

Validation of the French Utrecht Work Engagement Scale and its relationship with personality traits and impulsivity

Validation de la version française de l'Échelle d'engagement au travail d'Utrecht et relations avec les traits de personnalité et l'impulsivité

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A B S T R A C T

Keywords:
Work engagement
Personality
Impulsivity

Introduction. – Work engagement is a positive state of mind related to work, characterized by vigor, dedication, and absorption. It is measured through the Utrecht Work Engagement Scale (UWES), which has shown good psychometric properties across occupational types and languages. Besides, some individuals may more easily experience work engagement than others, suggesting that individual stable tendencies could predict this state of mind.

Objectives. – In this article, we aim to: (1) present the psychometric properties of the French versions of the Utrecht Work Engagement Scale (UWES-9 and UWES-17), and (2) assess whether work engagement can be associated with personality traits and impulsivity.

Method. – For this purpose, 661 French-speaking workers ($M_{age} = 40.86$, $SD_{age} = 12.35$) were recruited in the French-speaking part of Switzerland. Two hundred and eleven subjects responded to the UWES-17, the Zuckerman-Kuhlman-Aluja Personality Questionnaire (ZKA-PQ) and the UPPS Impulsive Behaviour Scale (UPPS), and 450 subjects responded to the UWES-9 and the NEO-Five-Factor Inventory Revised (NEO-FFI-R).

Results. – Results showed that UWES-9 reached better psychometric properties than UWES-17. Moreover, it appeared that individuals who were active, conscientious, emotionally stable, and extroverted were more prone to experience work engagement than others.

Discussion. – Thus, the path to experiencing work engagement seems to differ as a function of personal stable characteristics. Further studies should analyse how personal characteristics interact with working conditions in determining work engagement.

R É S U M É

Mots clés :
Engagement au travail
Personnalité
Impulsivité

L'engagement au travail est un état d'esprit positif en lien avec le travail qui se caractérise par de la vigueur, du dévouement et de l'absorption. Cet état se mesure à l'aide de l'Échelle d'Engagement au Travail d'Utrecht (UWES), qui possède de bonnes propriétés psychométriques dans différentes catégories professionnelles et dans différentes langues. Nous soutenons l'idée que certains individus auraient plus facilement tendance à expérimenter un état d'engagement au travail que d'autres, suggérant que des tendances individuelles stables pourraient être associées à cet état d'esprit. Cet article a pour but de: (1) présenter les propriétés psychométriques de la version française de l'Échelle d'Engagement au Travail d'Utrecht (UWES-9 et UWES-17), et (2) d'évaluer si l'engagement au travail peut être prédit par les traits de personnalité et l'impulsivité. Dans ce cadre, 661 travailleurs ($M_{age} = 40,86$, $SD_{age} = 12,35$) ont été recrutés dans une région francophone de la Suisse et une région française à la frontière de la Suisse. Deux cent onze sujets ont répondu à l'UWES-17, au Questionnaire de Personnalité de Zuckerman-Kuhlman-Aluja (ZKA-PQ) et à l'Échelle de Comportements Impulsifs UPPS (UPPS), et 450 sujets à l'UWES-9 et à l'Inventaire révisé de Personnalité NEO-FFI-R (NEO-FFI-R). Les résultats indiquent que la version à 9 items de l'UWES

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présente de meilleures propriétés psychométriques que la version à 17 items. Par ailleurs, les individus qui sont actifs, consciencieux, émotionnellement stables et extravertis ont plus tendance à expérimenter un état d'engagement au travail que les autres. Dès lors, les recherches futures devraient tenir compte de la manière dont les caractéristiques personnelles interagissent avec les conditions de travail et de l'impact de cette interaction sur l'engagement au travail.

1. Introduction

Interindividual differences, such as cognitive abilities and personality traits, play a significant role on various life domains such as work (Kuncel, Ones, & Sackett, 2010). Not only do these differences predict work performance, but also attitudes that impair or increase well-being at work. From this perspective, work engagement, which can be considered a positive psychological state of mind that increase well-being at work, might therefore be influenced by personal stable personal attributes. For example, some personality traits and profiles may influence the perception of work environment positively or negatively and may facilitate the activation of (in)effective regulatory processes. The use of these processes may increase or decrease the probability to experience work engagement. Thus, the aims of this study are:

- to assess the psychometric properties of the French version of the Utrecht Work Engagement Scale;
- to assess how personality traits and work engagement are related.

1.1. Work engagement

Work engagement refers to an active and positive state of mind that implies a complete immersion in and concentration on work activities, as well as a feeling of fulfilment related to these types of activities (Schaufeli, Salanova, González-Romá, & Bakker, 2002). This state of mind is characterized by three dimensions: vigor, dedication, and absorption. Vigor is the affective component of work engagement and can be defined as the level of energy and mental endurance present during a work activity. Dedication, which is the motivational part of work engagement, corresponds to the level of involvement in one's activity, to its meaningfulness, and to the feelings of enthusiasm and challenge derived from work. Finally, absorption, which is the cognitive aspect of work engagement, refers to the level of concentration present during work and is characterized by a feeling that time goes faster when working. It also includes a difficulty to disengage from a work activity.

Work engagement can be differentiated from similar concepts such as job involvement or organizational commitment (Hallberg & Schaufeli, 2006). Indeed, although these concepts are to some extent related and refer to a positive attachment to work, they focus partly on different aspects. Job involvement refers to one's identification with work and one's intrinsic motivation, whereas organizational commitment refers to one's emotional attachment to the company or institution for which one works, implying the adherence to the values and interests of the company or the institution. Contrary to this, work engagement focuses primarily on process aspects of work, which leads to a personal and positive experience of well-being. In the same way, work engagement can be differentiated from workaholism (Gorgievski & Bakker, 2010). Although both concepts refer to an attitude of passion toward work, workaholism refers to a kind of "obsessive passion", characterized by a compulsion toward activity and excessive working. This type of passion also interferes with other life domains, implying that the individual is controlled and alienated by the activity.

Conversely, work engagement can be considered as a "harmonious passion" for work, in which activity is controlled and mastered by the worker and does not interfere with other life domains (Vallerand & Houlfort, 2003). The worker takes pleasure in what he/she does and does not work compulsively. In addition, several authors claim that work engagement can be considered as the opposite of burnout (Schaufeli, Taris, & van Rhenen, 2008). In fact, vigor appears to be the opposite of emotional exhaustion, whereas dedication the opposite of cynicism. These pairs of opposite poles respectively define two core dimensions of employee well-being, which are energy and identification (González-Romá, Schaufeli, Bakker, & Lloret, 2006).

1.2. The Utrecht Work Engagement Scale

Work engagement, and its subdimensions, can be assessed with the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2004). Several forms of the questionnaire exist, of which, a 17-item and 9-item version is particularly widely used. These two versions have demonstrated good psychometric properties, especially the 9-item version (Schaufeli, Bakker, & Salanova, 2006; Schaufeli et al., 2002). Confirmatory factor analyses, calculated on the original Dutch version, showed that a three-factor structure, constituted by vigor, dedication, and absorption, was found to be more adequate to evaluate work engagement than a one-factor solution. Concerning the 17-item version, reliabilities of the original version were .83 for vigor, .92 for dedication, .82 for absorption, and .93 for the total score. For the 9-item version, these coefficients were .84 for vigor, .89 for dedication, .79 for absorption, and .93 for the total score (Schaufeli & Bakker, 2004). The three-factor structure also seems to replicate across several occupational groups, as well as in different languages (Balducci, Fraccaroli, & Schaufeli, 2010; Schaufeli & Bakker, 2004; Schaufeli et al., 2006; Seppälä et al., 2009; Shimazu et al., 2008). Even though, French data were included in cross-national studies on work engagement (Schaufeli & Bakker, 2004; Schaufeli et al., 2006), no validation study was published to date regarding the French versions of the UWES. One of the aims of this paper is, thus, to establish the psychometric properties of the French version of the UWES-17 and the UWES-9 in a sample of French-speaking workers.

1.3. Work engagement and personality

Personality can be defined as the "psychological qualities that contribute to an individual's enduring and distinctive patterns of feeling, thinking, and behaving" (Pervin & Cervone, 2010, p. 8). According to this perspective, personality implies a comprehensive definition of the individual as it refers to a complete and complex variety of traits and processes – stable over time and consistent across situations – characterizing a person. These traits and processes play a role in how (in)effectively one interprets his/her environment and activates self-regulatory strategies to (in)efficiently adapt to the environmental demands. Traits may, therefore, contribute to (in)directly improve or impair the capacity to experience work engagement.

Personality traits are involved in several aspects of work, such as the perception of professional environment, well-being at work, and performance (e.g., Barrick & Mount, 2012). Among the Big Five traits, extraversion and emotional stability are positively related to job satisfaction and organizational commitment, and negatively related to the desire to change one's job and burnout-related outcomes (Thoresen, Kaplan, Barsky, Warren, & de Chermont, 2003). Moreover, conscientiousness and, to a lesser extent, emotional stability predict better work performance (Barrick & Mount, 2012). To the contrary, low levels of conscientiousness and high levels of negative affectivity predict counterproductive work behaviors (Bowling & Eschleman, 2010).

Several studies investigated the relationships between personality traits, as conceptualised by the Five-Factor Model, and work engagement. For example, it has been shown that individuals who tend to frequently experience work engagement were found to be characterized by low levels of neuroticism and high levels of extraversion (Langelaan, Bakker, Lorenz, van Doornen, & Schaufeli, 2006). Moreover, it appeared that personality traits, in addition to their direct effect on work engagement, also played a role in the way workers perceive their work environment. A study conducted by Bakker, Boyd, Dollard, Gillespie, Winefield, & Stough (2010) showed that neuroticism was related to the perception of higher job demands, whereas extraversion was related to the perception of higher job resources in a sample of academics. These results suggest that individuals who are more prone to experience negative emotions could perceive their work environment as insecure and uncomfortable and, consequently, may have difficulties in experiencing work engagement or occupational commitment. By contrast, individuals who are more prone to experience positive emotions could focus their attention on more positive elements related to work, which facilitates the experience of work engagement. In addition, work engagement is positively related to task and contextual performances, as well as active learning behaviours among workers who are high on conscientiousness. Indeed, conscientious employees may work efficiently concerning the planning of their work activities, given their capacity to use personal and job resources when necessary and to be less susceptible to boredom (Bakker, Demerouti, & Ten Brummelhuis, 2012).

1.4. Work engagement and impulsivity

The absence of self-control also refers, to some extent, to another personality trait: impulsivity. Impulsivity can be defined as "the tendency to act on immediate urges, either before consideration of possible negative consequences or despite consideration of likely negative consequences" (DeYoung, 2010, p. 487-488). In a recently developed model, Whiteside and Lynam (2001), considered impulsivity as a multidimensional concept related to two broader dimensions that encompass:

- a deficit in self-control related to emotion-based rash action, and cognitive deficits related to boredom susceptibility and difficulties in planification;
- motivation to seek for new and thrilling activities (Bechara & Van der Linden, 2005; Cyders & Smith, 2007).

Deficits in self-control are underlined by:

- urgency, or the tendency to react uncontrollably in the presence of high emotions;
- lack of perseverance, or the difficulty to stay concentrated on a task that can be difficult or boring;
- lack of premeditation, or the difficulty to think about and reflect on the consequences of an action before engaging into it.

Motivational aspects of impulsivity are characterized by sensation seeking, which is the tendency to like and pursue activities that are exciting as well as an openness to live new experiences that may or may not be dangerous.

Impulsivity traits, especially urgency, lack of perseverance, and lack of premeditation, may play a role in the development of counterproductive work behaviours (Spector, 2011). Additionally, impulsivity might play a negative role for tasks that require time investment. Thus, it can be hypothesized that individuals who tend to be impulsive could have more difficulties in experiencing work engagement. As this state of mind is generally reached after a certain amount of time invested at work, individuals who are especially sensitive to boredom and/or have difficulties to overcome obstacles of short duration when working could have more difficulties in being vigorous, dedicated, and absorbed in their work. For example, researchers have shown that workers who suffer from attention-deficit/hyperactivity disorder/symptoms (ADHD; disorder characterized by a certain level of impulsivity related to deficits in premeditation and perseverance) show lower performance at work (Halbesleben, Wheeler, & Shanine, 2013; Kessler, Lane, Stang, & Van Brunt, 2009). ADHD symptoms imply difficulties in allocating, directing, or investing attentional resources, which are necessary to manage job demands. Thus, individuals who suffer from ADHD may have difficulties in attributing efficient attentional resources so as to reach long-term goals, becoming possibly less prone to experience work engagement. Additionally, Halbesleben et al. (2013) showed that ADHD symptoms moderated the relationship between work engagement and work performance by reducing its strength, suggesting that individuals who had ADHD symptoms seemed to have difficulties in translating their resources into performance. Therefore, we hypothesized that impulsivity might play a role in the difficulty to reach and maintain work engagement, as well as use its benefits, without being necessarily related with ADHD symptoms, which would have consequences on job performance in the long-term.

Thus, the aims of this paper are to study:

- the psychometric properties of the French version of the UWES-17 and the UWES-9;
- the relationships between work engagement, personality traits (measured as a function of two models of the trait perspective), and impulsivity. First, we hypothesize that the three-factor structure of the original Dutch version replicates in French (Hypothesis 1). Second, we expect that high-level personality traits related to emotional stability, positive affectivity, and self-regulation positively predict work engagement, whereas traits related to emotional instability, negative affectivity and deficits in self-regulation negatively predict work engagement (Hypothesis 2).

2. Method

2.1. Participants

The total sample comprised of 661 French-speaking employees, 336 women and 324 men ($M_{age} = 40.86$, $SD_{age} = 12.35$, age range: 19 to 64 years) living and working in Switzerland or just over the border in France. One participant did not indicate his or her gender. Participants' occupations were classified according to a simplified version of the International Standard Classification of Occupations-88 (Genoud, 2005). According to this classification, 22 participants held senior official or manager positions; 152 occupied intellectual or scientific professions; 126 worked as technicians or associate professionals (e.g., physical and engineering science technicians, computer associate professionals, optical and electronic equipment operators, etc.); 121 worked as clerks; 123 worked in the field of

services, shop/market sales, or agriculture/fishery; 64 were craft or related trades workers; and 32 worked as plant/machine operators or assemblers, or had an elementary occupation. Twenty-one subjects did not provide information about their occupation.

2.2. Procedure

Bachelor-level psychology students collected the data as part of their quantitative methodology classwork. The students were each in charge of recruiting employed participants. Participants were asked to return their questionnaires directly to the Institute of Psychology at the University of Lausanne in the self-addressed stamped envelopes provided in order to guarantee complete confidentiality of the data. For the purposes of this study, two samples of workers were collected. Sample 1 is comprised of 211 employees, who completed the French versions of the Utrecht Work Engagement Scale 17 (UWES-17), the Zuckerman-Kuhlman-Aluja Personality Questionnaire (ZKA-PQ), and the UPPS Impulsive Behaviour Scale (UPPS). Sample 2 is comprised of 450 participants, who responded to the French versions of the Utrecht Work Engagement Scale 9 (UWES-9) and the NEO-Five Factor Inventory Revised (NEO-FFI-R). For part of the statistical analyses, the data of these two samples were merged into one dataset. More details are given in the statistical analyses section. The present study complied with the ethical rules of the American Psychological Association (APA) and of the Swiss Society of Psychology (SSP).

2.3. Instruments

2.3.1. The Utrecht Work Engagement Questionnaire

(UWES; Schaufeli & Bakker, 2004; Schaufeli et al., 2002). For this study, the 17- and the 9-item versions were used (UWES-17: 6 items for vigor, 5 items for dedication, and 6 items for absorption; UWES-9: 3 items per dimension). The 9-item version is a brief version of the longer 17-item version. The response format consists of a 7-point Likert-type scale (0 = never, 6 = always). Reliabilities of the original Dutch version was .93 for the total score, and ranged from .79 to .89 for the three subscales of the 17-item version, and was .93 for the total score, and ranged from .82 to .92 for the three subscales of the 9-item version (Schaufeli & Bakker, 2004).

2.3.2. The Zuckerman-Kuhlman-Aluja Personality Questionnaire

(ZKA-PQ; Aluja, Kuhlman, & Zuckerman, 2010). The French version of the ZKA-PQ is a 200-item inventory that measures the dimensions of the Alternative Five-Factor Model (AFFM) of personality (Rossier, Hansenne, Baudin, & Morizot, 2012). The ZKA-PQ measures five dimensions and twenty facets: activity, extraversion, neuroticism, aggressiveness, and sensation seeking. Each dimension is measured by 40 items and the response format consists in a 4-point Likert-type scale (1 = strongly disagree, 4 = strongly agree). Cronbach's alphas for the French version range from .89 to .93 concerning dimensions. For simplicity, we decided to present only the results related to the five higher-order dimensions.

2.3.3. The NEO-Five-Factor Inventory Revised

(NEO-FFI-R; McCrae & Costa, 2004). The French version of the NEO-FFI-R is a 60-item inventory that measures the five main personality dimensions of the Five-Factor Model of personality (FFM): neuroticism, extraversion, openness, agreeableness, and conscientiousness (Aluja, García, Rossier, & García, 2005). Each dimension is measured by 12 items and the response format consists in a 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree). Cronbach's alphas in our samples ranged from .70 to .83.

2.3.4. The UPPS Impulsive Behaviour Scale

(UPPS; Whiteside, Lynam, Miller, & Reynolds, 2005). The French version of the UPPS is a 45-item inventory that measures impulsivity according to the four dimensions of Whiteside and Lynam's model: urgency (12 items), lack of perseverance (10 items), lack of premeditation (11 items), and sensation seeking (12 items). The response format consists in a 4-point Likert-type scale (1 = strongly agree, 4 = strongly disagree). Cronbach's alphas of the French version range from .77 to .83.

2.4. Hypotheses

Hypothesis 1. The first objective of this paper was to explore the psychometric properties of the UWES. As stated above, we expect a confirmation of the well-replicated three factorial structure.

Hypothesis 2. To meet the second objective of this paper, we postulated several hypotheses regarding the relationships between personality traits, impulsivity, and work engagement. First, in agreement with the literature, we hypothesized that a low level of neuroticism, and high levels of extraversion and activity as measured by the ZKA-PQ would be related to high levels of work engagement (Hypothesis 2.1). Second, we also hypothesized that a low level of neuroticism, and high levels of extraversion and conscientiousness as measured by the NEO-FFI-R would be related to high levels of work engagement (Hypothesis 2.2). These two aforementioned assumptions were made because the dimensions of both models are known to be correlated (Aluja et al., 2010). Among all the existing relationships between both models, it appears that neuroticism and extraversion measured by the ZKA-PQ correlate respectively with neuroticism ($r = .71$) and extraversion ($r = .62$) measured by the NEO-FFI-R. Additionally, activity measured by the ZKA-PQ is positively correlated to extraversion ($r = .34$) and to conscientiousness ($r = .48$) measured by the NEO-FFI-R. Third, we postulated that among the four dimensions measured by the UPPS model of impulsivity (Hypothesis 2.3), deficits in perseverance and premeditation would be negatively related to work engagement, particularly because they constitute a deficit in conscientiousness. More precisely, in Whiteside and Lynam's (2001) model, deficits in perseverance and premeditation refer respectively to a lack of self-discipline and a lack of deliberation, which are two facets of conscientiousness in Costa and McCrae's Five-Factor Model. We decided to use several models of personality traits and impulsivity to analyze whether there were coherent convergences between their predictive power on work engagement. We expected these convergences because the three models used in this study are issued from the same trait and factor perspective of personality psychology.

2.5. Statistical analyses

First, concerning Hypothesis 1, i. e. the study of the psychometric properties (more precisely the factorial validity) of the UWES, confirmatory factor analyses (CFA) were performed to study the factorial structure of both versions of the UWES. Concerning UWES-17, CFA were calculated for sample 1, as only the subjects of this sample completed the 17-item version. Data of sample 1 and sample 2 were, then, merged into one dataset to test the factorial validity of UWES-9 and to calculate descriptive statistics. CFA analyses related to the UWES concerned samples 1 and 2. However, analyses related to the ZKA-PQ and the UPPS concerned sample 1, whereas those related to the NEO-FFI-R concerned sample 2. Second, in order to study Hypotheses 2.1, 2.2, and 2.3, and in addition to descriptive analyses, hierarchical linear regressions, for which gender and age were performed, were calculated to test

the predictive value of personality traits and impulsivity on work engagement.

3. Results

3.1. Hypothesis 1 - Factorial structure of the UWES-17 and the UWES-9

In order to study the factorial structure of both the UWES-17 and the UWES-9, a series of CFA were run using Mplus 6 (Muthén & Muthén, 2010). Similarly to the method used by Balducci et al. (2010), three models were calculated for each version of the questionnaire: a one-factor solution, for which all the items were associated to a general work engagement factor; a three-factor model, and an improved model allowing error terms to covary when associated with a modification index higher than 10. The fit of the model was considered acceptable when the comparative fit index (CFI) and the Tucker-Lewis index (TLI) reached values equal to or lower than .90, and when the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR) reached values equal or lower than .08 (Hu & Bentler, 1999).

The results presented in Table 1 indicated that the three-factor solution fits better than the one-factor solution for both the 17-item and the 9-item versions of the UWES. Better fit indices were generally observed for the UWES-9. Nevertheless, some of the fit indices for the three-factor solutions did not reach satisfactory values. This was the case for all indices of the UWES-17, and for the TLI and the RMSEA of the UWES-9. In order to improve these models, five covariances between error terms were taken into account for the UWES-17. These modifications significantly improved the fit of the model, $\chi^2(111) = 280.35, p < .001$. However, the RMSEA did still not reach values indicative of a good fit.

For the UWES-9, three covariances between error terms were taken into account. Those error term covariations were made between item 11, which measures absorption (e.g., "I am immersed in my work"), and item 14, which also measures absorption (e.g., "I get carried away when I'm working"); between item 1, which measures vigor (e.g., "At my work, I feel bursting with energy"), and item 4, which also measures vigor (e.g., "At my job, I feel strong and vigorous"); and between item 5, which measures dedication (e.g., "I am enthusiastic about my job"), and item 7, which also measures dedication (e.g., "My job inspires me"). These modifications significantly improved the fit of the model, $\chi^2(21) = 92.91, p < .001$, and all fit indices reached satisfactory values. As UWES-9 reached better fit values and as fewer error term covariances were computed in the CFA models with it, only UWES-9 was used in the next analyses.

3.2. Descriptive analyses

Table 2 reports the values for means and standard deviations, effect size of the differences between women and men, correlations with age, internal consistencies, and skewness and kurtosis.

Concerning the internal consistency of the instruments, Cronbach's alphas indicated high reliability for both versions of the UWES questionnaires, the five dimensions of the ZKA-PQ, and the four subscales of the UPPS with values higher than .70. Concerning the NEO-FFI-R, alphas were above .70 for neuroticism, agreeableness, and conscientiousness, and below .70 for extraversion and openness. Skewness and kurtosis in absolute value were usually below 1, indicating that scores of most scales tend to be normally distributed. Only the kurtosis values of the dedication and of the total scales of UWES-9 were slightly above 1. Correlations with age were calculated given that personality traits can vary as a function of age: a decrease in neuroticism, and increases in conscientiousness and agreeableness were observed with age (Allemand, Zimprich, & Hendriks, 2008; Soto, John, Gosling, & Potter, 2011). Small correlations with age in terms of effect size ($r \geq .10$) were observed for vigor and the total UWES scores with the brief 9-item version. Small correlations with age were also observed for neuroticism, extraversion, and conscientiousness measured on the NEO-FFI-R. Medium negative correlations with age ($r \geq .30$) were observed for aggressiveness and both sensation seeking scales. Concerning mean differences between women and men, women had higher scores on neuroticism ($t(196) = -3.30, p < .01, d = .47$) of the ZKA-PQ, on urgency ($t(206) = -2.45, p < .05, d = .33$), on neuroticism ($t(437) = -3.56, p < .001, d = .34$), extraversion ($t(434) = -3.46, p < .01, d = .34$), openness ($t(428) = -2.55, p < .05, d = .25$), and agreeableness ($t(428.58) = -3.45, p < .01, d = .33$) of the NEO-FFI-R. They also had lower scores than men on sensation seeking scales of the ZKA-PQ ($t(195) = 2.67, p < .01, d = .38$) and of the UPPS ($t(206) = 4.63, p < .001, d = .63$).

ANOVA's and Scheffe's post hoc tests were also calculated to compare mean scores of work engagement among all occupational types measured in both samples. Significant differences were observed between occupational types ($F(6,633) = 7.39, p < .05, \eta^2 = .07$). Participants who worked as senior officials or managers ($M = 4.61, SD = 1.06$), who had an intellectual or a scientific profession ($M = 4.54, SD = .87$), or a technical/associate profession ($M = 4.36, SD = .96$) were more engaged than plant/machine operators or assemblers ($M = 3.42, SD = 1.55$).

3.3. Hypothesis 2 - Relationships between work engagement, personality traits, and impulsivity

In order to study the relationships between work engagement, personality, and impulsivity, we first calculated correlations (see Tables 3 and 4). Concerning the correlations with the AFFM, work engagement correlated positively with the activity and extraversion dimensions, and negatively with the neuroticism dimension. Concerning the correlations with the FFM, work engagement correlated positively with the extraversion and conscientiousness dimensions, and negatively with the neuroticism dimension. Finally, work engagement correlated negatively with one impulsivity facet, lack of perseverance.

Table 1

Fit indices of the CFA models for the UWES-17 and the UWES-9.

	χ^2	df	p	CFI	TLI	RMSEA	SRMR
UWES-17							
1-factor	480.64	119	<.001	.82	.80	.12	.07
3-factor	354.32	116	<.001	.88	.86	.10	.08
3-factor improved	280.35	111	<.001	.92	.90	.09	.06
UWES-9							
1-factor	576.05	27	<.001	.87	.82	.18	.06
3-factor	324.29	24	<.001	.93	.89	.14	.08
3-factor improved	92.91	21	<.001	.98	.97	.07	.02

Concerning the UWES-17, only sample 1 data ($n = 211$) was used in the CFA models, whereas, for UWES-9, sample 1 and sample 2 data ($n = 450$) were used in the CFA models. CFI: comparative fit index; TLI: Tucker-Lewis index; RMSEA: root mean square error of approximation; SRMR: standardized root mean square residual.

Table 2
Descriptive statistics.

	α	Women		Men		Total		d	r_{age}	Skewness	Kurtosis	
		M	SD	M	SD	M	SD					
UWES-17												
Vigor	.81	4.37	.82	4.41	.88	4.39	.85	.05	.08	-.42	.08	
Dedication	.85	4.54	.96	4.42	1.01	4.48	.98	.12	.02	-.70	.21	
Absorption	.82	4.10	.92	4.09	.96	4.09	.94	.01	.10	-.30	-.13	
UWES total	.93	4.34	.86	4.30	.85	4.32	.85	.05	.07	-.43	.17	
UWES-9												
Vigor	.81	4.29	1.07	4.15	1.07	4.22	1.08	.13	.14 ^b	-.62	.45	
Dedication	.90	4.45	1.27	4.28	1.23	4.37	1.25	.14	.09 ^a	-.99	1.03	
Absorption	.82	4.21	1.11	4.07	1.17	4.14	1.14	.12	.08 ^a	-.73	.88	
UWES total	.92	4.32	1.04	4.17	1.04	4.24	1.04	.14	.11 ^b	-.81	1.07	
ZKA-PQ												
Activity	.89	110.87	12.47	111.16	15.03	111.02	13.84	.02	-.03	.12	.34	
Aggressiveness	.90	86.00	14.89	87.71	14.02	86.91	14.42	.12	-.30 ^c	.36	.34	
Extraversion	.90	119.02	13.39	117.09	14.61	118.04	14.02	.14	-.14	-.38	.35	
Neuroticism	.93	91.42	16.66	83.71	16.21	87.29	16.83	.47	.03	.49	.34	
Sensation seeking	.87	93.68	12.92	99.04	14.96	96.54	14.26	.38	-.33 ^c	.00	.35	
UPPS												
Urgency	.81	2.35	.42	2.21	.42	2.28	.42	.33	.00	-.12	.22	
Lack of perseverance	.80	1.83	.40	1.87	.41	1.85	.40	.10	.02	.05	-.22	
Lack of premeditation	.86	2.09	.45	2.02	.45	2.05	.45	.15	-.09	.02	-.07	
Sensation seeking	.88	2.18	.59	2.56	.61	2.38	.63	.63	-.30 ^c	.15	-.62	
NEO-FFI-R												
Neuroticism	.79	22.52	7.23	20.13	6.82	21.41	7.16	.34	-.11 ^a	.14	-.03	
Extraversion	.69	30.67	5.56	28.87	5.34	29.79	5.53	.33	-.13 ^b	-.07	-.10	
Openness	.67	30.28	5.61	28.85	5.84	29.60	5.75	.25	.00	.01	-.09	
Agreeableness	.74	30.85	6.87	28.75	5.84	29.83	6.46	.33	.04	-.09	-.32	
Conscientiousness	.76	33.34	5.67	32.29	5.93	32.81	5.84	.18	.11 ^a	-.08	-.21	

Scores for the UWES-9 dimensions are based on sample 1 and sample 2 data ($n=661$). Scores for the ZKA-PQ and the UPPS are based on sample 1 data ($n=211$). Scores for the NEO-FFI-R are based on sample 2 data ($n=450$). d = effect size of the mean differences between women and men. r_{age} = Pearson's correlation with age.

^a $p < .05$.

^b $p < .01$.

^c $p < .001$.

Table 3
Correlations between personality traits, impulsivity, and work engagement in Sample 1 ($n=211$).

	1	2	3	4	5	6	7	8	9	10	11	12	13
UWES-9													
Vigor													
Dedication	.78 ^c												
Absorption	.72 ^c	.69 ^c											
Total score	.92 ^c	.91 ^c	.89 ^c										
ZKA-PQ													
Activity	.49 ^c	.43 ^c	.44 ^c	.50 ^c									
Aggressiveness	-.12	-.11	-.03	-.10	.08								
Extraversion	.30 ^c	.33 ^c	.19 ^b	.30 ^c	.15 ^a	-.05							
Neuroticism	-.28 ^c	-.27 ^c	-.15 ^a	-.26 ^c	-.04	.21	-.45 ^c						
Sensation seeking	-.06	-.05	.00	-.04	.11	.29 ^c	.21 ^b	-.21 ^c					
UPPS													
Urgency	-.13	-.11	-.01	-.09	.15 ^a	.44 ^c	-.18 ^a	.59 ^c	.07				
Lack of perseverance	-.39 ^c	-.32 ^c	-.31 ^c	-.38 ^c	-.43 ^c	.07	-.28 ^c	.31 ^c	-.03	.24 ^b			
Lack of premeditation	-.15 ^a	-.13	-.16 ^a	-.16 ^a	-.12	.30 ^c	.08	.00	.42 ^c	.22 ^b	.41 ^c		
Sensation seeking	-.10	-.11	-.04	-.09	.11	.19 ^b	.05	-.12	.76 ^c	.07	-.03	.24 ^c	

^a $p < .05$.

^b $p < .01$.

^c $p < .001$.

Hierarchical regressions, for which gender and age were controlled, were calculated in order to assess to which extent personality or impulsivity traits could predict work engagement (see Table 5). We controlled for age and gender because these variables showed some significant relationships with personality traits in the samples of this study. These regressions indicated that personality dimensions explained between 21% and 36% of the variance in work engagement, depending on the personality inventory considered. For the AFFM, activity, extraversion, and neuroticism predicted work engagement (Hypothesis 2.1). For the FFM, neuroticism, extraversion, and conscientiousness predicted work engagement (Hypothesis 2.2). Concerning the relationship with

impulsivity, the only significant predictor of work engagement was lack of perseverance (Hypothesis 2.3).

4. Discussion

The first objective of this study was to establish the psychometric properties of the UWES-17 and the UWES-9. Our results indicated that UWES-9 showed better psychometric properties than UWES-17. The second objective was to study the relationships between personality and work engagement, as well as between impulsivity and work engagement. Our aim was also to study whether different dimensional models of personality were

Table 4
Correlations between personality traits and work engagement in sample 2 ($n = 450$).

	1	2	3	4	5	6	7	8	9
UWES-9									
Vigor									
Dedication	.76 ^c								
Absorption	.65 ^c	.73 ^c							
Total score	.88 ^c	.93 ^c	.88 ^c						
NEO-FFI-R									
Neuroticism	-.32 ^c	-.29 ^c	-.14 ^b	-.28 ^c					
Extraversion	.39 ^c	.31 ^c	.28 ^c	.36 ^c	-.28 ^c				
Openness	.02	.09	.05	.06	.11 ^a	.20 ^c			
Agreeableness	.05	.03	.05	.05	-.06	.16 ^b	.22 ^c		
Conscientiousness	.33 ^c	.26 ^c	.24 ^c	.31 ^c	-.34 ^c	.32 ^c	.06	.27 ^c	

^a $p < .05$.

^b $p < .01$.

^c $p < .001$.

convergent in the explanation of work engagement. The analyses showed that work engagement and its subdimensions were significantly and coherently predicted by these personal and stable tendencies, which confirmed previous findings.

Concerning the validation of the UWES scales, the analyses of structure and reliability indicated that this instrument performs quite similarly to the original Dutch version, as well as to other language versions (e.g., Balducci et al., 2010; Schaufeli & Bakker, 2004, 2010; Schaufeli et al., 2006; Seppälä et al., 2009; Shimazu et al., 2008). CFAs showed that a three-factor solution fitted better

than a one-factor solution. However, it appeared that UWES-9 showed better psychometric properties and implied the calculation of fewer error term covariances in the CFA models. Most of the error terms covariances calculated in the CFA models of UWES-17 concerned items that are not present (items 2, 3, 12, 13, and 17) in UWES-9. Additionally, it appeared that, for UWES-9, most of the covariances were similar to those found for the Italian, Dutch, and Hebrew versions of the instrument (Balducci et al., 2010; Littman-Ovadia & Balducci, 2013). For each of these versions, the covariances were allowed between items 1 ("At my work, I feel

Table 5
Hierarchical regression models: prediction of work engagement and its subdimensions by personality, and impulsivity.

UWES-9	Vigor		Dedication		Absorption		Total score	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Sample 1 ($n = 211$) Predictor: ZKA-PQ								
Gender	.03	.08	.09	.11	-.05	-.01	.03	.07
Age	.19 ^a	.21 ^b	.08	.09	.05	.07	.11	.13
Activity		.49 ^c		.42 ^c		.45 ^c		.50 ^c
Aggressiveness		.01		-.01		.01		.01
Extraversion		.15 ^a		.24 ^b		.06		.17 ^a
Neuroticism		-.23 ^b		-.18 ^a		-.10		-.19 ^a
Sensation seeking		-.09		-.12		-.04		-.10
Adjusted R^2	.02	.38	.00	.31	-.01	.20	.00	.36
ΔR^2	.04	.37	.01	.33	.01	.23	.01	.37
F	3.10	15.60 ^c	1.17	12.13 ^c	.39	7.15 ^c	1.18	14.59 ^c
ΔF	3.10	19.90	1.17	16.30	.39	9.81	1.18	19.69
Predictor: UPPS								
Gender	.05	.02	.10	.06	-.01	-.04	.05	.01
Age	.15 ^a	.15 ^a	.06	.04	.06	.05	.09	.09
Urgency		-.06		-.05		.08		-.01
Lack of perseverance		-.40 ^c		-.32 ^c		-.32 ^c		-.39 ^c
Lack of premeditation		.07		.05		-.01		.04
Sensation seeking		-.04		-.08		-.01		-.05
Adjusted R^2	.02	.15	.00	.09	-.01	.07	.00	.12
ΔR^2	.03	.15	.01	.10	.00	.10	.01	.14
F	2.56	6.99 ^c	1.21	4.23 ^b	.30	3.57 ^b	1.16	5.62 ^c
ΔF	2.56	9.00	1.21	5.68	.30	5.19	1.16	7.78
Sample 2 ($n = 450$) Predictor: NEO-FFI-R								
Gender	.09	.06	.08	.07	.11	.07	.10 ^a	.07
Age	.13 ^a	.12 ^b	.08	.01	.07	.08	.10 ^a	.10 ^a
Neuroticism		-.19 ^c		-.22 ^c		-.05		-.17 ^b
Extraversion		.32 ^c		.23 ^c		.25 ^c		.29 ^c
Openness		-.04		.06		-.01		.01
Agreeableness		-.07		-.06		-.03		-.06
Conscientiousness		.17 ^b		.12 ^a		.12 ^a		.15 ^b
Adjusted R^2	.02	.26	.01	.18	.01	.10	.02	.21
ΔR^2	.02	.24	.01	.18	.02	.10	.02	.20
F	4.86	20.70 ^c	2.57	13.46 ^c	3.27 ^a	7.67 ^c	4.11 ^a	16.24 ^c
ΔF	4.86	26.42	2.57	17.61	3.27	9.29	4.11	20.68

Standardized β coefficients are reported.

^a $p < .05$.

^b $p < .01$.

^c $p < .001$.

bursting with energy”) and 4 (“At my job, I feel strong and vigorous”) that measure vigor in the CFA models. As Littman-Ovadia and Balducci (2013) underscored, items 1 and 4 are closer in terms of meaning between them than with item 8, which also measures vigor (“When I get up in the morning, I feel like going to work”). Moreover, the same statements – for the French, Italian, and Dutch versions – can be made for items 11 (“I am immersed in my work”) and 14 (“I get carried away when I’m working”), which measure absorption. These two items do have a closer meaning between them than with the third item that measures absorption, i. e. item 9 (“I feel happy when I am working intensely”). Similarly, the covariance between items 5 (“I am enthusiastic about my job”) and 7 (“My job inspires me”), which measure dedication, indicates an important overlap between these two items. This result was only observed in the French sample and not in the three others. However, those elements show that UWES share consistent and similar patterns across Western countries, at least.

Results were quite coherent regarding the relationships between work engagement and personality traits and confirmed our hypotheses. Activity, neuroticism, and extraversion of the ZKA-PQ, and conscientiousness, neuroticism, and extraversion of the NEO-FFI-R appeared to be significant predictors of work engagement and its subdimensions. Activity (ZKA-PQ) and Conscientiousness (NEO-FFI-R) refer to common personality aspects, and they correlate in a meaningful manner (Aluja et al., 2010). More precisely, it might be that the shared variance of these two factors refers to perseverance and high self-regulation abilities of action that characterize human personality. As a consequence, a certain amount of perseverance and self-regulation ability is needed to reach positive states of mind at work.

Neuroticism and extraversion, respectively, also seem to impair or increase the probability of experiencing positive states of mind at work, which highlights the important role of emotions in work engagement. According to Caspi, Roberts, & Shiner (2005), negative and positive affectivities (i. e., the tendency to experience (un)pleasant negative and positive emotions) are core components of neuroticism and extraversion. Therefore, it seems that affectivity, especially positive emotions, plays a central role in work engagement. All these results confirmed those found in previous studies concerning the relationships between personality traits and work engagement (e.g., Bakker et al., 2012; Langelaan et al., 2006). Overall, it appears that workers that are more prone to experience work engagement are those who tend to be emotionally stable, to frequently experience positive emotions, to be reflective, methodological, and perseverant, and who need to be active in their daily life.

Additionally, personality traits predicted vigor, dedication, and absorption with slight differences. Generally, each subdimension was predicted by the activity scale of the ZKA-PQ and the extraversion scale of the NEO-FFI-R. These results are quite consistent considering the fact that activity in the Alternative Five-Factor Model is one of the facets of the Five-Factor Model. Furthermore, vigor and dedication seemed to be related to a greater extent than absorption to personality traits. More particularly, these two dimensions might refer to activity/energy and affectivity components of personality that are constitutive of vitality. Indeed, vigor and dedication are assumed to be the affective and motivational components, respectively, of work engagement (Bakker, 2011), suggesting that these subdimensions comprise more affect-related tendencies than absorption. Thus, positive affectivity might enhance energy (vigor) and involvement (dedication) at work. Absorption refers more to cognitive aspects of work engagement (Bakker, 2011) and seems to be more related to the self-regulation of behaviours than to affectivity. This could explain why only the extraversion scale of the NEO-FFI-R predicted this subdimension

significantly and why other affect-related personality traits of both personality inventories were not significant predictors. However, it might be that, in order to become absorbed, a minimal activation of positive moods or emotions is necessary.

Concerning the role of impulsivity factors, results found with the UPPS were consistent with those found with the ZKA-PQ and the NEO-FFI-R. Among the four dimensions of impulsivity, it appears that lack of perseverance, but not lack of premeditation, was significantly and negatively related to work engagement and its subdimensions. In Whiteside and Lynam’s (2001) model, perseverance is related to the self-discipline facet of the NEO-PI-R, which is a facet of conscientiousness, and can be considered as a component of self-regulation (Cyders & Smith, 2007). As McCrae & Löckenhoff (2010) emphasized, individuals who are high in conscientiousness are more able to develop efficient self-regulation (and self-control) strategies, which allow them to reach long-term and more successful goals. Individuals low on these dimensions could have difficulties in persevering in work tasks, because they could be easily disturbed by short and involuntary thoughts, such as memories or daydreams. Indeed, lack of perseverance is characterized by a difficulty in resisting to proactive interference or difficulties in inhibiting irrelevant thoughts and/or recalls in the working memory (Billieux, Rochat, & Van der Linden, 2008). Thus, perseverance implies an accurate use of energy and self-regulation abilities, related to attentional control, in order to reach one’s goal without being too distracted. As a consequence, it can further be hypothesized that an increase of perseverance may increase the probability to reach work engagement.

4.1. Limitations

Some limitations should be noted in this study. First, the data collected refers to cross-sectional self-reported values. Further studies could include longitudinal designs, including experience sampling methods (ESM) for the measurement of state work engagement and a measure of job performance, so as to develop causal models of personality and work engagement.

Second, further research should also take into account the role of mediating processes between personality and work engagement. Personality traits are considered as higher-order structures in the trait approach and are related to a great variety of important processes that can translate the indirect role of personality. For example, Rossier, Zecca, Stauffer, Maggiori, and Dauwalder (2012) showed that the relationship between personality traits and work engagement was partially mediated by psychosocial processes allowing the individual to adapt to his/her career and life transitions (career adaptability processes). The inclusion of other process variables related to personality and affecting work engagement, such as coping styles, might be of interest.

Finally, this study only measured individual factors. Even though personality traits predict several important work outcomes, the strength of these relationships is a function of the outcome considered, of the complexity of the work activity, and of the work context (Barrick & Mount, 2012). In further studies, the buffering role of personality on the relationship between situational and environmental factors and well-being at work may be valuable to investigate, as well as taking into account the role of culture (Györkos, Becker, Massoudi, de Bruin, & Rossier, 2012).

5. Conclusions

To conclude, this study showed that the 9-item French version of the UWES had good psychometric properties and, therefore, should be used in further research concerning work engagement. This study also showed that some personality traits increase the

probability of experiencing work engagement, suggesting that some workers may more easily experience this positive state of mind than others. Thus, to some extent, engaged workers have a specific personality profile or, at least, specific stable characteristics. Finally, these results suggested that personality traits might be useful for the development of more comprehensive organizational interventions that can be tailored to meet the needs of individuals, job characteristics, and occupational contexts.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

Acknowledgement

This research was supported by a grant from the State Secretariat for Education and Research (SER) attributed to Prof. Dr. Jérôme Rossier, Dr. Koorosh Massoudi, and Prof. Gideon P. de Bruin, with the Swiss South African Joint Research Program fund (SSAJRP no. 11).

We would like to kindly thank Dr. Sarah D. Stauffer for having corrected the manuscript.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.erap.2014.10.003>.

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