

# METODOLOGÍA

## Validity of a brief workaholism scale

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The current study contributes to our understanding of workaholism as a negative construct, and to its measurement by examining the psychometric properties of a short 10-item workaholism scale called DUWAS (Dutch Work Addiction Scale). Confirmatory factor analyses were carried out in a heterogeneous sample of 2,714 employees from the Netherlands (n= 2,164) and Spain (n= 550). The results confirmed the expected two-factor structure of workaholism: working excessively and working compulsively. Moreover, multi-group analyses showed that this two-factor structure was invariant across both countries. Lastly, negative correlations among workaholism and psychosocial well-being (i.e., perceived health and happiness) are indicators of the negative nature of workaholism.

*Validación de una escala breve de adicción al trabajo.* El presente estudio contribuye a la comprensión de la adicción al trabajo como un constructo negativo, y a su evaluación, examinando una medida reducida de adicción al trabajo denominada DUWAS (*Dutch Work Addiction Scale*). Para ello, se han realizado análisis factoriales confirmatorios en una muestra heterogénea de 2.714 trabajadores holandeses (n= 2.164) y españoles (n= 550). Los resultados confirmaron la estructura bifactorial de la adicción al trabajo: trabajar excesivamente y trabajar compulsivamente. Además, los análisis multi-grupo mostraron que esta estructura bifactorial era invariante a través de ambos países. Finalmente, las correlaciones negativas obtenidas entre la adicción al trabajo y el bienestar psicosocial (esto es, la salud percibida y la felicidad) son indicadores de la naturaleza negativa de la adicción al trabajo.

Work is a positive value for people in our current society but, when it is over-important for people, it could have negative consequences such as workaholism. Despite its relevance in modern society, scientific research on workaholism is lacking. One reason for this is that no consensus exists about its conceptualization and measurement. Focused on the workaholism as a negative construct, recently, Schaufeli, Taris, and Bakker (2006) have proposed a new 17-item measure to assess workaholism; the Dutch Work Addiction Scale' (DUWAS) which consists of two sub-scales dubbed working excessively (WkE) and working compulsively (WkC). Besides a shorter version of the DUWAS composed of ten items tested in the Netherlands and Japan, has a promising psychometric features (Schaufeli, Shimazu, & Taris, 2009). The aim of the current study is twofold: (1) to investigate the factorial structure of this brief workaholism

10-items measure in two samples from different countries: Spain and the Netherlands, and (2) to assess the nature of workaholism comparing it with perceived health and happiness to confirm that workaholism may be considered as a negative concept.

### *What is workaholism?*

Despite the fact that, initially, workaholism was also considered a positive phenomenon - at least from an organizational perspective (Machlowitz, 1980; Naughton, 1987) - most authors agree that workaholism is negative in nature (Killinger, 1991; Porter, 1996). Oates (1971) coined the term workaholism and described it as «...the compulsion or the uncontrollable need to work incessantly» (p. 11). This early description entails two core elements which return in later definitions of workaholism: working excessively hard and the existence of a strong, irresistible inner drive (cf. McMillan, O'Driscoll, & Burke, 2003). The former points to the fact that workaholics tend to allocate an exceptional amount of time to work and that they work beyond what is reasonably expected to meet organizational or economic requirements. The latter recognizes that workaholics persistently and frequently think about work (even when they are not

working), which suggests that workaholics feel «obsessed» with their work.

We agree with these assumptions and also with the definition by Salanova, Del Líbano, Llorens, Schaufeli and Fidalgo (2008, p. 1) which considers workaholism as «*a negative psychological state characterized by working excessively due essentially to an internal drive that cannot be resisted*».

#### *The measurement of workaholism*

In line with our conceptualization of workaholism, we have operationalized it in terms of two scales, namely WkE and WkC, using the DUWAS (Schaufeli et al., 2006). This questionnaire comprises 17 items divided into two scales taken from two frequently used workaholism inventories: the Work Addiction Risk Test (WART; Robinson, 1999) and the Workaholism Battery (WorkBat; Spence & Robbins, 1992), respectively. To assess WkE, we used the Compulsive Tendencies Scale included in WART. The label of this scale was somewhat misleading because 7 of its 9 items referred to working hard with no reference to the underlying motivation, whereas the remaining items referred to the inability to relax and to feeling guilty when not working, both of which are indicative of WkC. For that reason, the authors relabeled the scale as WkE. A recent validity study into WART, using 3 independent Dutch samples, showed that the WE-scale performed equally well as the original 25-item version of WART (Taris, Schaufeli, & Verhoeven, 2005). Despite conducting several studies about the psychometric properties and the factorial structure of WART (Flowers & Robinson, 2002; Taris et al., 2005), no confirmatory information about its psychometric characteristics is yet available (Burke, 2000a).

To assess WC, the Drive Scale included in WorkBat is used. This scale not only refers explicitly to the compulsive nature of the underlying motivation to work hard, but also to the compulsiveness of excessive work behavior. The scale was also relabeled as WkC by DUWAS authors to be coherent with their workaholism conceptualization. Studies on the factorial validity of WorkBat failed to confirm Spence and Robbin's (1992) three-factor model of workaholism that included work involvement, work enjoyment and drive (Kanai, Wakabayashi, & Fling, 1996; McMillan, Brady, O'Driscoll, & Marsh, 2002). Instead, the data suggest the elimination of the work involvement factor, leaving a two-factor model with enjoyment and drive as the core components of workaholism. DUWAS did not include the enjoyment component because the authors excluded 'good' forms of workaholism characterized by enjoyment. Thus, the DUWAS was composed of 17 items distributed in two dimensions: WkE (10 items) and WkC (7 items).

A Dutch study using an Internet-based survey revealed that two WkE items load on the WkC scale: «*I feel guilty when I am not working on something*» and «*It is hard for me to relax when I am not working*» (Schaufeli et al., 2006). It is clear that the content of these items reflects the negative consequences of a compulsive tendency to work rather than excessive work. After changing the composition of both scales accordingly, the internal consistencies of the WkE and WkC scales proved satisfactory with Cronbach's  $\alpha$  values of .80 and .86, respectively, whereas the correlation between both latent workaholism factors was .75. Because of «wrongly» loading the WkE items and given the length of the questionnaire, Schaufeli et al. (2009) developed an improved and

shortened version of DUWAS using samples from the Netherlands and Japan. A 10-item version of the DUWAS emerged, with 5 items in each scale (see Table 1). The results showed that the 10-item DUWAS is an appropriate research tool to study workaholism.

#### *The relationship among workaholism and perceived health and happiness*

It is feasible to use the relationship that workaholism shows with other constructs more positive such as health and happiness. For example, Burke (1999) pointed out that, usually, the drive component of workaholism positively relates to poorer perceived health (emotional satisfaction and physical satisfaction in terms of psychosomatic symptoms). So, the more scores in workaholism, the poorer perceived health is. More recently, Schaufeli et al. (2006) showed that WkC and WkE negatively relate to perceived health as well assessed by one item (e.g., «*Generally speaking, do you feel healthy?*»).

There is a lack of studies into the relationship between workaholism and happiness. Only the study of Schaufeli et al. (2006) negatively related workaholism to a similar concept, overall life satisfaction, especially the WkC dimension. In addition, the drive component of workaholism usually relates negatively to psychological well-being and satisfaction (i.e., job satisfaction, or satisfaction with family, friends and community) (Burke, 2000b). Despite being happy is not measured in these studies, it is possible to consider satisfaction in several areas of life being close to the happiness concept. Thereby, we can also expect a negative relationship between workaholism and happiness.

#### *The current study*

The aim of the current study is twofold: (1) to test the factor structure of a brief self-report DUWAS version by verifying the 2-factor structure obtained in previous studies (Schaufeli et al., 2006; Schaufeli, Taris, & Van Rhenen, 2008) in two samples from different countries: Spain and the Netherlands; and (2) to assess the negative nature of workaholism comparing it with perceived health and happiness to confirm that workaholism may be considered as a negative concept.

### Method

#### *Participants and procedure*

A convenience sample was used which included 2,714 employees from the Netherlands and Spain. The Dutch sample comprised 2,164 employees (64% females) from different occupational sectors (i.e., services 18%, education 16%, industry 15% or commerce 12%). Ages ranged from 16 to 69, and the mean age of this sample was 37.9 (SD = 11.2). The web site of the largest popular Dutch psychology journal included the workaholism survey that participants filled on-line. Its homepage also invited visitors to learn more about their work-related well-being. After filling in, the users could graphically see an estimative feedback in an easy way of their results on levels of workaholism and engagement. We clearly explained in the feedback that scores were only an approximation and that it was necessary to contact with us to draw deeper conclusions.

The Spanish sample included 550 employees (54% females) who also completed an online questionnaire on a web site. Likewise, employees worked in heterogeneous jobs, including different occupational sectors (i.e., services 18%, education 15%, industry 11% or commerce 10%). Ages ranged from 18 to 78 years, and the mean age was 33.8 (SD = 9.8). The method selected to help make people aware of the questionnaire and the response procedure was similar to the Dutch sample. Participants filled in the on-line workaholism questionnaire which was included in a specifically elaborated web site (<http://www.wont.uji.es/adic>). The questionnaire included the same items and the same procedure as in the Dutch sample. Moreover, one theoretical article about workaholism was published in a Spanish popular psychology magazine to diffuse the link to the on-line questionnaire.

Measures

Workaholism was assessed by two versions of the DUWAS questionnaire: (1) the original long (17 items) and (2) the new short version (10 items) (Schaufeli et al., 2006; 2009). Both versions are distributed in two dimensions: WkE and WkC. In the original longer version, WkE was evaluated by 9 items (e.g., «I seem to be in a hurry and racing against the clock»), while WkC was tested by 8 items (e.g., «I feel obliged to work hard, even when it's not enjoyable»). In the short version, WkE was measured by 5 items and WkC by another 5 items. In both versions values were ranged from 1 ('almost never') to 4 ('almost always') in a frequency scale following the recommendations of the authors who created the questionnaire.

Psychosocial well-being was assessed by two indicators, i.e., perceived health and happiness. Perceived health was assessed by

1-self-constructed item measured from 1 'almost never' to 4 'almost always' (e.g., «Generally speaking, do you feel healthy?»). Finally, happiness was also measured by 1-self-constructed item ranging from 1 'unhappy' to 4 'very happy' (e.g., «Taking everything in account, how happy are you with your life?»). Despite we used only 1 item, previous factor analyses confirm that perceived health (communality= .71) and happiness (communality= .72) single-items have good reliability (see Harman, 1967; cf. Wanous & Hudy, 2001).

Data analyses

Firstly, internal consistencies (Cronbach's  $\alpha$ ) and descriptive analyses were computed. Secondly, Confirmatory Factorial Analyses (CFA), implemented by the AMOS program (Arbuckle & Wothke, 1999) were employed to test the structural dimensions of workaholism using the original long questionnaire (17 items) in Spanish and Dutch employees separately. Thirdly, Multi-group Analyses (MLG) were also conducted to measure the structural dimensions of workaholism between the Spanish and Dutch samples when they are simultaneously analyzed in order to test the invariance of the structure across countries (Byrne, 2001). The MLG were performed only with the short version of the questionnaire. Next, a test of the equality of covariances structures and factor loadings across samples was done by placing constraints on particular parameters (see Byrne, 2001). Different fit indices were tested: the  $\chi^2$  Goodness-of-Fit Statistic, Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), and the Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Incremental Fit

Table 1  
DUWAS questionnaire

	(Almost) never 1	Sometimes 2	Often 3	Almost (always) 4	
1. I dislike overwork (WkE) <sup>1</sup>		1	2	3	4
2. I often wish I weren't so committed to my work (WkC)		1	2	3	4
3. <b>I seem to be in a hurry and racing against the clock<sup>2</sup> (WkE)*</b>		1	2	3	4
4. <b>I find myself continuing work after my co-workers have called it quits (WkE)*</b>		1	2	3	4
5. <b>It's important for me to work hard even when I don't enjoy what I'm doing (WkC)</b>		1	2	3	4
6. <b>I stay busy and keep my irons in the fire (WkE)*</b>		1	2	3	4
7. I often find myself thinking about work even when I want to get away from it for a while (WkC)		1	2	3	4
8. I overly commit myself by biting more off than I can chew (WkE)		1	2	3	4
9. I seem to have an inner compulsion to work hard, a feeling that it's something I have to do whether I want to or not (WkC)		1	2	3	4
10. I put myself under pressure with self-imposed deadlines when I work (WkE)		1	2	3	4
11. <b>I often feel that there's something inside me that drives me to work hard (WkC)</b>		1	2	3	4
12. <b>I spend more time working than socializing with friends, on hobbies, or on leisure activities (WkE)*</b>		1	2	3	4
13. I feel guilty when I am not working on something (WkE)		1	2	3	4
14. <b>I feel obliged to work hard, even when it's not enjoyable (WkC)</b>		1	2	3	4
15. <b>I find myself doing two or three things at one time such as eating lunch and writing a memo, while talking on the phone (WkE)*</b>		1	2	3	4
16. <b>I feel guilty when I take time off work (WkC)</b>		1	2	3	4
17. <b>It is hard for me to relax when I'm not working (WkE)</b>		1	2	3	4
Note: Items in bold have to be printed in bold					
<sup>1</sup> In brackets: the dimensions from the original 17-item DUWAS version					
<sup>2</sup> Items in bold correspond to items from the short version of DUWAS.					
<sup>3</sup> Items with asterisks pertain to the Work Excessively dimension in the short DUWAS version					

Index (IFI) and the Tucker-Lewis Index (TLI). Values smaller than .08 for RMSEA indicate an acceptable fit. For the rest of indices, values greater than .90 indicate a good fit. For nested models comparison the difference among chi-square was used meanwhile for non-nested model we computed the Akaike Information Criterion (AIC). The lower the AIC index, the better the fit is. Furthermore, the correlations among workaholism dimensions, perceived health and happiness were computed to measure the negative nature of the phenomena, using only the short version of the questionnaire.

Results

Descriptive analyses

Table 2 shows the mean values, standard deviations, internal consistencies (Cronbach's  $\alpha$ ), and inter-correlations of all the scales used in this study with both samples. All the alpha values meet the criterion of .70 (Nunnally & Bernstein 1994), ranging from .75 to .85. Besides, the inter-correlations between WkE and WkC (in the original and shortened versions separately) were positive and significant. Moreover, the inter-correlations between the original and shortened scales ranged between .92 and .94 in the Dutch and Spanish samples, respectively. Finally, the inter-correlations of WkE and WkC with perceived health and happiness were negative and significant in both samples, as expected. The test for the common method variance for the variables by using the Harman's single factor test with CFA (e.g., Iverson & Maguire, 2000; cf. Podsakoff, MacKenzie, & Podsakoff, 2003) reveal that one single factor could not account

for the variance in the data [ $\Delta\chi^2(2)= 1014.11, p<.001$ ]. Consequently, the common method variance is not a deficiency in this dataset and the variables are related but *different*.

Confirmatory factor analyses

In order to test the structure of the short DUWAS version, two competitive models: (1) M1, the original version of DUWAS and (2) M2, the short DUWAS version were tested in the Dutch and Spanish samples. That is, the M1 and M2 were tested in both samples, but independently analyzed. Table 3 and 4 reveals that compared to M1, M2 is the best model with all fit indices fitting the criteria in Dutch ( $\Delta AIC= 1044.47$ ) as well as in Spanish sample ( $\Delta AIC= 523.99$ ). A revision of the Modification Indexes reveals that M2 may be significantly improved in both samples, independently analyzed, if two pair of errors (items5-14 and items16-17) is allowing correlating. Theoretically, these errors could be allowed to covary attending to the considerable overlap in their content. In fact, both belong to the same dimension, i.e., WC. More specifically, items 5-14 are referred to work without enjoying meanwhile 16-17 are related to how workers feel when they are not working. Thus, the M3 (with this errors correlated) fits the data significantly better than M2 in Dutch [ $\Delta\chi^2 (2)= 123.84, p<.001$ ] and Spanish samples [ $\Delta\chi^2 (2)= 88.56, p<.001$ ]. In short, the results of a series of CFAs in the Dutch and Spanish samples, which were analyzed independently, indicated that the short DUWAS version fitted the data better than the long version. It included 10 items distributed into two related but independent dimensions: WkE (items 3, 4, 6, 12 and 15) and WkC (items 5, 11, 14, 16 and 17).

*Table 2*  
Means (M), standard deviations (SD), correlations and internal consistencies (Cronbach's  $\alpha$  for Spanish/Dutch on the diagonal) in the Dutch (n= 2,164) and Spanish samples (n= 550)

	Dutch		Spanish		Inter-correlations					
	M	SD	M	SD	(1)	(2)	(3)	(4)	(5)	(6)
1. WkE long version	2.22	.51	2.5	.68	.85/.82	.66***	.92***	.66***	-.20***	-.16
2. WkC long version	2.08	.57	2.21	.62	.80***	.79/.84	.49***	.94***	-.28***	-.25***
3. WkE short version	2.44	.59	2.64	.75	.93***	.69***	.78/.75	.46***	-.09***	-.07***
4. WkC short version	2.01	.64	2.07	.73	.77***	.93***	.63***	.79/.81	-.28***	-.25***
5. Perceived Health	3.07	.75	2.98	.95	-.31***	-.28***	-.25***	-.29***	-	.43***
6. Happiness	3.07	.58	2.91	.68	-.32***	-.31***	-.26***	-.30***	.44***	-

Notes: Correlations for the Spanish sample are below the diagonal; \*\*\*  $p<.001$

*Table 3*  
Fit indices of the CFA DUWAS versions in the Dutch sample (n= 2,164)

Models	$\chi^2$	df	GFI	RMSEA	TLI	CFI	AIC	ECVI	$\chi^2$ diff	$\Delta$ GFI	$\Delta$ RMSEA	$\Delta$ TLI	$\Delta$ CFI	$\Delta$ AIC	$\Delta$ ECVI
M1 (17 items)	1605.99	115	.91	.08	.86	.88	1681.99	.78							
M2 (10 items)	595.52	34	.94	.09	.89	.91	637.52	.29							
M3(10 items revised)	471.68	32	.96	.08	.90	.93	517.68	.24							
Difference between M2 & M1									-	.03	.01	.03	.06	1044.47	.96
Difference between M3 & M2									123.84***	.02	.01	.01	.02	119.84	.05

Notes:  $\chi^2$ = Chi-square, df= degrees of freedom; GFI= Goodness-of-Fit Index; RMSEA= Root Mean Square Error of Approximation; TLI= Tucker-Lewis Index; CFI= Comparative Fit Index; AIC= Akaike's information criterion; ECVI= Expected Cross-Validation Index;  $\Delta$ = difference test, \*\*\*  $p<.001$

Similar results are obtained when the two-factor model of the short DUWAS with the pair of errors correlated (M3) is tested in Dutch and Spanish samples but simultaneously analyzed using Multigroup Analyses (MLG). Table 5 reveals that as expected the M3 shows a good fitting to the data again which implies the invariance of the structure of the short DUWAS across both countries, that is, the factor pattern is identical for both samples. The result of this M3 is graphically represented in Figure 1. The specific structural relationships of M3 reveal that in Dutch as well as in Spanish sample, when both are independently analyzed, all the indicators of WkE and WkC have loadings on the intended latent factor higher than .53 and .46 in Dutch and Spanish samples, respectively. It also revealed that covariance between WkE and WkC is .53 and .79 for Dutch and Spanish, respectively (see Figure 1).

Since MLG analyses imply that the same items are forced to load onto the same factors, but factor loading estimates themselves are allowed to vary between samples, more analyses are made in order to test if there are differences in the estimation of the item parameter. Thus, M4 (the constrained model in which all the parameters were fixed in both samples) show the best fit compared to M3 [ $\Delta\chi^2(11) = 149.85, p < .001$ ]. These results reveal that some factor loadings and/or the covariance between the two latent factors are equal among samples (see Table 5). Hence, the process of constraining successive covariances and factor loadings was then applied (M5, M6). Significant differences were obtained among the free model (M3), the model with equal covariances (M5) [ $\Delta\chi^2(1) = 36.98, p < .001$ ] and the model with equal factor

loadings (M6) [ $\Delta\chi^2(8) = 76.07, p < .001$ ]. The results showed a final model (M7) in which the two factorial structures of workaholism were equal across countries but with some minor differences, i.e., the covariance between the both workaholism dimensions and also in one factor loading (item 14).

*Relationships between workaholism and psychosocial well-being*

In order to test the negative nature of workaholism, correlations were made among workaholism and psychosocial well-being operationalized such as perceived health and happiness, in both the Dutch and Spanish samples. As expected, the results show a significant and negative relationship between workaholism dimensions and perceived health (mean  $r = -.24 / -.29$ ) and happiness (mean  $r = -.20 / -.31$ ) in both Dutch and Spanish, respectively. More specifically, the correlations in the Dutch sample between WkC and perceived health ( $r = -.28$ ) and happiness ( $r = -.25$ ), and between WkE, perceived health ( $r = .20$ ) and with happiness ( $r = -.15$ ) were lower than the correlations between these variables in the Spanish sample ( $r = -.28, -.31, -.31, -.32$ , respectively). A Fisher z-transformation was computed in order to verify if these differences in the correlations between items in both countries: the Netherlands and Spain were significant. Results showed that the differences between countries in the relationships among WkC and perceived health ( $z = 0$ ), WkC and happiness ( $z = 1.08$ ), as well as among WkE and perceived health ( $z = 1.88$ ) were non significant. Whereas the relationship between WkE and happiness was significantly different ( $z = 3$ ).

Table 4  
Fit indices of the CFA DUWAS versions in the Spanish sample (n= 550)

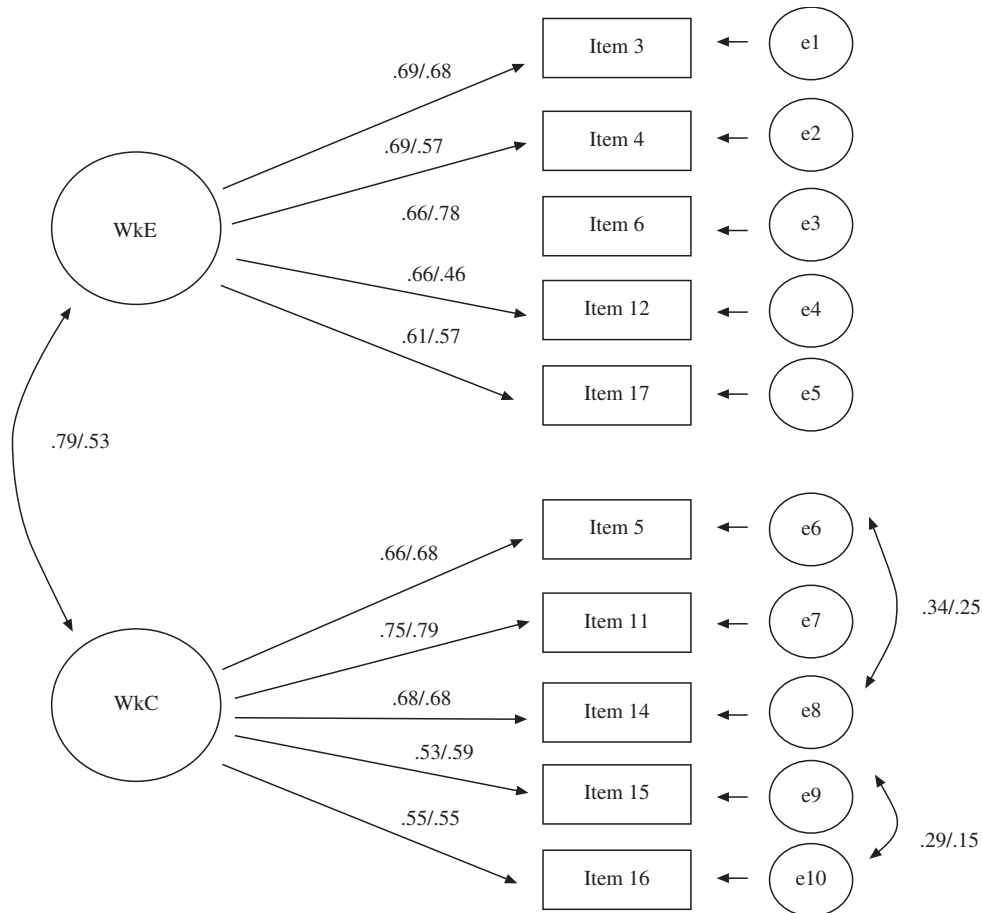
Models	$\chi^2$	df	GFI	RMSEA	TLI	CFI	AIC	ECVI	$\chi^2$ diff	$\Delta$ GFI	$\Delta$ RMSEA	$\Delta$ TLI	$\Delta$ CFI	$\Delta$ AIC	$\Delta$ ECVI
M1 (17 items)	707.34	117	.86	.09	.82	.84	779.35	1.42							
M2 (10 items)	213.36	34	.93	.10	.87	.90	255.36	.46							
M3(10 items revised)	124.90	32	.96	.07	.93	.95	170.92	.31							
Difference between M2 & M1									-	.07	.01	.05	.06	523.99	.96
Difference between M3 & M2									88.56***	.03	.03	.06	.05	84.44	.15

Notes:  $\chi^2$ = Chi-square, df= degrees of freedom; GFI= Goodness-of-Fit Index; RMSEA= Root Mean Square Error of Approximation; TLI= Tucker-Lewis Index; CFI= Comparative Fit Index; AIC= Akaike's information criterion; ECVI= Expected Cross-Validation Index;  $\Delta$ = difference test, \*\*\*  $p < .001$

Table 5  
Fit indices of the MLG of the factor structure of workaholism including both the Dutch (n= 2,164) and Spanish (n= 550) samples

Models	$\chi^2$	df	GFI	RMSEA	TLI	CFI	ECVI	$\chi^2$ diff	$\Delta$ GFI	$\Delta$ RMSEA	$\Delta$ TLI	$\Delta$ CFI	$\Delta$ ECVI
M3. Free	596.61	64	.96	.05	.90	.94	.25						
M4. All constrained	746.46	75	.94	.06	.89	.92	.30						
M5. Equal covariance	623.59	65	.95	.06	.90	.93	.26						
M6. Equal factor loadings	672.68	72	.95	.05	.90	.94	.28						
M7. Final model	602.42	65	.96	.05	.90	.93	.25						
Difference between M4 & M3								149.85***	.02	.01	.01	.02	.05
Difference between M5 & M3								36.98***	.01	.01	0	.01	.04
Difference between M6 & M3								76.07***	.01	0	0	0	.03
Difference between M7 & M3								5.81	0	0	0	.01	0

Notes:  $\chi^2$ = Chi-square, df= degrees of freedom; GFI= Goodness-of-Fit Index; RMSEA= Root Mean Square Error of Approximation; TLI= Tucker-Lewis Index; CFI= Comparative Fit Index; ECVI= Expected Cross-Validation Index;  $\Delta$ = difference test; \*\*\*  $p < .001$



**Figure 1.** Multi-group final model in Dutch ( $n = 2,164$ ) and Spanish ( $n = 550$ ) workers. Note. Spanish (first coefficient) and Dutch (second coefficient) employees. All factor loadings and covariances are significant at .001

Accordingly, the higher the scores in workaholism, the lower the perception of health and happiness are. These results give evidence about the negative nature of workaholism independently of the country (see Table 2).

### Discussion

The aim of this study was twofold: (1) to test the factor structure of a brief self-report DUWAS version by verifying the two-factor structure obtained in previous studies (Schaufeli et al., 2006; 2008) in two samples from different countries: the Netherlands and Spain; and (2) to assess the nature of workaholism comparing it with perceived health and happiness to confirm that workaholism may be considered as a negative concept.

According to the first objective, the results of the CFA in both the separately analyzed samples showed that the short DUWAS version fits the data better than the original questionnaire. Although these results are congruent with previous research findings (Schaufeli et al., 2006; 2009), they imply that workaholism, irrespectively of the country involved, could be assessed by only 10 items divided into the aforementioned two main dimensions. The first refers to a great deal of time that the workaholic spends doing work activities. The second implies that working compulsively refers to the workaholic being reluctant to

disengage from work when he/she persistently and frequently thinks about work even when he/she is not at work. Moreover, the differences in the inter-correlations in both the dimensions between the Netherlands and Spain were not significant. All in all, these results give evidence of the internal validity of the DUWAS questionnaire's structure.

To confirm the invariance in the factor structure, covariance and factor loadings of DUWAS across the Dutch and Spanish samples, MLG analyses were computed. When we analyzed both samples simultaneously, the results confirmed the two-factor structure of workaholism measured by DUWAS. These findings confirm the robustness of the two-factor structure of DUWAS, irrespectively of the country involved. This is in line of previous results obtained by different scholars in which the factorial structure of workaholism also revealed no invariance between other countries such as Dutch and Japanese employees (Schaufeli et al., 2009). This result may suggest that the factorial DUWAS structure is similar among these countries.

The second objective was to confirm the negative nature of workaholism relating it with psychosocial well-being, such as perceived health and happiness. Correlations confirmed that workaholism relates negatively to both positive concepts. The higher the scores in workaholism, the poorer the perceived health and happiness are. These results indicate that potentially workaholism is a negative psychological construct. Moreover, this

result is consistent with the considerable consensus in the workaholism literature about the association of workaholism and poorer psychological and physical well-being (Burke, 2000a; 2000b). In fact, some definitions of workaholism incorporate aspects of diminished health as their central elements (Burke, 2000b). More specifically, a study with 530 MBA graduates from Canada, found a positive relationship between workaholism and poorer emotional and physical well-being (Burke, 2000a). Therefore, it is necessary to emphasize that, from this questionnaire, we can understand workaholism only as a negative phenomenon.

#### *Limitations and further research*

One of the limitations concerns sample selection. As we used convenience samples, they may not be representative, and we do not know whether the observed differences are due to the country or to professional groups. Moreover, it is possible to consider that the use of the Internet as a research tool is a weakness because Internet surveys usually attract participants of a higher socio-economic status and level of education (Smith & Leigh, 1997) and may, therefore, suffer a selection bias. Nonetheless, comparing the samples with others using paper-and-pencil methods may overcome this limitation. Finally, a frequency scale may not be appropriate to evaluate all the items of DUWAS (e.g., «*I dislike overwork*»), although it was used in this study based on the original scale (e.g., Schaufeli et al., 2006; 2009). In future studies would be interesting to use another alternative scale more fitted to the items, e.g., an agreement scale.

The next logical step in future research is to examine the construct validity of the WkE and WkC scales in greater detail. For instance, do both dimensions of workaholism have similar antecedents and consequences? We can assume that the scores in WkE relate positively to (objective) indicators of working time, such as the number of hours spent at work, allocating leisure time to work, and thinking about work when not working. On the other hand, we can expect WkC relates to personality factors, such as perfectionism, consciousness, obstinacy, rigidity, orderliness,

dominance, and also to obsessive thinking and ruminating (Killinger, 2006; Mudrack, 2004)

#### *Theoretical, technical and practical implications*

Two main theoretical implications relate to the workaholism concept. Firstly, an advance in knowledge and understanding about workaholism occurs because we have confirmed that workaholism may be measured with a negative approach. Secondly, the factor structure of DUWAS is quite similar in the Netherlands as in Spain, which may suggest the possibility of considering these two factors of workaholism for theoretical and research purposes irrespectively of the country involved, and which also suggests the robustness of the short version of the DUWAS structure.

From a technical point of view, this study shows that the short DUWAS version has the same factorial structure proposed in the longer version (Schaufeli et al., 2006) with a Spanish sample. This is the first study of the factorial structure of DUWAS in Spain and it confirms the factor structure of this short measure of workaholism. And also, from a practical point of view, the results suggest that a brief DUWAS questionnaire can be used for practitioners to test workaholic dimensions on companies from different countries.

#### *Final note*

Findings from this study are relevant since they represent a valid and short instrument which contributes to the understanding and measuring of workaholism. All in all, and based on the parsimony, results evidence that the measure of workaholism *is better when shorter*.

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