

## The Work Craving Scale (WCS): A validity and reliability analysis

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In the article, we present the theoretical foundations, construction, and validity and reliability analyses of the Work Craving Scale (WCS), a new measure of workaholism based on Work Craving Theory (WCT; Wojdyło, 2013a, 2016). Work craving is defined as a subjective state, an inner drive to compensate negative emotions through performance-conditioned self-worth and neurotic perfectionism in work-related activities. The WCS comprises four dimensions: (1) obsessive-compulsive desire for work, (2) anticipation of compensation for low self-worth, (3) anticipation of reduction of negative emotions and withdrawal symptoms resulting from working, and (4) neurotic perfectionism. Results of CFA ( $n = 1273$ ; CFI = 0.92; RMSEA = 0.071) confirmed the four-factorial structure of the WCS and showed it had a good construct validity. Results of criterion analyses showed a good validity of the WCS as work craving correlated positively with unmitigated communion, unmitigated agency and negative emotions but negatively with self-esteem and positive emotions.

**Keywords:** workaholism; work addiction; Work Craving Scale.

### INTRODUCTION

The structure of workaholism is most often defined as two dimensions: (1) the tendency to work excessively hard, and (2) a compulsive work style (i.e., an

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obsessive, irresistible inner drive to work excessively hard) (e.g., Robinson, 2007, Schaufeli, Taris, & Bakker, 2008). Conceptualizations that operationalize workaholism in terms of obsessive-compulsive symptoms are not based on the theory of workaholism defined as an addiction, and therefore do not describe and explain workaholism as work addiction. Unlike contemporary models of workaholism, the Work Craving Theory (WCT, Wojdylo, 2013a) highlights the connection between addictive and obsessive-compulsive components that together make up work addiction. In the current work, we present the theoretical basis, structure, and findings on the validity and reliability of the Work Craving Scale (WCS). In principle, this questionnaire may enable a unified understanding and investigation of work addiction defined in terms of mechanisms of addiction.

### PREVIOUS CONCEPTUALIZATIONS OF WORKAHOLISM

A review of the literature on workaholism indicates at least a few controversies regarding the ways of defining workaholism. Firstly, in some definitions, job satisfaction is incorrectly included as a component for the diagnosis of workaholism. This notion contradicts the pathological nature of work addiction and opposes the empirically tested relationship between two separate constructs: workaholism and work engagement (Spence & Robbins, 1992; Golińska, 2011; Van Beek, Taris, & Schaufeli, 2011). It should be noted that job satisfaction has been identified as a specific component (trait) of work engagement and excluded from the definition of workaholism (McMillan, O'Driscoll, Marsh, & Brady, 2001; Schaufeli, Taris, & Bakker, 2006). However, scientific research and clinical studies have shown that workaholism and work engagement are separate constructs, both in terms of the underlying motivational mechanisms (Taris, Schaufeli, & Shimazu, 2010), as well as the different consequences they lead to (see Shimazu & Schaufeli, 2009). For example, workaholics are motivated by high negative emotions, and they are persistently driven to work by an internal drive which they cannot restrain. On the other hand, work enthusiasts are motivated to work intensively by internal motivation, energy, and satisfaction related to work (Taris et al., 2010).

Secondly, some definitions of workaholism point to working hours as a component which defines the addiction (Snir & Zohar, 2008). Research has shown, however, that work enthusiasts and workaholics work similar hours (see Burke & Matthiesen, 2004; Wojdylo, Baumann, Buczny, Owens, & Kuhl, 2013). Furthermore, a German study has demonstrated that some workaholics work even less than non-workaholics (Poppelreuter, 1996).

Thirdly, some researchers define workaholism in terms of behavioral tendencies (see Mudrack & Naughton, 2001). This approach seems to disregard the addictive aspect of workaholism and is a dubious criterion for diagnosing this phenomenon. Measurement based mainly on behavioral tendencies (e.g., behavior related to work) does not allow to determine what causes

the manifested behavioral patterns. Thus, we cannot be certain whether these patterns are indicative of mechanisms characteristic of addiction, or the consequences of a stressful situation or even work passion.

Fourthly, most researchers define workaholism as an obsessive-compulsive phenomenon (see Robinson, 2007; Schaufeli, Taris, & Bakker, 2008). Wojdylo (2013a, 2016), however, claims contemporary models of workaholism which focus exclusively on the obsessive-compulsive symptoms of the phenomenon, neglect the addictive nature of workaholism. At the same time, the existing instruments for measuring workaholism (e.g., WART, Robinson, 2007; DUWAS, Schaufeli, Taris, & van Rhenen, 2008), being based on the definitions of workaholism as an obsessive-compulsive phenomenon, do not measure workaholism defined as an addiction.

### WORK CRAVING THEORY

The Work Craving Theory (WCT) developed by Wojdylo (2013a, 2013b, 2015a, 2015b, 2016, 2018) describes and explains workaholism as an addiction. A Polish-German team conducted the first research verifying the concept in 2013 (for details see Wojdylo et al., 2013). The conception of work craving assumes that workaholics, similarly to other addicts (e.g., gamblers, alcoholics), experience an overwhelming craving (a subjective state of persistent desire for work) which is a peculiar property of addiction, and includes compulsive (behavioral), hedonic (emotional) and learned (cognitive) components (Wojdylo, 2013a, 2016). The pathomechanisms of work addiction and application of the WCT in psychological practice are discussed in detail in a monograph by Wojdylo (2016). Empirical verification of the WCT has been presented in a set of studies carried out as part of an international project (Wojdylo et al., 2013; Wojdylo, Baumann, & Kuhl, 2017; Wojdylo, Karlsson, & Baumann, 2016; Wojdylo, Baumann, Fischbach, & Engeser, 2014).

In the concept of work craving, *Obsessive-Compulsive Desire for Work* (WCS-OC) is one of the four subcomponents of work addiction (i.e., work craving). A second subcomponent of work craving, which is not part of obsessive-compulsive mechanisms, is the *Anticipation of Compensation for Low Self-Worth* (WCS-SW). This dimension describes beliefs about compensating for low self-worth. Low self-worth is compensated for by a temporary and conditional sense of competence and effectiveness in the process of obsessive-compulsive working. The third dimension, *Anticipation of Reduction of Negative Emotions and Withdrawal Symptoms Resulting from Working* (WCS-R) contains beliefs about getting relief due to the reduction of negative emotions (irritation, guilt, dispiritedness) and “withdrawal” symptoms (fatigue, exhaustion) caused by compulsive working. A person addicted to work also tends to set unrealistic standards of perfection and to interpret deviation from these standards as a failure—*Neurotic Perfectionism* (WCS-NP).

Models of obsessive working (see Robinson, 2007; Schaufeli et al., 2008) emphasize that the goal of obsessive work is to stay preoccupied with the work. In turn, in the work craving theory, it is pointed out that the workahol-



ic's immediate goal is not to work obsessively, but to use the obsessive-compulsive style of working to reduce negative/unwanted emotions (which a workaholic cannot regulate constructively), and to compensate for low self-worth. Thus, the WCT sees the *function* of obsessive-compulsive working—and not the obsessive-compulsive pattern of behaviour—as the essence of the work addiction mechanism (Wojdylo, 2013a, 2016, 2019).

### WORK CRAVING SCALE

The Work Craving Scale (WCS) was developed in several stages. In the first stage, a list of 28 items was generated. Their content was based on a nicotine addiction questionnaire (QSU; Tiffany & Drobes, 1991) and an instrument measuring neurotic perfectionism (MPS-F; Frost, Marten, Lahart & Rosenblate, 1990). The original items were adapted to the context of work as an activity, following the assumptions of the WCT (Wojdylo, 2013a). In the second step, the list of 28 items was sent to four experts on workaholism (researchers/psychologists), in order to verify the validity of the items. The experts were asked to rate the items on a three-point scale (0—“does not measure,” 1—“measures moderately,” 3—“measures very well”), with respect to the four dimensions of the WCS (7 statements for each dimension) and the definition of workaholism as work craving (i.e., work addiction). The recommendations from the experts were adopted in the final version of the 28-item WCS, which was used in subsequent studies. The WCS was initially validated in separate studies (cf. Wojdylo et al., 2013). These studies confirmed the four-factor structure of the WCS and provided evidence for positive correlations of work craving with ruminations and depressive tendencies, and negative correlations of work craving with global self-esteem, general health and health behaviors. Moreover, data on the divergent validity of the WCS obtained in previous studies indicated that the construct of work craving differs from other work-related phenomena (less than 4% of shared variance with work engagement and less than 10% of shared variance with burnout).

### WORK ADDICTION AND SOCIAL ORIENTATIONS, SELF-ESTEEM, AND EMOTIONS

The present paper reports the results of follow-up studies on the validity of the WCS. This study also extends the previous conclusions by measuring additional variables (cf. Wojdylo et al., 2013). To verify the convergent validity of the WCS, we used the revised WART-R workaholism questionnaire (Wojdylo & Buczny, 2010). The criterion validity of the WCS was assessed by measuring social orientations (agency and communion), as well as unmitigated agency and unmitigated communion, self-esteem (defined as self-competence and self-liking), and positive and negative emotions.

Agency (a competence dimension) is defined as a focus on one self and one's goals and concerns self-efficiency, self-competence, and self-effectiveness in achieving one's own goals. In turn, communion (a warmth dimension) is

defined as a concentration on other people and interpersonal relations and concerns the social and moral functioning of a person (Wojciszke & Szlendak, 2010). Because workaholics are strongly motivated to achieve their goals, but at the same time experience a relatively constant dissatisfaction with their achievements, it was hypothesized that the relationship between work addiction and agency would be low and negative. Because workaholics tend to withdraw from social contacts and social relations, it was hypothesized that work addiction would correlate negatively with communion.

Unmitigated agency is excessive concentration on oneself and one's own goals to the point of ignoring social relations, problems of others. It leads to a negative attitude towards other people (e.g., conflicts, social domination). In turn, unmitigated communion is associated with an excessive concentration on others and putting the needs/desires of others before one's own. Unmitigated communion individuals tend to ignore one's own personal needs and goals, which makes them renounce social support and leads to destructive behaviors in close relationships (e.g., overprotection and invasive entering into a partner's life) (Wojciszke & Szlendak, 2010). Because workaholism may involve excessive focus on one's own goals/needs or extreme self-sacrifice, i.e. concentration on other people's goals/needs at the expense of one's own (*careaholism*) (Robinson, 2007; Wojdylo, 2010), it was hypothesized that work addiction would be positively correlated with both unmitigated agency and unmitigated communion.

Due to the fact that workaholics are always dissatisfied with their achievements and continuously increase their standards, experiencing an intense fear caused by the need for social approval, it was hypothesized that the self-esteem of workaholics, both with regard to personal skills (competence, efficiency) and social skills ("Am I a good or a bad person in relation to internalized standards?") would be low. It was also hypothesized that workaholism would correlate negatively with positive emotions and positively with negative emotions. Additionally, the reliability and stability in time of the WCS were analyzed in this study.

## METHOD

### Participants

Data from six independent samples were collected. Sample A ( $n = 362$ ) consisted of employees of various trades (teachers, officials, accountants and lower-level managers);  $F = 70\%$ ,  $M = 30\%$ ; 344 people were full-time employees, the rest were part-time workers; mean age was 37.31 ( $SD = 11.60$ ). Sample B ( $n = 183$ ) included employees of various trades (banking, education, construction, personal and industrial consultancy);  $F = 60\%$ ,  $M = 40\%$ , mean age was 32.71 ( $SD = 9.81$ ). Sample C ( $n = 594$ ) comprised people employed in schools, banks, universities, social assistance services and construction companies (e.g., engineers);  $F = 59\%$ ,  $M = 41\%$ ; mean age was 38.79 ( $SD = 11.97$ ). Sample D ( $n = 103$ ) were men employed full-time in the shipbuilding industry



(managers, engineers and shift masters); mean age was 33.58 ( $SD = 8.12$ ). Sample E ( $n = 1273$ ) consisted of employees of various trades; F = 56%, M = 44%; mean age was 35.24 ( $SD = 10.92$ ). Sample F ( $n = 76$ ) were employees of several companies in Trójmiasto, Poland (K = 45%, M = 55%); mean age was 34.41 ( $SD = 7.33$ ).

### Measures

**Workaholism.** The WCS was used to measure workaholism in each of the six samples. The questionnaire consists of four dimensions: (1) Obsessive-Compulsive Desire for Work (e.g., *I have an urge to work more and more, Sometimes I work until I'm extremely exhausted*), (2) Anticipation of Compensation for Low Self-Worth (e.g., *If I'm overworking, I feel I am "OK", My overworking makes me feel accepted by others*), (3) Anticipation of Reduction of Negative Emotions (Relief) and Withdrawal Symptoms (e.g., *If I were working hard now, I would feel less exhausted*), and (4) Neurotic Perfectionism (e.g., *Even though I perform a task very carefully, I feel that it is done not correctly enough, Even if I've done only a part of my job incorrectly, I consider it to be a complete failure*). The participants provided their responses using a 7-point scale from 1—*definitely disagree* to 7—*definitely agree*. The reliability values were WCS-OC: Cronbach's  $\alpha = .84$ ; WCS-SW:  $\alpha = .89$ ; WCS-R:  $\alpha = .87$ ; WCS-NP:  $\alpha = .84$ ; and total scale  $\alpha = .95$ . In samples A, B and C, the Polish adaptation of the revised version of the Work Addiction Risk Test by Robinson (WART-R, Wojdylo & Buczny, 2010; WART, Wojdylo, 2005) was applied to measure workaholism defined as three factors: (1) Control (WART-R-C;  $\alpha = .79$ ), (2) Obsession-Compulsion (WART-R-OC;  $\alpha = .77$ ) and (3) Work Overload (WART-R-WO;  $\alpha = .73$ ).

**Social orientations.** Unmitigated agency ( $\alpha = .76$ ) and unmitigated communion ( $\alpha = .88$ ) were measured in sample A using the questionnaire by Wojciszke and Szlendak (2010). Agency ( $\alpha = .95$ ) and communion ( $\alpha = .93$ ) were measured in sample B using the instrument by Wojciszke and Szlendak (2010).

**Self-esteem.** In sample C, self-esteem was measured using the SES by Rosenberg, as adapted into Polish by Dzwonkowska, Lachowicz-Tabaczek, and Laguna (2008). It was assumed, based on Tafarodi and Milne (2002), that the instrument measures two dimensions of self-esteem: Self-Competence (SES-SC;  $\alpha = .67$ ) and Self-Liking (SES-SL;  $\alpha = .70$ ).

**Emotions.** Two types of emotions were measured in sample C using the Emotions Questionnaire by Wojciszke and Baryła (2005): positive (EP;  $\alpha = .86$ ) and negative (EN;  $\alpha = .92$ ).

### PROCEDURE

Data for the analysis of validity, reliability, and stability over time were obtained at companies located in various cities in Poland. Each of the companies whose representatives agreed to fill in the tests was assigned to one of the samples. The employees received a set of coded paper-and-pencil question-

naires, which they returned after one week from the date of delivery (samples A, B, C, D, and E) to a designated collection point. The sample labels reflect the order of measurement; the tests were first administered to participants in sample A, then B, etc. (targeted sampling).

In sample F, the WCS was administered using a computer. The measurement was repeated after three months. To enable comparison of the data from the first and second measurements, the participants were asked to create a unique but easy to remember code (mother's initial and date of birth) which was shared with the researchers.

Regardless of the sample, the participants filled out the WCS questionnaire first, and the order of the remaining questionnaires was rotated. The percentage of returned questionnaires in samples A, B, C, D, and E was substantial (94.0%); in sample F, 74.0% of the participants who took part in the first measurement participated in the second measurement.

## RESULTS

### Confirmation factor analysis (CFA)

To test the construct validity of the WCS, a CFA was performed on combined data collected from two samples (D and E;  $n = 1273$ ).<sup>1</sup> Mplus 7.2 (Muthén & Muthén, 2014) was applied to test the hypothesis of the four-element structure of the WCS, using a few measures of fit: RMSEA (Browne & Cudeck, 1993), and SRMR (Hu & Bentler, 1999), in which values below .08 indicate a relatively good fit, whereas those above .08 indicate an approximation error (cf. Zakrzewska, 2004). In addition, CFI and TLI were applied; values greater than .90 usually indicate a good fit, and those above .95 a very good fit (see Byrne, 2009). First, model estimation was performed using the maximum likelihood (ML) method, but the assumption of a multidimensional normal distribution was violated; therefore, model estimation was also performed using robust RML and MLMV estimators. The second estimator is more resistant to violating the assumption of normality than the first one.

It was assumed that the best fit of the one-factor model (M1) would be indicative of a one-dimensional structure of workaholism. The second model (M2), consisting of four factors, served to test the hypothesis of the four-dimensional structure of the WCS, whereas the analysis of the third model (M3) was carried out to check whether all four main first-order factors could be organized into a second-order factor representing general work addiction (details regarding the structure can be found in Wojdylo et al., 2013). In terms of ML estimation, CFA results confirmed the hypothesis of a four-factor structure of the WCS, because model M2 showed a better fit to the data than M1

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<sup>1</sup> A CFA based on data collected in samples A, B and C was presented in a separate publication (Wojdylo et al., 2013). Also, data collected in sample F was not included in the current CFA due to the application of a different research design (i.e., a computer-administered longitudinal measurement).

( $\Delta\chi^2 = 1107.97$ ,  $\Delta df = 6$ ,  $p < .001$ ) and M3 ( $\Delta\chi^2 = 2786.38$ ,  $\Delta df = 10$ ,  $p < .001$ ). Model M2, in terms of the CFI, TLI, RMSEA, and SRMR, was not fitted to the data. The RML analysis yielded results that lead to the same conclusion: M2 was significantly better fitted to the data than M1 ( $\Delta\chi^2 = 461.24$ ,  $\Delta df = 6$ ,  $p < .001$ ) and M3 ( $\Delta\chi^2 = 1550.91$ ;  $\Delta df = 10$ ,  $p < .001$ ). The results of the MLMV estimation were similar: M2 versus M1 ( $\Delta\chi^2 = 653.17$ ,  $\Delta df = 6$ ,  $p < .001$ ), and M2 versus M3 ( $\Delta\chi^2 = 1897.69$ ,  $\Delta df = 10$ ,  $p < .01$ ). Only in the MLMV estimation, did the fit indices reach acceptable values (Table 1). The procedures recommended by Bryant and Satorra (2012) using scaling (RML) and the DIFFTEST function (MLMV) were used to compare models calculated based on RML and MLMV estimation (Muthén & Muthén, 2014). All factor loads calculated for M2 in the MLMV estimation were greater than 0.59 ( $p < .001$ ).

Table 1.

Results of Confirmatory Factor Analysis Performed Based on Data from Samples D and E ( $N = 1273$ )

Model	$\chi^2$ ( $df$ )	CFI	TLI	RMSEA*	SRMR
Maximum likelihood estimation (ML)					
M1	6595.84* (350)	.773	.755	.118 (.116 – .121)	.071
M2	5487.87* (344)	.813	.795	.108 (.106 – .111)	.074
M3	8274.25* (354)	.713	.693	.133 (.130 – .135)	.152
Robust maximum likelihood estimation (RML)					
M1	4277.24* (350)	.778	.760	.094 (.091 – .096)	.071
M2	3593.73* (344)	.916	.898	.086 (.084 – .089)	.074
M3	5391.16* (354)	.715	.696	.133 (.130 – .135)	.152
Robust estimator (MLMV)					
M1	3007.65* (350)	.783	.766	.077 (.075 – .081)	.071
M2	2554.71* (344)	.920	.902	.071 (.068 – .074)	.074
M3	3872.31* (354)	.713	.693	.088 (.086 – .091)	.142

Note. M1—one-factor model, M2—four-factor model (hypothesized), M3—hierarchical four-factor model; \*The values of the confidence intervals of the RMSEA coefficient are given in the parentheses (90%); \*  $p < .001$ .

#### ANALYSIS OF CONVERGENT VALIDITY

The analysis of the convergent validity of the WCS showed a positive and moderately strong relationship between the dimensions of work craving and the dimensions of the WART-R (for details see Tables 2, 3 and 4). The results confirmed the predictions: the variables shared between 9.0% and 37.0% of variance.



**Table 2.**  
**Descriptive Statistics and Correlations Between Workaholism Measured with WCS/WART-R, Unmitigated Agency and Unmitigated Communion in Sample A ( $n = 362$ )**

Variable	1	2	3	4	5	6	7	8	9	10	11
1. WCS-OC	-										
2. WCS-SW	0.76***	-									
3. WCS-R	0.80***	0.76***	-								
4. WCS-NP	0.71***	0.74***	0.75***	-							
5. WCS	0.90***	0.91***	0.92***	0.89***	-						
6. WART-R-C	0.26***	0.32***	0.33***	0.39***	0.36***	-					
7. WART-R-OC	0.52***	0.44***	0.42***	0.56***	0.56***	0.53***	-				
8. WART-R-WO	0.30***	0.32***	0.28***	0.30***	0.30***	0.48***	0.44***	-			
9. WART-R	0.44***	0.44***	0.46***	0.52***	0.52***	0.89***	0.83***	0.71***	-		
10. UAG	0.44***	0.45***	0.43***	0.51***	0.51***	0.42***	0.45***	0.32***	0.50***	-	
11. UCO	0.13**	0.21**	0.12'	0.13'	0.13**	0.07	0.12'	0.18**	0.13**	0.06	-
<i>M</i>	2.67	3.55	2.71	2.94	2.97	2.23	1.82	2.36	2.10	3.72	4.52
<i>SD</i>	1.06	1.29	1.17	1.14	1.05	0.59	0.58	0.70	0.50	0.76	0.92

*Note.* WCS-OC—Obsessive-Compulsive Desire for Work, WCS-SW—Anticipation of Compensation for Low Self-Worth, WCS-R—Anticipation of Reduction of Negative Emotions (Relief) and Withdrawal Symptoms, WCS-NP—Neurotic Perfectionism, WCS—Workaholism measured with the WCS, WART-R-C—Control, WART-R-OC—Obsession-Compulsion, WART-R-WO—Work Overload, WART-R—Workaholism measured with WART-R, UAG—Unmitigated Agency, UCO—Unmitigated Communion; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

**Table 3.**  
**Descriptive Statistics and Correlations Between Workaholism Measured with WCS/WART-R, Agency and Communion in Sample B ( $n = 183$ )**

Variable	1	2	3	4	5	6	7	8	9	10	11
1. WCS-OC	-										
2. WCS-SW	0.72***	-									
3. WCS-R	0.87***	0.75***	-								
4. WCS-NP	0.68***	0.71***	0.69***	-							
5. WCS	0.91***	0.90***	0.92***	0.96***	-						
6. WART-R-C	0.47***	0.51***	0.46***	0.59***	0.56***	-					
7. WART-R-OC	0.60***	0.52***	0.57***	0.58***	0.63***	0.59***	-				
8. WART-R-WO	0.39**	0.42***	0.37***	0.46***	0.46***	0.61***	0.48***	-			
9. WART-R	0.59***	0.58***	0.56***	0.66***	0.67***	0.90***	0.85***	0.76***	-		
10. AG	0.09	0.07	0.10	-0.05	0.06	0.12	0.06	0.22**	0.15	-	
11. CO	-0.28***	-0.16'	-0.24**	-0.31***	-0.27***	-0.30***	-0.34***	-0.15	-0.33***	0.18**	-
<i>M</i>	2.69	3.62	2.69	3.11	3.03	2.32	1.89	2.49	2.49	5.27	5.40
<i>SD</i>	1.13	1.32	1.25	1.20	1.10	0.60	0.63	0.75	0.75	0.85	0.83

*Note.* WCS-OC—Obsessive-Compulsive Desire for Work, WCS-SW—Anticipation of Compensation for Low Self-Worth, WCS-R—Anticipation of Reduction of Negative Emotions (Relief) and Withdrawal Symptoms, WCS-NP—Neurotic Perfectionism, WCS—Workaholism measured with the WCS, WART-R-C—Control, WART-R-OC—Obsession-Compulsion, WART-R-WO—Work Overload, WART-R—Workaholism measured with WART-R, AG—Agency, CO—Communion; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

**Table 4.**  
**Descriptive Statistics and Correlations Between Workaholism Measured with WCS/WART-R, Self-Esteem, Positive and Negative Emotions in Sample C (n = 594)**

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. WCS-OC	–												
2. WCS-SW	0.71***	–											
3. WCS-R	0.81***	0.72***	–										
4. WCS-NP	0.65***	0.71***	0.64**	–									
5. WCS	0.89***	0.90***	0.89***	0.85***	–								
6. WART-R-C	0.31***	0.34***	0.29***	0.45***	0.40***	–							
7. WART-R-OC	0.52***	0.51***	0.46***	0.53***	0.57***	0.50***	–						
8. WART-R-WO	0.31***	0.38***	0.27***	0.36***	0.37***	0.51***	0.48***	–					
9. WART-R	0.47***	0.50***	0.43***	0.56***	0.55***	0.86***	0.83***	0.74***	–				
10. SES-SC	-0.22**	-0.13*	-0.19**	-0.19**	-0.19***	-0.17**	-0.20**	-0.02	-0.18***	–			
11. SES-SL	-0.25***	-0.17***	-0.22***	-0.23***	-0.23***	-0.16**	-0.22***	-0.10*	-0.21***	0.74***	–		
12. PE	-0.15**	-0.05	-0.13*	-0.11*	-0.11**	-0.06	-0.21***	-0.01	-0.13*	0.39***	0.33***	–	
13. NE	0.16**	0.07*	0.17**	0.18**	0.18***	0.32***	0.23***	0.22***	0.32***	-0.34***	-0.40***	-0.27***	–
M	2.62	3.65	2.69	3.13	3.02	2.20	1.83	2.42	2.10	3.08	3.14	4.81	5.23
SD	1.03	1.31	1.18	1.18	1.04	0.55	0.58	0.70	0.49	0.47	0.50	1.01	1.85

Note. WCS-OC—Obsessive-Compulsive Desire for Work, WCS-SW—Anticipation of Compensation for Low Self-Worth, WCS-R—Anticipation of Reduction of Negative Emotions (Relief) and Withdrawal Symptoms, WCS-NP—Neurotic Perfectionism, WCS—Workaholism measured with the WCS, WART-R-C—Control, WART-R-OC—Obsession-Compulsion, WART-R-WO—Work Overload, WART-R—Workaholism measured with WART-R, SES-SC—Self-Competence, SES-SL—Self-Liking, PE—Positive Emotions, NE—Negative Emotions; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

#### ANALYSIS OF CRITERION VALIDITY

As expected, the correlations between work addiction and unmitigated agency and unmitigated communion were positive (see Table 2), although they were definitely stronger for the former than for the latter dimension of social orientation. The values of correlation coefficients between WCS and its subscales and unmitigated agency ranged from 0.43 to 0.51 (max. 26.0% of shared variance). In the case of unmitigated communion, the values of the coefficients ranged from 0.12 to 0.13, which meant the level of shared variance was quite low (1.7%), except for WCS-SW (0.21 = 4.0%).

It was predicted that the correlation between work addiction and communion would be negative, and that the correlation between work addiction and agency would be negative and weak. The data supported this hypothesis only for communion (values from -0.31 to -0.16, i.e., max. 9.6% of shared variance; see Table 3 for details). The findings presented in Table 4 confirm the hypotheses regarding the negative relationship between the WCS and self-esteem, for both self-competence and self-liking. The negative relationship between the WCS dimensions and positive emotions, and the positive relationship between the WCS dimensions and negative emotions supported the proposed hypotheses; however, the effect sizes were relatively small.

### ANALYSIS OF STABILITY IN TIME (TEST-RETEST)

The values of Pearson's  $r$  correlation coefficient of the two measurements carried out using WCS (sample F only) were statistically significant ( $p < .001$ ) and very high (.81 and above). These results indicate the high stability of the WCS scores over time.

### DISCUSSION

A patient's obsessive-compulsive tendency to overwork is not necessarily indicative of addiction, which means that the phenomenon operationalized as this tendency is not synonymous with workaholism. The work craving theory seems clinically promising, because it defines work addiction not solely as an obsessive-compulsive desire for work, but also in terms of three other components: two hedonic ones (the anticipation of compensation for low self-worth and anticipation of reduction of negative emotions and withdrawal symptoms) as and neurotic perfectionism (cf. Wojdylo, 2013a, 2016; see Wojdylo, 2019).

The current findings point to the high validity and reliability of the WCS. The CFA showed the best fit of the hypothesized four-factor model. Criterion validity was supported by the results showing a positive relationship between the WCS dimensions and unmitigated agency and unmitigated communion, a negative correlation with communion, and a negative association with self-esteem for the domains of self-competence and self-liking, as well as a negative relationship with positive emotions and a positive relationship with negative emotions. Thus, the present study shows that the higher the work addiction scores, the lower the concentration on interpersonal relations (communion), and the stronger the focus on one's own performance (unmitigated agency). The statistically non-significant correlation between work addiction and agency may indicate that in people who are addicted to work, self-esteem changes depend on the effects of work.

The weak, but statistically significant, positive relationship between work addiction and unmitigated communion can be interpreted as a function of sample specificity. It is possible that high unmitigated communion can only be found in a specific group of workers (so-called helping professionals, such as teachers, psychologists, or pastors), and such participants did not take part in the present study. The hypothesis on the relationship between work addiction and unmitigated communion should, therefore, be verified in future studies.

Although previous research has already shown that there is a negative relationship between work addiction and global self-esteem (see Wojdylo et al., 2013), the present study shows more specifically that the relationship concerns both self-competence and self-liking. The relatively low correlation values ( $r$ ) may indicate that self-esteem in work addicts may be moderated by the effects of work. This notion should be verified in future studies (e.g., experimental) measuring self-esteem at various stages of the work process (e.g., before and after the task).



It is possible that workaholics also experience dynamic changes in positive and negative emotions as indicated by the statistically significant but relatively low correlations between work addiction and both types of emotions. Future research may provide more insight, allowing a more comprehensive interpretation of the relationships between work addiction and emotional states.

It should be noted that one of the strengths of the present study is the large sample of participants of different ages who have different occupations, work at different companies, and hold different job positions. These characteristics increase the external validity of the current findings.

Previous studies on the reliability and validity of the WCS indicated that the questionnaire could be used for group research (cf. Wojdylo et al., 2013). Further validation studies of the WCS should focus on verifying the universality of the four-factor structure in other nationalities, as there exist differences between countries in work ethics and work styles which may be related to the development of workaholism.

According to the extended model of work craving developed by Wojdylo (2019), researchers of work craving should consider the role of two types of hedonic stimulations—those originating from activity (measured by the current version of WCS) and also those associated with the consequences of activity. Thus, it would be worthwhile to extend the WCS with items relating to purpose-related hedonic incentives (i.e., a purpose-related reduction of negative emotions and a purpose-related compensation for low self-worth).

In the context of individual diagnosis, it would be essential to develop standards for the Polish sample. An early and accurate diagnosis of work addiction that would take into account the mechanisms of addiction could promote a unified understanding of this phenomenon as an addiction. It can also lead to the creation of appropriately adapted forms of preventive actions and interventions for the treatment of work addiction.

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