory-Revised (Costa & McCrea, 1992);
^a =Scoring in 4 classes: 1 ('poor'), 2 ('moderate'), 3 ('good'), 4 ('excellent') (cf. Tuomi et al., 1998).

Table 3: Correlations of the UWES with psychological well-being

<i>Country</i>	<i>Well-being</i>	<i>UWES-9</i>	<i>UWES-3</i>	<i>Difference</i>
Finland	Workaholism (WE)	.00 ^a	.04 ^b	.04
	Workaholism (WC)	-.11	-.07	-.04
	Burnout (EX)	-.32	-.29	-.03
	Burnout (CY)	-.45	-.41	-.04
	Burnout (rPE)	-.65	-.61	-.04
	Job boredom	-.53	-.50	-.03
	Job satisfaction	.43	.40	-.03
	Depression	-.28	-.26	-.02
Japan	Workaholism (WE)	.15	.22	.07
	Workaholism (WC)	.16	.22	.06
	Burnout (rPE)	-.56	-.54	-.02
	Job satisfaction	.59	.53	-.06
	Psychological distress	-.42	-.35	-.07
Netherlands	Workaholism (WE)	.11	.14	.03
	Workaholism (WC)	-.14	-.11	-.03
	Burnout (EX)	-.41	-.37	-.04
	Burnout (CY)	-.57	-.56	-.01
	Burnout (rPE)	-.71	-.68	.03
	Job boredom	-.38	-.38	.00
	Job satisfaction	.60	.59	-.01
	Depression	-.29	-.28	-.01
	Psychological distress	-.34	-.31	-.03
Flanders	Job satisfaction	.70	.70	.00
Spain	Workaholism	.19	.21	.02
	Burnout	-.38	-.43	.05
	Job boredom	-.37	-.39	.02
	Job satisfaction	.58	.56	-.02
<i>Average (absolute)</i>		<i>.39</i>	<i>.38</i>	<i>.02</i>

Notes: WE=working excessively, WC=working compulsively, EX=emotional exhaustion, CY=cynicism, rPE=Reduced professional efficacy; all correlations, $p < 001$, ^a non-significant, ^b $p < .05$.

Table 4: Correlations of the UWES with job demands

<i>Country</i>	<i>Job demands</i>	<i>UWES-9</i>	<i>UWES-3</i>	<i>Difference</i>
Finland	Work overload	-.04	-.01 ^a	-.03
	Emotional demands	-.09	-.07	-.02
	Job insecurity	-.24	-.27	.03
	Work-home conflict	.15	.10	-.05
Japan	Work overload	.10	.17	.07
	Interpersonal conflict	-.32	-.28	-.05
Netherlands	Work overload	.07	.09	.02
	Mental demands	.20	.21	.01
	Emotional demands	.01 ^a	.01 ^a	.00
	Interpersonal conflict	-.14	-.13	-.01
	Work-home conflict	-.07	-.08	.01
Flanders	Work overload	.12	.13	.01
	Mental demands	.21	.22	.01
	Role conflict	-.28	-.27	-.01
	Job insecurity	-.14	-.12	-.02
	Interpersonal conflict	-.16	-.15	-.01
Spain	Work overload	.10	.07	-.03
	Mental demands	.16	.16	.00
	Emotional demands	.14	.10	-.04
	Work-home conflict	-.15	-.10	-.05
	<i>Average (absolute)</i>	<i>.15</i>	<i>.14</i>	<i>.02</i>

Notes: All correlations, $p < 001$, ^a non-significant.

Table 5: Correlations of the UWES with job resources

<i>Country</i>	<i>Job resources</i>	<i>UWES-9</i>	<i>UWES-3</i>	<i>Difference</i>
Finland	Job control	.29	.25	-.04
	Skill variety	.46	.41	-.05
	Role clarity	.31	.29	-.02
	Feedback	.45	.42	-.03
	Supervisor support	.19	.19	.00
	Coworker support	.32	.29	-.03
	Trust in management	.34	.32	-.02
	Procedural justice	.38	.35	-.03
Japan	Job control	.29	.26	-.03
	Low skill utilization	-.28	-.27	-.01
	Role clarity	.39	.39	.00
	Supervisor support	.36	.34	-.02
	Coworker support	.32	.30	-.02
	Trust in management	.43	.38	-.05
	Opp. for development	.60	.58	-.02
	Netherlands	Job control	.42	.40
Role clarity		.37	.37	.00
Feedback		.44	.42	-.02
Supervisor support		.38	.37	-.01
Coworker support		.31	.29	-.02
Opp. development		.49	.46	-.03
Flanders	Job control	.16	.15	-.01
	Skill utilization	.42	.40	-.02
	Role clarity	.31	.32	-.01
	Feedback	.34	.32	-.02
	Coworker support	.30	.30	.00
	Procedural justice	.29	.28	-.01
Spain	Job control	.37	.36	-.01
	Feedback	.26	.26	.00

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Supervisor support	.22	.20	-.02
Coworker support	.12	.11	-.01
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<i>Average (absolute)</i>	.35	.33	.02

Note: All correlations, $p < .001$.

Table 6: Correlations of the UWES with personal resources

<i>Country</i>	<i>Personal resources</i>	<i>UWES-9</i>	<i>UWES-3</i>	<i>Difference</i>
Finland	Personal initiative	.47	.44	-.03
	Optimism	.45	.39	-.06
	Self-efficacy	.29	.28	-.01
Japan	General efficacy	.42	.40	-.02
	Self-esteem	.40	.37	-.03
Netherlands	Personal initiative	.45	.44	-.01
	Optimism	.53	.49	-.04
	Self-efficacy	.31	.29	-.02
	Extraversion	.44	.42	-.02
	Neuroticism	-.37	-.35	-.02
	External locus of control	-.18	-.20	.02
Flanders	External locus of control	-.29	-.27	-.02
Spain	Self-efficacy	.34	.33	-.01
	<i>Average (absolute)</i>	.38	.36	.02

Note: all correlations, $p < .001$.

Table 7: Correlations of the UWES with outcomes

<i>Country</i>	<i>Outcomes</i>	<i>UWES-9</i>	<i>UWES-3</i>	<i>Difference</i>
Finland	Organ. commitment	.57	.52	-.05
	Turnover intention	-.43	-.38	-.05
	Workability	.37	.35	-.02
	In-role performance	.42	.37	-.05
	Extra-role performance	.36	.34	-.02
Japan	Overall performance	.43	.43	.00
	In-role performance	.34	.34	.00
Netherlands	Organ. commitment	.46	.44	-.02
	Turnover intention	-.37	-.37	.00
	Workability	.44	.42	-.02
Spain	Organ. commitment	.40	.40	.00
	<i>Average (absolute)</i>	.46	.44	.02

Note: all correlations, $p < .001$.

Table 8: CFA fit-indices

<i>Concept</i>	<i>Country</i>	<i>Model</i>	<i>X²</i>	<i>df</i>	<i>NFI</i>	<i>TLI</i>	<i>CFI</i>	<i>RMSEA</i>	<i>90% CI</i>
Burnout	Finland	M0-9	75177.07	276	.38	.38	.38	.21	.205-.208
		M1-9	15262.97	269	.87	.86	.88	.09	.092-.095
		M2-9	6372.49	264	.95	.94	.95	.06	.059-.062
		M0-3	51826.68	153	.39	.32	.39	.23	.229-.233
		M1-3	8232.08	146	.90	.89	.91	.09	.092-.095
		M2-3	2982.26	143	.97	.96	.97	.06	.054-.058
	Netherlands*	M0-9	158169.64	252	.67	.64	.67	.14	.141-.142
		M1-9	54292.46	246	.89	.87	.89	.08	.083-.085
		M2-9	33479.65	242	.93	.92	.93	.07	.066-.067
		M0-3	115842.39	136	.59	.54	.59	.17	.164-.166
		M1-3	19294.75	129	.93	.92	.93	.07	.068-.070
		M2-3	16987.91	128	.94	.93	.94	.07	.064-.066
Workaholism	Finland	M0-9	15577.48	152	.53	.47	.53	.17	.169-.173
		M1-9	4181.16	149	.87	.86	.88	.09	.086-.091
		M2-9	2020.81	146	.94	.93	.94	.06	.058-.063
		M0-3	4763.46	65	.70	.64	.70	.14	.141-.148

		M1-3	1522.94	62	.90	.88	.91	.08	.079-.086
		M2-3	1153.94	60	.93	.91	.93	.07	.086-.075
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	Netherlands	M0-9	22493.24	152	.60	.55	.60	.16	.156-.162
		M1-9	7244.74	149	.87	.85	.87	.09	.089-.093
		M2-9	3989.68	146	.93	.92	.93	.07	.066-.069
		M0-3	11610.83	65	.51	.52	.52	.18	.173-.178
		M1-3	2260.74	62	.91	.88	.91	.08	.067-.081
		M2-3	1937.71	60	.92	.90	.92	.07	.071-.077
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	Japan	M0-9	9162.81	152	.63	.59	.64	.17	.171-.177
		M1-9	3668.19	149	.85	.84	.88	.11	.107-.113
		M2-9	1665.12	145	.93	.93	.94	.07	.070-.076
		M0-3	3787.04	65	.61	.54	.62	.17	.166-.175
		M1-3	1325.30	62	.86	.84	.87	.10	.079-.107
		M2-3	726.72	60	.93	.91	.93	.08	.070-.080
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Job boredom	Finland	M0-9	33188.12	90	.75	.75	.75	.18	.178-.181
		M1-9	1796.35	89	.87	.84	.87	.13	.131-.135
		M2-9	1399.32	86	.97	.96	.97	.07	.075-.068
		M0-3	13937.29	27	.72	.72	.72	.21	.210-.216
		M1-3	3720.91	26	.92	.90	.92	.11	.109-.115

	M2-3	1587.74	25	.97	.95	.97	.07	.071-.077
Netherlands	M0-9	6758.26	90	.74	.74	.74	.16	.152-.158
	M1-9	3341.55	89	.87	.85	.87	.11	.016-.112
	M2-9	1334.16	86	.95	.94	.95	.07	.065-.072
	M0-3	2639.42	27	.70	.71	.71	.18	.171-.183
	M1-3	589.91	26	.94	.91	.94	.08	.077-.089
	M2-3	336.86	25	.96	.95	.95	.06	.058-.070

Notes: M1=original model; M2=re-specified model; 9=UWES-9; 3=UWES-3; * the Dutch version of the MBI-GS includes 15 instead of 16 items.