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# Heavy work investment, personality and organizational climate

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## Abstract

**Purpose** – The purpose of this paper is to assess the relative importance of personality and organizational climate for two forms of heavy work investment; workaholism, a “bad” and work engagement, which represents a “good” kind of heavy work investment. More specifically, it is hypothesized that workaholism is positively related to neuroticism (*H1*) and that work engagement is negatively related to neuroticism and positively to the remaining Big Five personality traits (*H2*). In addition it is hypothesized that workaholism is positively related to an overwork climate (*H3*), whereas work engagement is positively related to an employee growth climate (*H4*).

**Design/methodology/approach** – An online survey was conducted among a sample of the Dutch workforce ( $n = 1,973$ ) and the research model was tested using structural equation modeling.

**Findings** – It appeared that, in accordance to *H1* and *H2*, particularly neuroticism is related to workaholism, while all personality traits are related to work engagement (predominantly openness to experience and neuroticism). Moreover, and also in accordance with the hypotheses, workaholism is exclusively related to an overwork climate (and not to a growth climate), whereas work engagement is exclusively related to an employee growth climate (and not to an overwork climate).

**Originality/value** – For the first time the simultaneous impact of personality and organizational climate on two different forms of heavy work investment is investigated. Since no interaction effects have been observed it means that of personality and organizational climate have an independent but also specific impact on both forms of heavy work investment.

**Keywords** Personality, Work engagement, Organizational climate

**Paper type** Research paper

Some employees allocate more time and energy to their work than others. Is this so-called workaholic heavy work investment (Astakhova and Hogue, 2013) associated with a particular organizational climate or with certain personality traits, or with both? On the one hand, organizations may unintentionally act as the “pushers” or “enablers” that encourage heavy work investment of their employees (Holland, 2008). In other words, a particular organizational climate may induce heavy work investment. On the other hand, a case can also be made that heavy work investment is related to the employee’s personality; that is, personality characteristics may predispose employees to invest heavily in their work. Conceptual frameworks have been proposed that conceive heavy work investment as the combined result of organizational climate and dispositional traits (e.g. Ng *et al.*, 2007; Fleck and Inceoglu, 2010). Basically, these are general, heuristic frameworks that do not specify particular interactions or joint effects. So far the intriguing question what makes employees work hard, a seductive organizational environment or personal inclination has not been studied. This paper



seeks to answer this question for two forms of heavy work investment: workaholism and work engagement, a “bad” and “good” kind of heavy work investment, respectively (Taris *et al.*, 2015). More specifically, the current study investigates the simultaneous, independent impact of the Big Five personality factors and organizational climate (i.e. overwork and personal growth climate) on workaholism and work engagement.

Workaholism refers to a strong inner compulsion to work excessively hard (Schaufeli *et al.*, 2008a), which includes a behavioral (working excessively) and a cognitive dimension (working compulsively). Workaholics feel compelled to allocate an excessive amount of time and energy to work because they cannot resist their compulsive need to work; they are obsessed with it. Although workaholism has occasionally been considered a positive state (e.g. Baruch, 2011) recent overviews (Andreassen, 2014; Clark *et al.*, in press) show compellingly that workaholism is predominantly associated with negative consequences such as poor sleep, work-family conflict, psychosomatic symptoms, job stress, burnout, reduced job and life satisfaction, counterproductive work behavior, and poor work performance. Therefore it is a “bad” kind of heavy work investment.

In contrast, work engagement refers to “a positive, fulfilling, work related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli *et al.*, 2002, p. 74). Engaged employees are energetic and work hard (vigor), they are enthusiastic and highly involved (dedicated), as well as focussed and happily engrossed in their work (absorption). Contrary to workaholism, work engagement is almost exclusively associated with positive features such as physical and mental health (e.g. good autonomic cardiac activity, low levels of depression), personal initiative, low sickness absence, superior in-role and extra-role performance, innovativeness, organizational commitment, reduced occupational accidents and injuries, organizational citizenship behavior, and less counterproductive work behavior (for reviews, see Simpson, 2009; Christian *et al.*, 2011; Schaufeli, 2014). Therefore it is a “good” kind of heavy work investment.

Both forms of heavy work investment relate to the Big Five personality characteristics (see below). In addition, the current study hypothesizes that heavy work investment is also associated with organizational climate: workaholism is expected to relate with an overwork climate and work engagement with an employee growth climate. The current study is unique because it simultaneously investigates personality traits and organizational climate as possible antecedents of both workaholism and work engagement.

### **Personality and heavy work investment**

Accumulating evidence exists that almost all personality characteristics can be incorporated in the Big Five personality model, consisting of: neuroticism (i.e. emotional instability, stress-proneness, insecurity, and depression); extraversion (i.e. sociability, ambition, energy, and assertiveness); agreeableness (i.e. being cooperative, caring, and likeable); conscientiousness (i.e. persistence, dependability, and being organized); and openness (i.e. sensitivity, being intellectual and imaginative, curious, and broadminded) (McCrae and John, 1992).

A recent meta-analysis (Clark *et al.*, in press) concludes that workaholism is weakly related only to extraversion ( $\rho = 0.06$ ). However, most included studies used the Workaholism Battery (Spence and Robbins, 1992), which is contested because not all authors agree that in addition to involvement and drive also (lacking) work enjoyment is a constituting element of workaholism (Andreassen, 2014). The picture changes dramatically when, instead of all three subscales, only the drive-component of the Workaholism Battery is considered, which constitutes the core of workaholism (Schaufeli *et al.*, 2008a). In that case neuroticism correlates 0.35 with

workaholism, whereas correlations with all remaining Big Five factors are much weaker (Burke *et al.*, 2006). The study of Clark *et al.* (2010) corroborated the prominent role of neuroticism because it was the only Big Five personality factor that was significantly related to workaholism.

Because no meta-analysis is available of work engagement and the Big Five personality characteristics, a literature search was conducted that identified nine studies. With only one exception the Utrecht Work Engagement Scale (Schaufeli *et al.*, 2002) was used to assess work engagement. As can be seen from Table I, all correlations are positive, except for neuroticism.

Conscientiousness shows the highest and most consistent correlation with work engagement, followed by extraversion, neuroticism, openness, and agreeableness, respectively. Six studies that regressed work engagement on all Big Five traits, so that their unique contribution could be established, showed mixed results. Two studies found that – after controlling for socio-demographic factors – work engagement was explained by neuroticism and conscientiousness (Inceoglu and Warr, 2011; Kim *et al.*, 2009). The remaining four studies found that work engagement was associated with four of the five personality factors, except neuroticism (Rossier *et al.*, 2012; Zaidi *et al.*, 2013), openness (Joseph *et al.*, 2011), and agreeableness (Akhtar *et al.*, 2015).

In sum: it seems that particularly neuroticism is positively associated with workaholism and negatively with work engagement. This makes sense because neuroticism refers to a predisposed vulnerability to experience negative psychological states. In addition, work engagement also seems to be positively associated with extraversion, conscientiousness, and to a lesser extend to agreeableness and openness. The positive association with extraversion and conscientiousness can be explained by the overlap that exists between the energy and persistence facets of both personality factors (McCrae and John, 1992) and work engagement. Engagement might be related to openness to experience because engaged employees are characterized by a promotion focus, which means that they are open for opportunities to grow and to develop (Van Beek *et al.*, 2013). Finally the positive relationship with agreeableness concurs with descriptions of engaged workers as being cooperative, caring, and likeable (Schaufeli, 2014).

Authors	n	Sample	Country	N	Correlation				
					E	A	C	O	
Akhtar <i>et al.</i> (2015)	1,050	Working adults from different sectors	UK	-0.20	0.24	0.12	0.20	0.31	
Inceoglu and Warr (2011)	741	Visitors of an assessment website	Multi-national	-0.38	0.33	0.16	0.40	0.22	
Kim <i>et al.</i> (2009) UWES	187	Employees of a restaurant chain	USA	-0.13	0.04	0.16	0.37	0.04	
Langelaan <i>et al.</i> (2006)	572	Working adults	The Netherlands	-0.44	0.41	na	na	na	
Ongore (2014)	118	University staff	Turkey	-0.29	0.32	0.44	0.36	0.53	
Rossier <i>et al.</i> (2012)	391	82% employees, 11% students, 7% others	Switzerland	-0.21	0.36	0.22	0.45	-0.07	
Woods and Sofat (2013)	238	Working adults	UK	-0.31	0.32	0.24	0.36	0.28	
Zaidi <i>et al.</i> (2013)	399	University teachers	Pakistan	-0.07	0.23	0.15	0.31	0.44	
Sample-weighted mean correlation				-0.27	0.29	0.17	0.32	0.27	

**Notes:** N, neuroticism; E, extraversion; A, agreeableness; C, conscientiousness; O, openness

**Table I.**  
Relations of work engagement and the Big Five personality factors

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Based on the previous overview two hypotheses are formulated:

- H1. Workaholism is positively related to neuroticism.
- H2. Work engagement is negatively related to neuroticism, and positively to extraversion, conscientiousness, openness to experience, and agreeableness.

### **Organizational climate and heavy work investment**

Organizational climate refers to the shared perceptions of employees and the meaning they attach to the policies, practices, and procedures they experience in their workplace, as well as to the behaviors they observe being rewarded, supported, and expected (Schneider *et al.*, 2013). In line Schneider (1975), who argued that the content of organizational climate should depend on the outcome of interest, two specific climates (i.e. overwork climate and employee growth climate) are investigated which are related to two specific outcomes (i.e. workaholism and work engagement, respectively). It is plausible that organizational climate is associated with heavy work investment because a working environment that embraces rather than condones heavy work investment will reinforce such behavior.

It has been argued that workaholism is particularly prevalent in masculine climates that encourage employees to be extremely competitive, power-hungry, task-oriented, and fearful of failure (Ng *et al.*, 2007). However, empirical research on workaholism and organizational climate is very scarce. An occasional study by Johnstone and Johnston (2005) found that employees who are exposed to an organizational climate that is characterized by strong work pressure display higher levels of drive (i.e. inner compulsion). This finding is congruent with the idea that a demanding climate encourages employees to devote an extraordinary amount of time and energy to their work, and hence fosters workaholism. So it can be reasoned that workaholism is likely to develop when employees perceive that working beyond set work hours, taking work home, and working during weekends are considered to be indispensable conditions for success and career advancement. Recently, Mazetti *et al.* (2014) coined the term overwork climate, which refers to employee's joint perceptions of these practices and expectations. They showed that, as expected, overwork climate was moderately positively related with workaholism.

In a similar vein, the relationship between work engagement and organizational climate has been debated but hardly investigated. In the HR-literature work engagement is typically associated with high performance work practices (e.g. Thompson, 2010). The underlying assumption is that a high performance climate drives engagement, which, in its turn, leads to better business outcomes. Usually, this line of reasoning is illustrated by case studies (e.g. Alfes and Leogly, 2014) and only very few quantitative studies have been carried out. A notable example is the study of Dollard and Bakker (2010), who investigated the impact of psychological safety climate on work engagement in schools. Their results showed that psychological safety climate predicts levels of teacher engagement one-year later through the increase in job resources.

The current study takes a similar perspective but focusses on employee growth climate, which refers to organizational policies, practices, and procedures that encourage employee's personal and professional growth and development. This type of climate is associated with the presence and availability of job resources, which have been defined as those physical, social, or organizational aspects of the job that are not only instrumental for achieving work goals but also for stimulating personal growth and development (Demerouti *et al.*, 2001, p. 501). According to the job-demands

resources model, these job resources drive employee engagement, and indeed an impressive body of research documents the positive relationship – also across time – between job resources such as performance feedback, job control, social support, and learning- and career opportunities, and work engagement (for a review, see Schaufeli and Taris, 2014). Hence, organizational policies, practices, and procedures that encourage employee's personal and professional growth have a positive impact on employee engagement because they increase job resources. When employee growth is deemed important by the organization this translates, for instance, into feedback practices which promote learning; policies which stimulate employee's careers; and a supportive work environment which focusses on employee's strengths.

Based on these considerations two additional hypotheses are formulated:

*H3.* Workaholism is positively related to overwork climate.

*H4.* Work engagement is positively related to employee growth climate.

Please note that work engagement is not supposed to be related to overwork climate, and workaholism not to employee growth climate. The reason for the former is that engaged employees are intrinsically motivated, meaning that they are less sensitive to external pressures, such as a prevailing overwork climate (Van Beek *et al.*, 2012). The reason why workaholism is not associated with employee growth is that, contrary to engaged employees who have a promotion focus and seek to satisfy their need for growth and development, workaholics have a prevention focus, meaning that they are fearful of failure and seek to satisfy their need for security (Van Beek *et al.*, 2013). This implies that workaholics are sensitive to the pressure that results from an overwork climate and comply with it by working extra hard out of a fear for failure.

Although it is conceivable that personality and climate might have a joint effect on workaholism and work engagement, no specific interaction effects are hypothesized. The reason is that it can only be speculated about the nature of such interactions because there are neither compelling theoretical reasons, nor is there compelling empirical evidence in favor of specific interactions. Nevertheless, the presence of interactions will be explored by additional analyses.

## Method

### *Sample*

Participants in this study were working Dutch employees from a wide range of companies and occupations ( $n = 1,973$ ), who participated in an online survey. Table II compares the characteristics of the current sample with the Dutch workforce (Statistics Netherlands, 2013).

$\chi^2$  tests show that compared to the Dutch workforce, females, older workers, and highly educated employees are over-represented in the current sample.

### *Procedure*

During a period of six months a survey was published on the website of the largest Dutch popular psychology magazine. Visitors of its homepage were invited to learn more about their heavy work investment by filling out an online questionnaire. The confidentiality and anonymity of the data was emphasized. The data were automatically written to an external file and 87 persons (4 percent) were excluded from the analyses, because an examination of the time of questionnaire completion, gender, age, and the response pattern suggested that they had filled out the survey more than once.

**Table II.**  
Sample characteristics compared with the Dutch workforce

Sample characteristic	Current sample ( <i>n</i> = 1,973) (%)	Dutch workforce ( <i>n</i> = 7,863,000) (%)
<i>Gender<sup>a</sup></i>		
Men	20	55
Women	80	45
<i>Age<sup>b</sup></i>		
15-24	5	10
25-34	20	22
35-44	22	24
45-54	32	26
45-65	21	17
<i>Educational level<sup>c,d</sup></i>		
Low	4	29
Medium	21	42
High	75	29

**Notes:** <sup>a</sup> $\chi^2$  (1) = 975.12,  $p < 0.001$ . <sup>b</sup> $\chi^2$  (4) = 105.15,  $p < 0.001$ . <sup>c</sup> $\chi^2$  (2) = 2,072.01,  $p < 0.001$ . <sup>d</sup>Low = primary or lower vocational education; medium = high school or intermediate vocational education; high = higher vocational education (college) or university

**Source:** Statistics Netherlands (2013)

### Measures

Workaholism was measured using the Dutch Work Addiction Scale (Schaufeli *et al.* 2009) that includes two subscales: working excessively (e.g. "I seem to be in a hurry and racing against the clock") and working compulsively (e.g. "I feel that there's something inside me that drives me to work hard"). Both subscales consist of five items each and were rated on a four-point rating scale ranging from 1 (almost) never) to 4 (almost) always).

Work engagement was assessed with the nine-item short version of the UWES (Schaufeli *et al.*, 2006). An example item is: "at my job I feel strong and vigorous." All items were scored on a seven-point rating scale ranging from 0 (never) to 6 (always).

Overwork climate was assessed with a recently developed eight-item questionnaire (Mazetti *et al.*, 2016). An example item is: "in the organization where I work it is considered normal for employees to take their work home." All items were scored on a rating scale that ranged from 1 (strongly disagree) to 5 (strongly agree).

Employee growth climate was assessed using an eight-item, self-constructed questionnaire. This scale evaluates to what extent employees perceive that the organization for which they work encourages their growth and development, for instance, by fostering learning, taking responsibility, and coming up with new ideas and solutions. Example items are: "in the organization where I work it doesn't matter to make mistakes because it contributes to learning" and "in the organization where I work, employees are encouraged to come up with new ideas and solutions." All items were scored on a rating scale that ranged from 1 (strongly disagree) to 5 (strongly agree).

Because both climate scales were used simultaneously for the first time, a confirmative factor analysis was performed to investigate their factorial validity. As expected, a model that included both correlated latent climate factors showed a reasonable fit to the data, after the lowest loading item of each scale was removed:  $\chi^2$  ( $df = 76$ ) = 946.64,  $p < 0.001$ ; normed fit index (NFI) = 0.90; Tucker Lewis index (TLI) = 0.89, comparative fit index (CFI) = 0.90; root mean square error of

approximation (RMSEA) = 0.08. Factor loadings of the overwork climate and employee growth climate scales ranged between 0.41 and 0.76, and 0.57 and 0.72, respectively. Hence their factorial validity was confirmed.

Personality factors were assessed using Mowen's (2000) Personality scale that consists of five subscales representing the Big Five personality traits: openness to experience (e.g. "imaginative"); conscientiousness (e.g. "orderly"); extraversion (e.g. "shy" – scale reversed); agreeableness (e.g. "kind to others"); and neuroticism (e.g. "moody more than others"). Each trait was measured with three items that were scored on a rating scale that ranged from 1 (never) to 7 (always). The brief personality scale has been successfully used, particularly in marketing and consumer research (Mowen *et al.*, 2007) and personnel selection (Harris and Lee, 2004).

## Results

As can be seen from Table III,  $\alpha$ -coefficients of all scales exceed the value of 0.70, which is generally considered to reflect sufficient internal consistency.

Moreover and as expected, both workaholism scales correlate highly positive ( $r = 0.63$ ), whereas both organizational climate scales are weakly and negatively correlated ( $r = -0.15$ ).

Structural equation modeling methods as implemented in AMOS 21.0 (Arbuckle, 2012) were used to test the research model. This model assumes that all Big Five factors are related to workaholism and work engagement and that workaholism is related to overwork climate, whereas work engagement is related to employee growth climate. Finally, the model also assumes that absorption not only loads on work engagement, but also on workaholism. This follows from previous confirmative factor analytic studies (e.g. Schaufeli *et al.*, 2008b; Del Libano *et al.*, 2012) and is consistent with the idea that workaholics are fully immersed in their work and are reluctant to disengage from it (McMillan *et al.*, 2004).

The tested models include latent variables of work engagement and workaholism, which are indicated by their sub-dimensions: vigor, dedication, and absorption for work engagement, and compulsive and excessive working for workaholism, respectively. In addition scale scores of both climates and of the five personality factors were included as manifest variables. Maximum likelihood estimation was employed and the goodness-of-fit of the tested models was evaluated using the  $\chi^2$ -test statistic, the NFI, the TLI, the CFI, and the RMSEA. Values larger than 0.90 for NFI, TLI, and CFI, and 0.08 or lower for RMSEA indicate acceptable model fit (Byrne, 2009). For RMSEA, values greater than 0.10 should lead to model rejection.

The fit to the data of the original research model, that explained 29 percent of the variance in workaholism and 37 percent in work engagement, was not very good,  $\chi^2$  (df = 37) = 632.00,  $p < 0.001$ ; NFI = 0.91; TLI = 0.85, CFI = 0.91; RMSEA = 0.09, with only NFI and CFI meeting their criterion. It appeared that the path-coefficients connecting conscientiousness and openness with workaholism were not significant (0.02 and 0.04, respectively). Also three correlations between errors of the Big Five factors were non-significant; that is, between conscientiousness and extraversion (0.01), openness and conscientiousness (0.05), and extraversion and agreeableness (0.04). Initially, only correlations were allowed between both climates and among the five personality variables, but not between the climate and personality variables because these were assumed to represent two distinct types of concepts. However, inspection of the so-called modification indices revealed that allowing the errors of growth climate and openness to experience to correlate would increase the fit of the model. After re-specifying the model



**Table III.**  
Means (*M*), standard deviations (*SD*), inter-correlations, and internal consistencies (Cronbach's  $\alpha$  on the diagonal) of the study variables

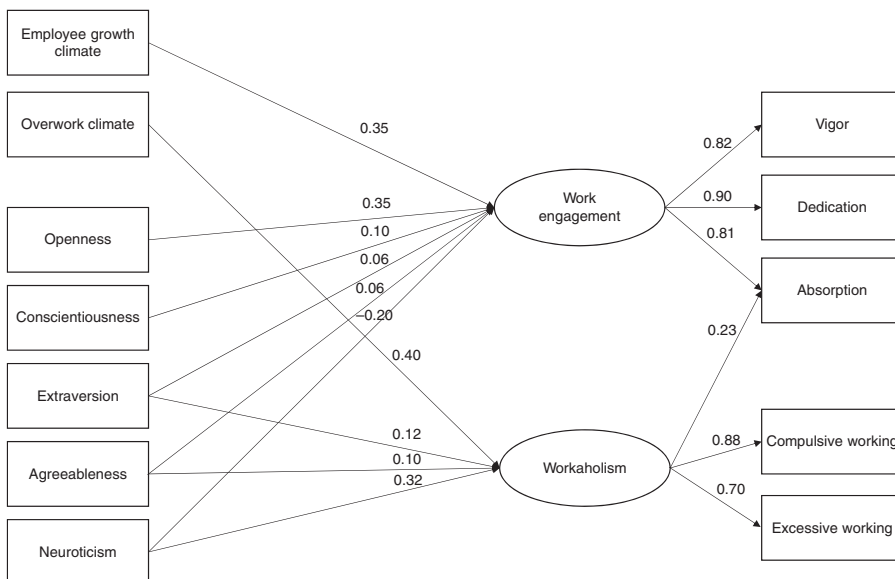
Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Workaholism-EW	2.86	0.79	0.87									
2. Workaholism-CW	2.48	0.88	0.63	0.83								
3. Work engagement	3.14	0.79	0.13	-0.10	0.91							
4. Overwork climate	2.71	0.78	0.39	0.36	-0.05	0.83						
5. Growth climate	3.22	0.65	-0.02	-0.13	0.42	-0.15	0.80					
6. Openness	4.23	1.18	0.15	-0.04	0.45	0.06	0.25	0.89				
7. Conscientiousness	4.83	1.18	-0.06	-0.01	0.16	-0.07	0.10	0.05	0.87			
8. Extraversion	4.94	1.09	0.04	0.21	0.18	-0.05	0.11	0.20	-0.01	0.83		
9. Agreeableness	5.12	0.91	0.01	0.03	0.18	0.00	0.08	0.13	0.18	-0.05	0.78	
10. Neuroticism	2.72	1.03	0.21	0.33	-0.29	0.13	-0.16	-0.13	-0.13	-0.20	-0.23	0.81

**Notes:**  $n = 1,973$ .  $r \leq 0.04$ , ns;  $0.04 < r < 0.06$ ,  $p < 0.05$ ;  $0.06 \leq r < 0.08$ ,  $p < 0.01$ ;  $r \geq 0.08$ ,  $p < 0.001$

accordingly (i.e. deleting the non-significant paths and adding the correlation between the errors of growth climate and openness) it did fit relatively well to the data:  $\chi^2$  (df = 41) = 549.77,  $p < 0.001$ ; NFI = 92; TLI = 0.88, CFI = 0.93; RMSEA = 0.08, with all indices – except TLI – satisfying their criterion. Re-specification did not change the size of the paths running from climate and personality to work engagement and workaholism (i.e. all differences were less than 0.01). The re-specified model is shown in Figure 1; for reasons of economy, correlations between errors of climate and personality factors are not displayed.

As far as personality traits are concerned, particularly neuroticism is related to workaholism, while predominantly openness to experience and neuroticism are related to work engagement. This means that *H1* – neuroticism is related to workaholism – is confirmed. However, also extraversion and agreeableness are related to workaholism – albeit more weakly. Likewise *H2* – neuroticism, extraversion, conscientiousness, agreeableness, and openness are related to work engagement – is conformed. Finally, and as expected, a double loading of absorption on work engagement as well as workaholism was observed. After re-specification, the model explained 29 percent of the variance of workaholism and 40 percent of the variance of work engagement.

Next an alternative model was tested that also included paths from employee growth and overwork climate to workaholism and work engagement, respectively ( $\chi^2$  (df = 39) = 548.23,  $p < 0.001$ ; NFI = 92; TLI = 0.87, CFI = 0.93; RMSEA = 0.08). This alternative model that explained similar amounts of variance in work engagement and workaholism as the re-specified model, did not fit significantly better than the original model ( $\Delta\chi^2 = 1.54$ ; df = 2; ns). Besides, the additional paths were non-significant with path-coefficients of 0.01 and 0.02 for the paths running from growth climate to workaholism and from overwork climate to work engagement, respectively. Therefore, it is concluded that – as hypothesized – overwork climate is exclusively related to workaholism but not to work engagement, whereas conversely growth



**Figure 1.**  
Structural equation  
results for the  
re-specified model

climate is exclusively related to work engagement but not to workaholism. Hence, *H3* and *H4* are confirmed. Figure 1 shows that overwork culture is about equally strongly related to workaholism as growth culture to work engagement.

Finally, ten interaction terms were added to the model; five interaction terms of overwork climate with each of the Big Five personality traits that were related to workaholism, plus five interaction terms of growth climate with personality traits that were related to engagement. The fit of this model was rather poor ( $\chi^2$  (df = 195) = 2,085.85,  $p < 0.001$ ; NFI = 0.75; TLI = 0.73, CFI = 0.77; RMSEA = 0.07) and none of the interaction terms appeared to have a significant effect on workaholism or work engagement. Hence, psychological climate and personality have independent and not combined effects on workaholism and work engagement.

### Discussion

The current study set out to investigate the relative contribution of work environment (i.e. psychological climate) and personality (i.e. Big Five personality traits) in explaining two forms of heavy work investment (i.e. workaholism and work engagement). More specifically, it was expected and found that: an overwork climate that expects employees to work beyond scheduled hours, engage in unpaid overwork, and take work home, is exclusively related to workaholism – a “bad” form of heavy work investment; an employee growth climate that emphasizes employee’s growth and development by fostering learning, encouraging them to take responsibility, and stimulating their creativity, is exclusively related to work engagement – a “good” form of heavy work investment. Tellingly, the positive impact of both climate measures on both forms of heavy work investment was about equally strong. Furthermore, organizational climate is related to heavy work investment, irrespective of employee’s personality characteristics.

The current study confirms that workaholism is positively related to neuroticism, which is characterized by emotional instability, stress-proneness, insecurity, and depression. This finding underscores the interpretation of workaholism as a negative psychological state (Taris *et al.*, 2015). It is noteworthy that the observed strength of the relationship between neuroticism and workaholism is similar in magnitude as in other studies – about 0.30 (e.g. Burke *et al.*, 2006). In addition, workaholism was positively associated with extraversion, suggesting that workaholics are extraverted (i.e. sociable, dominant, ambitious, and assertive). This agrees not only with early descriptions of workaholics (e.g. Oates, 1971) but also with a recent meta-analysis that showed that extraversion was the only factor of the Big Five which was significantly and positively related to workaholism (Clark *et al.*, in press). Moreover and unexpectedly the present study found a positive relationship between workaholism and agreeableness – being caring and likeable. This is rather puzzling since it is at odds with the image of the hard driven, competitive, achievement-oriented workaholic with an atrophied social network (Robinson, 2007). Yet agreeableness is also related to norm compliance, meaning that highly agreeable people like to follow along with social norms (Costa *et al.*, 1991). This agrees with research on motivational regulation that found that workaholism is particularly related to introjected regulation (Van Beek *et al.*, 2012), which means that workaholics have internalized external standards of social approval. Hence it can be speculated that agreeable persons are more prone to workaholism because their self-worth depends to a large extent on the social approval they receive.

It also appeared from the current study that work engagement is significantly related with all Big Five personality factors; as predicted, work engagement was negatively related with neuroticism and positively with openness, conscientiousness,

extraversion, and agreeableness. However, the strengths of these associations differ somewhat from the correlations of others studies. Compared with the (sample-weighted) correlations in Table I, the observed correlations with engagement are higher for openness and lower for conscientiousness and extraversion. It can only be speculated why this is the case. For instance, extraversion was assessed with a reversed introversion scale that might not be a proper operationalization for (lack of) extraversion because it does not include items that refer to energy, which is the hallmark of work engagement.

The strongest unique contributions to work engagement were observed for neuroticism (negative) and openness to experience (positive). The former illustrates that work engagement can be considered a “good” form of heavy work investment, whereas the latter might offer a dispositional explanation for the finding that work engagement is associated with a promotion focus (Van Beek *et al.*, 2013), which prompts engaged employees to look for opportunities for growth. Perhaps they do so because they have a disposition to be open to experiences. This is illustrated by an experimental study of Vaughn *et al.* (2008), who found that people higher in openness were more motivated to pursue promotion-related goals.

No significant interaction effects of organizational climate and personality have been observed on heavy work investment. So far, no other studies exist on the joint impact of organizational climate and personality on heavy work investment, except Mazetti *et al.* (2014). They found that overwork climate had a positive impact on workaholism, but only among those employees who scored high on conscientiousness. This interaction effect was not corroborated in the current study. A possible reason might be that Mazetti and colleagues excluded employees who scored high on work engagement because they were interested in “pure” workaholics. The group that scores high on workaholism and work engagement is also likely to score high on conscientiousness and by excluding this specific group, levels of conscientiousness may have dropped so that an interaction effect is less likely to occur. Generally speaking, the fact that no significant interaction effects have been observed illustrates that rather than being interrelated, situational, and dispositional antecedents of heavy work investment seem to have an independent impact.

In accordance with previous studies (e.g. Schaufeli *et al.*, 2008b; Del Libano *et al.*, 2012), the current study also revealed that absorption loads on the latent work engagement as well as on the latent workaholism factor. Tellingly the former factor loading is more than three times as strong as the latter. This cross-loading also agrees with the meta-analysis of Clark *et al.* (in press), which showed that absorption was the only work engagement dimension that was significantly associated with workaholism. It can be reasoned that the underlying motivation for being absorbed might differ; while engaged workers are absorbed in their work because for them it is fun, workaholics feel driven to work – their absorption is a matter of compulsion, not of enjoyment. This agrees with the finding that engaged workers are intrinsically motivated and hence pulled toward work, whereas workaholics are externally motivated and hence pushed to work (Van Beek *et al.*, 2012).

#### *Limitations and suggestions for further research*

The present study has some limitations that should be acknowledged as well. The first limitation concerns the use of self-constructed scale, so that common method variance may have influenced the results. Future research could adopt a multi-method approach by combining data from more than one source in order to obtain more robust evidence.

Although all study variables are subjective in nature self-reports can be supplemented by peer ratings. For instance, Mazetti *et al.* (in press) successfully used ratings of co-workers to assess workaholism.

Second, a cross-sectional design was used which precludes any conclusions about causality. The current study argues that organizational climate impacts on employee's heavy work investment. However, based on Schneider's (1987) Attraction-selection-attrition hypothesis, it can also be argued that people look for employment at organizations that match their own values and preferences. Following this logic, workaholics are likely to select organizations with an overwork climate, whereas engaged employee might opt for organizations with an employee growth climate. Evidently this assumes that non-members are familiar with the prevailing climate of an organization, which is not always likely. Nevertheless, reversed causation cannot be ruled out so that future longitudinal research is needed to unravel the causal direction among organizational climate, personality, and heavy work investment.

Third, in order to increase model fit, a correlation was allowed between employee growth climate and openness to experience. Although it is not recommended to allow errors to correlate in order to improve model fit, this is considered to be legitimate when it can be defended on conceptual grounds (Byrne, 2009), as in the current case. It makes sense that openness to experience and employee growth climate share some common variance because, by definition, employees high in openness will look for possibilities in their work environments to grow and develop themselves. It is likely that their preference for novelty, variety, and complexity will be particularly satisfied in an organizational climate that endorses employee growth and development.

Third, in fact, the current study assessed introversion, whereas most previous studies on personality and heavy work investment tapped extraversion. Introversion and extraversion are typically viewed as a single continuum, meaning that those who score high introversion would score low on extraversion, and vice versa (Eysenck, 2013). For that reason, the introversion scale was reversed and term extraversion has been used throughout this paper. Nevertheless, it is recommended to use in future research a personality measure questionnaire that either taps extraversion (e.g. Golsing *et al.*, 2003) or covers both ends of the continuum (e.g. Saucier, 1994).

Finally, self-selection may have biased the study findings as online surveys have been criticized because of poor representativeness (Couper *et al.*, 2007). Indeed, compared with the Dutch working population, females, higher educated, and older employees are over-represented in the current sample. With the exception of older age this pattern is recurrently observed in online surveys (e.g. Bandilla *et al.*, 2003). That somewhat older rather than younger employees participated in the study might be due to the fact that middle-aged persons represent the target readership of the psychological magazine that issued the survey. Hence, the nature of the current sample requires that the results should be replicated in lower educated, younger, and male samples.

### *Practical implications*

In order to foster work engagement and to prevent workaholism organizations are well advised to endorse a climate that fosters employee growth and discourages overwork. The current study suggests that this is important, independent of the employee's personalities. It seems that the pursuit of lean management might be a good way forward (Sparrow, 2014). At the heart of lean management – a high performance management practice, which is dedicated to minimizing waste – lays an organizational

climate that focusses on employee learning and development. Provided that a number of conditions are met such as high levels of skill utilization, autonomy, a supportive social climate, and participation in decision making, lean manufacturing is associated with employee engagement (Cullinane *et al.*, 2012). So it seems that lean management combines the best of both worlds: a high performance, yet resourceful employee growth climate, which is likely to be associated with “good” heavy work investment.

It appears that neuroticism plays a key role because it is relatively strongly – albeit inversely – related with both types of heavy work investment, irrespective of organizational climate. Although it is basically possible for organizations to select employees who are low in neuroticism, this is not recommended. The reason is that hat applicant’s responses to personality inventories are not veridical self-reports, but rather are self-presentations (Hogan, 1991). An alternative strategy is to decrease levels of neuroticism among employees. It seems that, despite its dispositional nature, neuroticism can indeed be reduced, particularly by means of rational-emotive training programs (Jorm, 1989). Finally, supervisors could not only encourage less emotionally stable employees to participate in such training programs but they also could to take into account their impaired stress-resistance, for instance when allocating work tasks, providing feedback, and setting performance goals (Mone and London, 2010).

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