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Published in:
International Journal of Law and Psychiatry

DOI:
[10.1016/j.ijlp.2023.101902](https://doi.org/10.1016/j.ijlp.2023.101902)

Publication date:
2023

Document Version
Publisher's PDF, also known as Version of record

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):

Hagen, T., De Caluwé, E., & Bogaerts, S. (2023). Personality moderators of the cross-sectional relationship between job demands and both burnout and work engagement in judges: The boosting effects of conscientiousness and introversion. *International Journal of Law and Psychiatry*, 89, Article 101902. <https://doi.org/10.1016/j.ijlp.2023.101902>

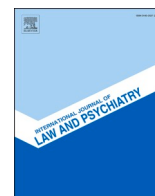
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Personality moderators of the cross-sectional relationship between job demands and both burnout and work engagement in judges: The boosting effects of conscientiousness and introversion

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ARTICLE INFO

Keywords:

Moderation effects
Big Five personality factors
Job characteristics
Burnout
Work engagement
Judges

ABSTRACT

The central question of this study is whether buffering, boosting and exacerbating effects of the Big Five personality factors extraversion, openness to experience, agreeableness, conscientiousness and neuroticism can be demonstrated in the relationship between two job demands (i.e., work pressure and working overtime) and both burnout and work engagement in 257 Dutch judges. It is important to better understand the interaction effects between various job demands (work pressure and working overtime) and personality on both burnout and work engagement in judges given their increased risk of burnout and lower work engagement due to cognitively and their emotionally demanding work. Three hypotheses were tested in a cross-sectional design study. Moderation analyses showed that, as expected, conscientiousness significantly boosted the relationship between working overtime and work engagement. Hence, high scorers on conscientiousness showed more work engagement when working overtime. Also, extraversion moderated the relation between working overtime and work engagement, but only at a low level of extraversion. Thus, contrary to expectations, introverts showed more work engagement when they work overtime. Also, significant main effects were found. Work pressure and neuroticism related positively to burnout, while extraversion and agreeableness related negatively to burnout. Moreover, extraversion, agreeableness and conscientiousness related positively to work engagement. In our study, conscientiousness, extraversion and agreeableness can be considered as personal resources for judges, in line with the Conservation of Resources (COR) theory. Especially conscientiousness can facilitate judges to cope with challenging working circumstances and introversion ensures that judges stay engaged despite working overtime.

1. Introduction

Over the past three decades, much research has been done on burnout, work engagement and personality among various professional groups, such as nurses (Contreras et al., 2020; Moloney et al., 2017). However, little research has been done among judges for which several reasons can be mentioned. Judges often have busy schedules and little time to participate in research. Judges are harder to reach compared to other professionals and it is often said that judges operate in an ivory tower far from the real world (Van den Brink, 2008). Furthermore, judges handle sensitive cases and must be able to make objective and independent decisions that often have far reaching consequences and therefore, influence from others must be avoided. All this can make them reluctant to participate in scientific research. As a result, little is known about burnout and work engagement and whether personality traits can

moderate the relationship between specific job demands experienced by judges and both burnout and work engagement.

In general, it is well-known that the personality factor neuroticism increases the risk for burnout (Kim et al., 2009; Langelaan et al., 2006) whereas extraversion and conscientiousness relate positively to work engagement (Ansari, 2020; Mostert & Rothmann, 2006). Regarding the personality factor conscientiousness, people high on conscientiousness are able to set priorities, and can plan tasks, they have a need for achievement, and severance; traits which might protect them against burnout (Van der Zee, 2007). Personality may thus have an influence on the perception of occupational stressors, which may have consequences for handling those stressors (Feng et al., 2014). Based on this, for judges, it is for example not advisable to have high scores on neuroticism.

Judges can thus be at risk for burnout and lower work engagement because their work is both cognitively and emotionally demanding.

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<https://doi.org/10.1016/j.ijlp.2023.101902>

Received 13 June 2022; Received in revised form 17 May 2023; Accepted 26 May 2023

Available online 14 June 2023

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Judges often must make difficult decisions and often face emotionally complex matters. Moreover, they often work in a high-pressure environment with strict deadlines, often working overtime. One reason for working overtime is that there is a shortage of judges in the Netherlands. A problem in courtroom may be that an overworked judge cannot listen sufficiently to the parties. All of these arguments point to the importance of research among judges to better understand the interaction between various job demands (work pressure and working overtime), work engagement, burnout, and personality in judges. More generally, studies have suggested that high levels of work engagement may contribute to a lower risk of burnout. However, knowledge about the influence of personality traits on the relationship between job demands and both burnout and work engagement in judges is virtually non-existent. Therefore, we investigated this in a cross-sectional design among 257 Dutch judges from four courts: two large courts (in more and less densely populated areas) and two smaller courts (in more and less densely populated areas).

1.1. Moderating effects of the Big Five personality factors on the relationship between job demands and both burnout and work engagement

There is significant evidence that personality traits may exert moderating effects on the relationship between job characteristics and both burnout and work engagement (Bakker et al., 2007; Xanthopoulou et al., 2013; Xanthopoulou et al., 2007) in which personality traits alter the effect of, for instance, job characteristics on burnout (Evers, 2007). Most research has been conducted on specific and narrowly formulated personality traits (e.g., optimism and self-efficacy), whereas only little research has been done on the more broadly formulated Big Five personality factors as moderators.

In this study, two assumptions of the Job Demands-Resources (JD-R) model were investigated regarding buffering and boosting effects (Bakker et al., 1999; Demerouti et al., 2001; see also Hagen & Bogaerts, 2014). This model proposes that job characteristics can be divided into job demands and job resources, which are the antecedents of burnout and work engagement, respectively. Only a few studies have investigated the buffering and boosting effects of personality traits in relationships between job demands and exhaustion and work engagement, respectively (e.g., Mäkikangas & Kinnunen, 2003; Xanthopoulou et al., 2013; Xanthopoulou et al., 2007).

1.2. Moderation: buffering, boosting, and exacerbating effects of personality factors

We separately investigated 1) the buffering effect on the relationship between job demands and burnout, and 2) the boosting effect on the relationship between job demands and work engagement of the four moderators, extraversion, openness, agreeableness, and conscientiousness. We also investigated 3) the exacerbating effect of neuroticism on the relationship between job demands and burnout. We use the Conservation of Resources (COR) theory (Hobfoll & Shirom, 1993), which states that the positive, stimulating effect of job and personal resources can contribute to successfully controlling and influencing the environment (see Xanthopoulou et al., 2013).

This study is important because of the demands placed on judges while courts are facing a shortage of judges. However, in the context of preserving the rule of law, judges must be well equipped to function optimally. Because little research has been done on personality factors in judges in relation to burnout and work engagement, we investigate the influence of the Big Five personality factors on the relationships between job demands (work pressure and working overtime) and burnout, and between the same job demands and work engagement. It is known that job demands are directly related to burnout and work engagement (Crawford et al., 2010). What we do not know is whether the personality factors have a moderating influence, and more specifically whether they have a buffering, boosting, or exacerbating effect on these relationships.

The first assumption of the JD-R model concerns the buffering effect that relates to the moderating effect of high job resources that reduce or buffer the negative/harmful effects of high job demands on burnout (Bakker et al., 2005; Bakker & Demerouti, 2007; De Jonge et al., 2007; Xanthopoulou, Bakker, Dollard, et al., 2007). Indeed, the risk of burnout is greatest in work environments where job demands are high and job resources low (see Demerouti et al., 2001; Xanthopoulou, Bakker, Dollard, et al., 2007). According to the COR theory, high personal resources may be effective in coping with threatening situations (Hobfoll & Shirom, 1993). High personal resources can therefore buffer the likelihood of burnout. We expect a buffering effect of extraversion, openness, agreeableness, and conscientiousness on the harmful effects of high job demands on burnout (see Chen et al., 2015; Vogel et al., 2019). Specifically, conscientiousness can be expected to buffer the relationships between the job demands and burnout. That means that conscientiousness may mitigate the positive relationship between high job demands and high risk for burnout, so that judges who are experiencing high job demands but are also high on conscientiousness, are less at risk for burnout.

The second assumption of the JD-R model concerns the boosting effect; people can take full advantage of high job resources when a work situation requires high job demands. High job resources are particularly effective when job demands are high because they can function as coping skills and thus stimulate work engagement (Bakker & Demerouti, 2007; Bakker et al., 2007; see also De Jonge et al., 2007). However, there is no conclusive empirical evidence for the boosting hypothesis. Xanthopoulou et al. (2013) found only partial confirmation for the boosting effect, as self-efficacy was a moderator, while optimism was not. We expect that these four Big Five personality factors (as mentioned in the previous paragraph) would boost the relationships between the job demands and work engagement among judges. Judges may be stimulated by the positive influence of the personality factors to handle the job demands, which can act as a challenge, and eventually lead to work engagement and performing well.

A third effect to be investigated concerns the exacerbating effect of neuroticism on the relationship between job demands and burnout. The term exacerbating is used for the moderating effect of a stress inducing personality factor on the relationship between job demands and burnout (i.e., exacerbating of a negative/harmful effect, whereas the boosting effect above refers to strengthening of a positive/beneficial effect). Several studies have shown that an increase in job demands is predictive of future burnout, especially at low values of job resources (Schaufeli et al., 2009). According to the COR theory, it can be assumed that people with high neuroticism have fewer personal resources, cope less adequately with stressful environments than people with lower neuroticism and have less control (Van der Zee, 2007). Therefore, we expect that neuroticism may increase the harmful effects of high job demands on burnout. Data showed that judges have a low absenteeism due to illness (Council for the Judiciary [Raad voor de rechtspraak], 2014). We can deduct from this that judges generally do not suffer from a long-lasting burnout. Furthermore, we can assume that the exacerbating effect of neuroticism should be low and so should the level of neuroticism.

1.3. The current study

The aim of this study is to gain insights into the moderating effect of the discussed Big Five personality factors on the relationships between prevailing job demands (work pressure and working overtime) and both burnout and work engagement. This knowledge can increase our theoretical and practical insights into the performance of judges in a complex work environment.

The following hypotheses will be tested:

Hypothesis 1. Extraversion (1a), openness (1b), agreeableness (1c), and conscientiousness (1d) buffer the harmful effect of high job

demands (work pressure and working overtime) on burnout (buffering effect; reducing a harmful effect).

Hypothesis 2. Extraversion (2a), openness (2b), agreeableness (2c), and conscientiousness (2d) boost the stimulating effect of high job demands (work pressure and working overtime) on work engagement (boosting effect; increasing a beneficial effect).

Hypothesis 3. Neuroticism exacerbates the harmful effect of high job demands (work pressure and working overtime) on burnout (exacerbating effect; increasing a harmful effect).

2. Method

2.1. Participants and procedure

Judges from four courts participated in this study: two large courts (79 and 86 participating judges, respectively) in more and less densely populated areas and two smaller courts (with 51 and 41 participating judges, respectively) also in more and less densely populated areas. They were active in the following fields of law: criminal law, civil law, family law, administrative law, and the sub-district sector. This study followed the Declaration of Helsinki principles and was approved by the board of the Council for the Judiciary in the Netherlands. The judges were informed by emails in advance about the goal of the study and were assured that participation is confidential, and that the reporting of the results would never be traceable to the individual and that they could withdraw from the enquiry at any time. The explained goal of the study was to investigate work pressure with various possible related factors. The survey was sent by email and was completed anonymously. All participants gave informed consent. Anonymity was guaranteed by coding the data in the program Qualtrics, we did not receive ID-numbers, and there was no open access to the data. The participants received no reward. In 2012–2013, the online questionnaires were sent to all 612 judges of the four courts, of which 257 judges completed them (42% response rate; 165 females [64%], 92 males [36%]; mean age 51 years, ranging from 34 to 67 years, $SD = 7.90$). The choice of the four courts was made in consultation with the Council for the Judiciary that also provided the e-mail addresses of the judges.

2.2. Instruments

2.2.1. The Big Five personality factors

The NEO-FFI (NEO-Five Factor Inventory; Costa & McCrae, 1992) measures personality. We used the abbreviated Dutch version (NEO-FFI Persoonlijkheidsvragenlijst) of this instrument that exists of 60 items (see Hoekstra et al., 1996). It includes the Big Five personality factors, which are measured with five 12-item scales. These scales are: neuroticism (e.g., “I often feel inferior to others”), extraversion (e.g., “I like to have a lot of people around me”), openness to experience (e.g., “I am intrigued by the patterns I find in art and nature”), agreeableness (e.g., “I try to be courteous to everyone I meet”), and conscientiousness (e.g., “I keep my belongings neat and clean”). All answers were given on a 5-point Likert scale (1 = strongly agree to 5 = strongly disagree).

2.2.2. Work pressure

The variable work pressure was measured with a Dutch questionnaire (VBBA, Vragenlijst betreffende beleving en beoordeling van de arbeid [QEEW, Questionnaire concerning Experience and Evaluation of Work]) developed by Van Veldhoven and Meijman (1994). The questionnaire consists of 27 scales and 42 additional questions. We use the work pressure scale (measuring work pace and work quantity). This scale consists of 11 items. In our study, we used six of these items (what is allowed by the manual). The items about working too slowly and backlogs were not included in this study. Answers were given on 4-point scales (0 = never to 3 = always). The scale score was calculated by dividing the total sum score of the items by “3 multiplied by the number

of items”. This score was then multiplied by 100. An example item is: “Do you have to work very fast?”. The internal consistency for the work pressure scale showed a Cronbach’s α of 0.89, indicating good reliability, and the factorial validity was also good (Van Veldhoven et al., 2002).

2.2.3. Working overtime

Working overtime was operationalized by questioning the frequency of working overtime in the past year. The item is: “How often, you assume that you have worked overtime last year?” This response was scored on a 7-point Likert scale (0 = never to 6 = everyday). Cronbach’s α could not be calculated because working overtime was assessed by one item.

2.2.4. Burnout

The Utrecht Burnout Scale (UBOS; Schaufeli & Van Dierendonck, 2000), the Dutch version of the Maslach Burnout Inventory-General Survey (MBI-GS; Schaufeli et al., 1996) was used to measure burnout (including 15 items). The instrument consists of three subscales, namely exhaustion including five items (e.g., “I feel emotionally drained from my work”), cynicism consisting of four items (e.g., “I am more cynical about the contribution of my work”) and professional efficacy consisting of six items (e.g., “I feel that I make an effective contribution to my work”). The latter answers were scored inversely (see Hagen, Bogaerts, & De Caluwé, 2023). All items were scored on a 7-point Likert scale (0 = never to 6 = every day). The test-retest correlation coefficients of the subscales were good, after one year they ranged from 0.57 to 0.60 (Schaufeli & Van Dierendonck, 2000; see also Leiter & Schaufeli, 1996). The factorial validity was sufficient (Bakker et al., 2002; Taris et al., 1999) as was the construct validity (Taris et al., 1999). A reliability of the total burnout score was not given in the manual. We use the total (mean) score and not the subscales.

2.2.5. Work engagement

Work engagement was assessed by the Dutch version of the Utrecht Work Engagement Scale (UWES-17; Schaufeli & Bakker, 2003), including 17 items. The subscale vigor includes six items (e.g., “At my job, I feel strong and vigorous”), the subscale dedication consists of five items (e.g., “I find the work that I do full of meaning and purpose”) and the subscale absorption counts six items (e.g., “I feel happy when I am working intensely”). Answers were scored on a 7-point Likert scale (0 = never to 6 = every day). The factorial validity and reliability of the UWES-17 showed good results, Cronbach’s α was 0.93 (e.g., Schaufeli et al., 2002; Schaufeli et al., 2006). We use the total (mean) score and not the subscales.

2.3. Analyses

There was only a small number of missing data, the total number of items in the survey was 99. One item was missing seven answers, two items had six missings, three items counted five missings, 12 items were missing four answers, 14 items were missing three answers, 15 items were missing two answers, 35 items were missing one answer and 17 items had no missing values. Comparison of means and covariances of all variables using Little’s MCAR (missing completely at random) test (Little, 1988) yielded a normalized χ^2 (χ^2/df) of 1.03, $p = 0.02$. Although the p -value was less than 0.05, the normalized χ^2 was less than 3, indicating that the data was probably missing completely randomly (Bollen, 1989). Therefore, missing values were replaced by the series mean, using the method “Replace Missing Values” of SPSS 23.0 (see Dong & Peng, 2013; see Downey & King, 1998; IBM corporation, 2014).

The internal consistencies (Cronbach’s α), descriptives and intercorrelations were calculated using SPSS 23.0. The descriptives were obtained by descriptive statistics. The differences between the means of our sample and those of the norms were compared by a One-Sample T -Test. Pearson’s correlation coefficients were obtained by using bivariate

correlations in SPSS. The reliability analysis was used for calculating the Cronbach's α . Our hypotheses were tested with moderation analyses, using the PROCESS macro for SPSS (Model 1) developed by Hayes (2013). Effect sizes were calculated by filling in the observed R^2 in the calculator developed by Soper (2023). The job demands (work pressure and working overtime, separately) were used as independent variables, burnout and work engagement as dependent variables, and the five personality factors as moderators. The data were centered by the PROCESS macro. This macro does not test the product terms hierarchically, but simultaneously together with the main effects. For investigating the moderating effects of each of the Big Five personality factors, the conditional effect of the independent variable on the dependent variable at specific values of the moderator was tested (by default, at 16th, 50th, and 84th percentiles). The interaction effects were investigated separately for each personality factor in the buffering, boosting and exacerbating analyses. After the analyses, the interaction effects were first inspected. If significant, simple slope analyses were performed to allow interpretation of the interaction effects; and main effects were no longer interpreted. If the interaction effects were not significant, only the main effects were interpreted.

3. Results

3.1. Preliminary analyses

Table 1 shows the descriptive statistics with means, standard deviations, and the possible range of scores. Furthermore, almost all internal consistencies (Cronbach's alpha) met the criterion of at least 0.70 (Nunnally & Bernstein, 1994). Skewness and kurtosis met the criterion of values between -2 and $+2$ for testing normality (Field, 2006), except for the kurtosis of conscientiousness with a value of 5.78 referring to a more peaked distribution.

Within the four courts, 257 judges of the 612 judges have completed the survey. At a 95% confidence level and a 5% margin of error, the number of respondents in our study must be at least 236. This is sufficient. However, assuming a total population of 2403 judges in the Netherlands, the number of judges in our study should be at least 332. With 257 judges in the sample, this might not be sufficient, but we believe there is a certain degree of representativeness since the group of judges is very homogeneous. The results from the Levene's test showed a homogeneity for the group of judges regarding all variables. Further, we have included the above mentioned four different kinds of courts. Finally, when we compare our data with the data of the investigated population by the Council for the Judiciary [Raad voor de rechtspraak] (2014), the distribution of the samples showed strong similarities, such as regarding the male/female ratio and the percentages of different age categories.

Table 1 also shows that the means of extraversion, openness, agreeableness and conscientiousness were significantly higher than the

norm. The mean of neuroticism was significantly lower than the norm. The means of work pressure and work engagement were significantly higher than the norm.

Table 2 shows the intercorrelations. Neuroticism is positively correlated with burnout and negatively with extraversion, agreeableness, conscientiousness, and work engagement. The three personality factors extraversion, agreeableness, and conscientiousness correlated positively with each other and were all positively correlated with work engagement.

The personality factor openness was not significantly related to any of the other variables. Work pressure and working overtime were significantly positively related to each other and work pressure was positively related to burnout.

Table 3 shows that the correlations of the sample and norm group differed to a greater or lesser extent. The correlations between neuroticism and agreeableness and conscientiousness, between extraversion and agreeableness and conscientiousness, between openness and agreeableness, and between agreeableness and conscientiousness, were significant.

3.2. Main analyses

We present the interaction effects in order of the three hypotheses, every time split out for the two independent variables: work pressure and working overtime (see Table 4). Although our primary focus is on the interaction effects, we will also report statistically significant main effects (if interaction effects turn out to be non-significant) to provide a transparent and complete description of our results. There was no multicollinearity in the regression models, which means that none of the VIF (Variance Inflation Factor) values for the independent variables, was greater than 5 (slightly above 1). A statistical G*power analysis (Faul et al., 2007) showed that the projected sample size for a medium effect size (0.15) in moderation analysis should be $N = 119$ ($\alpha = 0.05$, $G^*power = 0.95$). This is sufficient for the sample in this study.

3.2.1. H1: work pressure – burnout, moderated by four personality factors

For H1, a total of eight models was run (i.e., models 1–4 with work pressure, and models 6–9 with working overtime, see next paragraph). Concerning work pressure (models 1–4), none of the moderating effects were significant. Therefore, Hypothesis 1 about the buffering effect of the four personality factors on the relationship between work pressure and burnout is rejected. However, there were significant main effects: work pressure was positively related to burnout in all models, with medium effect sizes. In addition, extraversion and agreeableness were negatively related to burnout, both with a small effect size.

3.2.2. H1: working overtime – burnout, moderated by four personality factors

In the models, including working overtime (models 6–9), the overall

Table 1
Means (M), standard deviations (SD), range, and Cronbach's α .

Variable	M	SD	Range	Norm	P	Cronbach's α
1 Neuroticism	1.86	0.64	1–5	2.59	0.000	0.88
2 Extraversion	3.51	0.48	1–5	3.34	0.000	0.74
3 Openness	3.16	0.50	1–5	2.99	0.000	0.66
4 Agreeableness	4.02	0.43	1–5	3.68	0.000	0.71
5 Conscientiousness	3.95	0.40	1–5	3.78	0.000	0.79
6 Work Pressure	55.93	15.50	0–100	43.98	0.000	0.83
7 Working Overtime	4.78	1.28	0–6	–	–	–
8 Burnout	2.62	0.50	0–6	–	–	0.67
9 Work Engagement	4.11	0.73	0–6	3.82	0.000	0.89

Note. $N = 257$. The norms are obtained from the manuals. p relates to the significance level of the deviation of the group of judges from the norm. Working overtime is a one-item measure, there is no norm. Neither there is a norm of the mean of burnout, as the manual does not provide such a norm. The norm of the personality factors was obtained by a sample, composed of the general population, the norm of work pressure was obtained by a sample, composed of the total working population, and the norm of work engagement was obtained by a sample, composed of a heterogeneous working population regarding the variety of professions.

Table 2
Intercorrelations.

Variable	1	2	3	4	5	6	7	8	9
1 Neuroticism	–								
2 Extraversion	–0.42***	–							
3 Openness	0.10	0.15	–						
4 Agreeableness	–0.33***	0.35***	0.17	–					
5 Conscientiousness	–0.53***	0.22*	0.02	0.46***	–				
6 Work Pressure	0.17	0.07	0.05	0.11	0.06	–			
7 Working Overtime	–0.02	0.12	0.00	0.14	0.12	0.39***	–		
8 Burnout	0.31**	–0.11	0.01	–0.10	0.00	0.36***	0.07	–	
9 Work Engagement	–0.41***	0.36***	0.11	0.27**	0.42***	–0.06	0.11	–0.13	–

Note. N = 257. *p < .05. **p < .01. ***p < .001. The bold numbers are significant.

Table 3
The comparison between the correlations of the sample with those of the norm population.

Variable	1	2	3	4	5	6	7	8	9	10
1 Neuroticism S	–									
2 Extraversion S	–0.42***	–								
3 Openness S	0.10	0.15	–							
4 Agreeableness S	–0.33***	0.35***	0.17	–						
5 Conscientiousness S	–0.53***	0.22*	0.02	0.46***	–					
6 Neuroticism N						–				
7 Extraversion N						–0.41***	–			
8 Openness N						0.00	0.16	–		
9 Agreeableness N						–0.21*	0.23*	–0.06	–	
10 Conscientiousness N						–0.36***	0.39***	–0.03	0.19*	–

Note. N = 257. *p < .05. **p < .01. ***p < .001. The bold numbers are significant. S = sample, N = norm population. Norm data are obtained from the manual.

F was not significant, meaning they could not be further interpreted (in terms of moderation or main effects). Therefore, Hypothesis 1 regarding the buffering effect of the four personality factors on the relationship between working overtime and burnout is also rejected.

3.2.3. H2: work pressure – work engagement, moderated by four personality factors

For H2, a total of eight models was run (i.e., models 11–14 with work pressure, and models 15–18 with working overtime, see next paragraph). Regarding work pressure (models 11–14), in model 12 the overall F was not significant and could not be further interpreted (in terms of moderation or main effect). None of the moderating effects of models 11, 13, and 14 were significant. Hypothesis 2 about the boosting effect of personality factors on the relationship between work pressure and work engagement is therefore rejected. There were also no significant main effects of work pressure: work pressure was not significantly related to work engagement. However, there were significant main effects of the personality factors: extraversion, agreeableness, and especially conscientiousness were positively related to work engagement, with medium, small, and medium effect sizes, respectively.

3.2.4. H2: working overtime – work engagement, moderated by four personality factors

In the models including working overtime (models 15–18), two personality factors showed significant moderating effects: extraversion (model 15) and conscientiousness (model 18). To further interpret these significant interactions, simple slope analyses were performed (see Table 5 and Figs. 1 and 2).

Extraversion only moderated working overtime at low levels of extraversion, with a medium effect size in terms of moderation. The slopes at moderate and high levels of extraversion showed no significance. This means that introvert individuals show more work engagement when they work overtime. Extraversion thus boosts the stimulating effect of working overtime on work engagement, but only for the low scorers on extraversion. In other words, introversion moderates the stimulating effect of working overtime on work engagement, which is not completely in line with the expectation (extraversion instead of

introversion). Therefore, Hypothesis 2a (concerning working overtime) is only partially rejected.

The boosting effect of conscientiousness on the relationship between working overtime and work engagement was only significant at high levels of conscientiousness, with a medium effect size regarding the boosting effect. The slopes at moderate and low levels of conscientiousness were not significant. This finding indicates that work engagement is highest when conscientiousness and working overtime are high. Only high scorers on conscientiousness show more work engagement when they work overtime. Conscientiousness thus boosts the stimulating effect of working overtime on work engagement, exactly in line with Hypothesis 2d (concerning working overtime, not work pressure). For models 16 (openness) and 17 (agreeableness), no significant boosting effects and no significant main effects of working overtime on work engagement were found. Agreeableness was positively related to work engagement. Hence, Hypotheses 2b and 2c were rejected.

3.2.5. H3: work pressure – burnout, moderated by neuroticism

The moderating effect in model 5 was not significant. Therefore, Hypothesis 3 regarding the exacerbating effect of neuroticism on the relationship between work pressure and burnout is rejected. However, there were two significant main effects: work pressure and neuroticism were positively associated with burnout, with a medium and small effect size, respectively.

3.2.6. H3: working overtime – burnout, moderated by neuroticism

The moderating effect in model 10 was also not significant. Therefore, Hypothesis 3 concerning the exacerbating effect of neuroticism on the relationship between working overtime and burnout is rejected. There was no significant main effect of working overtime on burnout, although neuroticism was positively associated with burnout (with a small effect size).

4. Discussion

The current study investigated the Big Five personality factors

Table 4
Moderation effects of the Big Five personality factors on the relationship between job demands (work pressure and working overtime) and both burnout and work engagement.

Independent variables	Burnout							Effect size	Work engagement							Effect size	
	F	p	R ²	β	B	t	p		F	p	R ²	β	B	t	p		
Work Pressure																	
Model 1	15.73	0.000***	0.16						Model 11	13.38	0.000***	0.14					
Work Pressure			0.13	0.35	0.01	5.92	0.000***	Medium					-0.08	-0.00	-1.38	0.17	
Extraversion			0.02	-0.12	-0.12	-2.03	0.04*	Small				0.13	0.36	0.56	6.23	0.000***	Medium
WP x E				-0.11	-0.01	-1.93	0.06						-0.02	-0.00	-0.32	0.75	
Model 2	13.22	0.000***	0.14						Model 12	1.88	0.13	0.02					
Work Pressure			0.13	0.36	0.01	6.17	0.000***	Medium					-0.06	-0.00	-1.05	0.30	
Openness				0.00	0.00	0.01	0.99						0.10	0.15	1.62	0.11	
WP x O				0.10	0.01	1.62	0.11						-0.08	-0.01	-1.33	0.18	
Model 3	14.44	0.000***	0.15						Model 13	7.95	0.000***	0.09					
Work Pressure			0.13	0.36	0.01	5.98	0.000***	Medium					-0.08	-0.01	-1.67	0.10	
Agreeableness			0.02	-0.14	-0.16	-2.32	0.02*	Small				0.07	0.27	0.47	4.62	0.000***	Small
WP x A				-0.04	-0.00	-0.70	0.48						-0.06	-0.01	-1.28	0.20	
Model 4	12.33	0.000***	0.13						Model 14	19.47	0.000***	0.19					
Work Pressure			0.13	0.36	0.01	6.07	0.000***	Medium					-0.08	-0.00	-1.47	0.14	
Conscientiousness				-0.02	-0.02	-0.32	0.75					0.18	0.41	0.76	7.32	0.000***	Medium
WP x C				0.02	0.00	0.41	0.68						-0.06	-0.01	-1.14	0.25	
Model 5	19.79	0.000***	0.19														
Work Pressure			0.13	0.31	0.01	5.40	0.000***	Medium									
Neuroticism			0.06	0.25	0.20	4.39	0.000***	Small									
WP x N				0.04	0.00	0.66	0.51										
Working Overtime																	
Model 6	1.87	0.13	0.02						Model 15	15.06	0.000***	0.15					
Working Overtime				0.09	0.04	1.52	0.13						0.07	0.02	0.64	0.53	
Extraversion			0.01	-0.11	-0.13	-2.02	0.04*	/				0.13	0.38	0.56	6.31	0.000***	Medium
WO x E				0.02	0.03	0.64	0.52					0.02	-0.14	-0.16	-2.23	0.03*	Medium
Model 7	0.73	0.54	0.01						Model 16	2.97	0.03*	0.03					
Working Overtime				0.07	0.03	1.21	0.23						0.11	0.06	1.85	0.07	
Openness				0.01	0.01	0.16	0.87						0.11	0.16	1.76	0.08	
WO x O				-0.05	-0.05	-0.88	0.38						-0.10	-0.12	-1.66	0.10	
Model 8	1.80	0.15	0.02						Model 17	7.38	0.001***	0.08					
Working Overtime				0.09	0.03	1.13	0.26						0.08	0.04	1.02	0.31	
Agreeableness				-0.10	-0.13	-1.75	0.08					0.07	0.27	0.44	4.25	0.000***	Small
WO x A				-0.08	-0.05	-1.02	0.31						-0.06	-0.05	-0.73	0.47	
Model 9	0.99	0.40	0.01						Model 18	21.07	0.000***	0.20					
Working Overtime				0.08	0.02	0.94	0.35						0.06	0.05	1.49	0.14	
Conscientiousness				-0.03	-0.04	-0.45	0.65					0.18	0.46	0.83	7.69	0.000***	Medium
WO x C				-0.09	-0.06	-1.25	0.22					0.02	0.13	0.17	2.50	0.01*	Medium
Model 10	9.49	0.000***	0.10														
Working Overtime				0.08	0.03	1.26	0.21										
Neuroticism			0.09	0.31	0.24	5.18	0.000***	Small									
WO x N				0.03	0.01	0.40	0.69										

Note. * $p < .05$. *** $p < .001$. The degrees of freedom (df) are not noted numerically in the cells for $F(253,3)$ and $t(253)$. The empty cells between model 14 and 15 and below model 18 indicate that no analyses were conducted on moderation effects of neuroticism on the relationship between job demands and work engagement as this was not in our hypotheses. The bold numbers are significant. Effect sizes (R^2) regarding the interaction effects are: 0.005 = small, 0.01 = medium, and 0.025 = large (Kenny, 2021). Effect sizes (R^2) regarding the main effects are: 0.02 = small, 0.13 = medium, and 0.26 = large (SPSS Tutorial, 2023). / indicates a significant main effect, without an effect size. WP = Work Pressure; WO = Working Overtime; E = Extraversion; O = Openness; A = Agreeableness; C = Conscientiousness; N = Neuroticism.

Table 5
Conditional effects of working overtime on work engagement at different levels of extraversion and conscientiousness.

Variable	Effect	SD	t	p	LLCI	ULCI
Extraversion						
-0.47	0.10	0.04	2.28	0.02*	0.01	0.18
-0.01	0.02	0.03	0.66	0.51	-0.04	0.09
0.49	-0.06	0.05	-1.05	0.30	-0.16	0.05
Conscientiousness						
-0.31	-0.004	0.04	-0.10	0.92	-0.07	0.07
0.05	0.06	0.03	1.68	0.09	-0.01	0.12
0.38	0.11	0.04	2.50	0.01*	0.02	0.20

Note. * $p < .05$. LLCI = lower limit confidence interval; ULCI = upper limit confidence interval; SD = standard deviation. The bold numbers are significant.

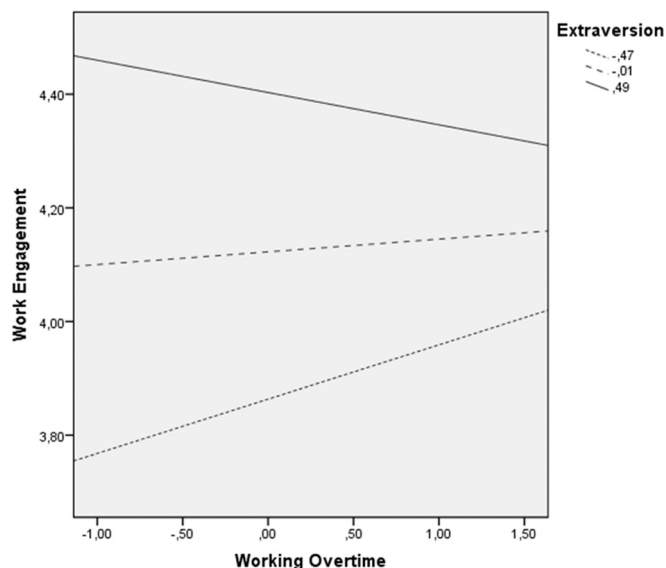


Fig. 1. Simple slope analysis: moderating effect of extraversion.

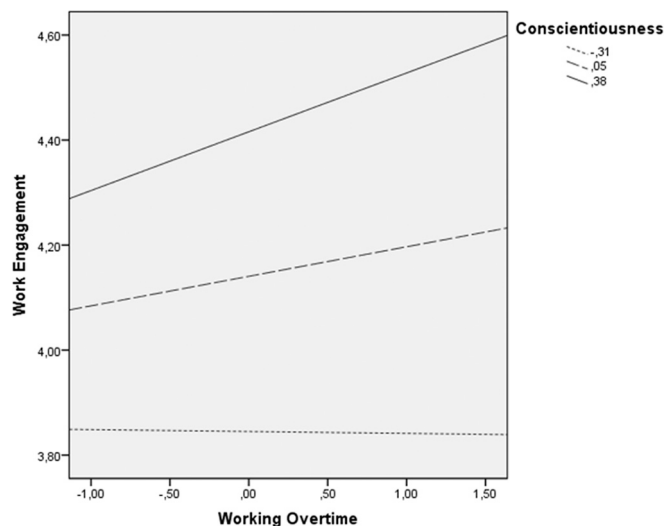


Fig. 2. Simple slope analysis: boosting effect of conscientiousness.

(extraversion, openness, agreeableness, and conscientiousness) as personal resources (or in case of neuroticism, reflecting the opposite), whereas previous studies mainly investigated traits as personal resources (Xanthopoulou et al., 2013; Xanthopoulou et al., 2007). More

specifically, we examined the moderating effects of personality factors on various relationships between job demands (work pressure and working overtime) and both burnout and work engagement in a group of Dutch judges. The work of judges is cognitively and emotionally demanding and, in addition, there is a persistent shortage of judges. All this may pose a risk for burnout and lower work engagement. Three types of moderating effects were tested: the buffering, boosting, and exacerbating effects. Besides, we also mention the statistically significant main effects, where interaction effects were non-significant. Two boosting effects related to extraversion (or actually: introversion) and conscientiousness were demonstrated on the relationship between working overtime and work engagement. We will discuss first two parts of Hypothesis 2.

4.1. H2: working overtime – work engagement, significantly boosted by introversion and conscientiousness

Significant effects at a large level were found for two hypotheses about the boosting effects on the relationship between working overtime and work engagement (Hypotheses 2a [extraversion] and 2d [conscientiousness]); although only the latter hypothesis was confirmed (2d).

The moderation effect of extraversion on the relationship between working overtime and work engagement was significant (medium effect size), albeit in the opposite direction than hypothesized (Hypothesis 2a). Introversion rather than a high extraversion had a boosting effect on the relationship between working overtime and work engagement. This means that only introvert persons show more work engagement when they work overtime. Mustafa et al. (2014) also found such an effect of extraversion and concluded that extraverted individuals are likely to be more emotionally reactive and are more susceptible to both positive and negative effects. This suggests that extraverted individuals may become more unbalanced by high levels of working overtime than individuals low on extraversion. Optimism is related to extraversion - it is also known that dispositional optimists have a positive view on their lives, but at the same time believe that problems will be solved spontaneously. However, when problems persist, they may become frustrated and less engaged in their work (Xanthopoulou et al., 2013).

Judges in our study seem to be more balanced, which is also needed for the performance of their work. This is evidenced by the fact that judges scored significantly lower than the norm population on neuroticism and significantly higher on extraversion. Regardless of the parties or the case, judges may always remain calm and handle large amounts of work in a relatively short time. Moreover, they scored significantly higher than the norm population on work engagement, meaning they are highly motivated and immersed in their work.

Hypothesis 2d was confirmed because conscientiousness had a significant boosting effect on the association between working overtime and work engagement (medium effect size), meaning that only high scorers on conscientiousness show more work engagement when they work overtime. Individuals high on conscientiousness are described as having a sense of duty and responsibility (Bozionelos, 2004; see Mazzetti et al., 2014). The characteristics of this personality factor are related to higher levels of self-control and an active process of planning, organizing, and performing tasks (Barrick & Mount, 1991; see Mazzetti et al., 2014). Individuals scoring high on conscientiousness may feel responsible for completing their work and therefore will work more overtime if needed, which may be linked to higher work engagement. These individuals want to meet the requirements and stick to the intended plan.

The characteristics of this personality factor fit well with the job. Judges have high responsibility for their work, the planning of their work is important, and they work over when tasks are not yet completed. The score of conscientiousness of judges in this sample was significantly higher than that of the norm population. They are highly motivated to work over when necessary. We may conclude that introversion and conscientiousness are important personality factors for judges to perform the work. No previous studies have been conducted among

judges, so no comparison can be made.

In the section below, we will discuss the hypotheses that were not confirmed.

4.2. H1: work pressure and working overtime – burnout, moderated by four personality factors

The results showed that the buffering hypothesis (Hypotheses 1a, b, c, d) could not be affirmed. Extraversion, openness, agreeableness, and conscientiousness had no buffering effect on the relationship between the job demand work pressure and burnout, nor on the relationship between the job demand working overtime and burnout in our group of judges. The COR theory that assumes that personal resources can help and facilitate individuals to better cope with threatening situations is therefore not supported (Hobfoll & Shirom, 1993). Contrary to the findings among Finnish employees by Mäkikangas and Kinnunen (2003), the personal resources in our study were insufficiently effective in managing job demands.

The absence of these buffering effects could be explained by the fact that high job demands have been present for years, which is plausible since Dutch judges have been reporting high work pressure for years in a context of persistent shortage of judges (Boone et al., 2006; Van der Ploeg & Verberk, 2015; Weimar, 2008). Judges in our study scored significantly higher than the norm population on work pressure, which requires adequate coping skills sustained over a long period of time to deal efficiently with the difficult working conditions (see Xanthopoulou et al., 2013).

Although personality factors did not significantly buffer the association between job demands and burnout in judges, the main effects of two Big Five personality factors were significant in the relationship between work pressure and burnout. Extraversion and agreeableness were significantly negatively related to burnout, both with a small effect size. Thus, in this relationship these factors could be considered as personal resources. In the relationship between working overtime and burnout only the main effect of extraversion was significant, but no effect size was found. Openness and conscientiousness are not significantly associated with burnout.

4.3. H2: work pressure and working overtime – work engagement, moderated by four personality factors

The boosting hypotheses were partially confirmed (Hypotheses 2a and 2d as discussed before). Hypotheses about the boosting effects of the four Big Five personality factors on the relationship between work pressure and work engagement were not confirmed (Hypotheses 2b and 2c), indicating that there were no significant boosting effects of openness and agreeableness. Other studies have demonstrated in general that these personality factors are not strongly related to burnout and work engagement (Sulea et al., 2015).

4.4. H3: work pressure and working overtime – burnout, moderated by neuroticism

Neuroticism did not moderate the relationship between job demands (work pressure and working overtime) and burnout, thereby not confirming an exacerbating effect (Hypothesis 3). Individuals high on neuroticism often use inadequate coping styles, such as avoiding problems and reacting emotionally to problems (Lazarus & Folkman, 1984). The expectation that neuroticism would exacerbate the harmful effect of job demands on burnout was plausible (see Bakker & Demerouti, 2007). According to the COR theory, neuroticism is the opposite of a personal resource because it is associated with helplessness, anxiety, irritability and low self-esteem. Neuroticism can lead to exhaustion and ultimately burnout (Kim et al., 2009; Langelaan et al., 2006). This was not found in our group of judges, even after controlling for working overtime. The level of neuroticism was significantly lower in judges than that of the

norm population meaning that they were more balanced and less affected by feelings of tension (Weiss & Deary, 2020). Furthermore, also work pressure showed a positive relationship with burnout (medium effect size), but working overtime did not. Neuroticism was also significantly related to burnout, with small effect sizes in the moderation analyses regarding work pressure and working overtime, respectively.

Although few buffering, boosting, and exacerbating effects to reduce burnout and stimulate work engagement were found, important boosting effects of introversion and conscientiousness were found on the relationship between working overtime and work engagement in the study group that are important personality factors in dealing with overtime. Based on the main effect of extraversion on burnout, we may conclude that high extraversion is important for judges, however, in the relationship between working overtime and work engagement, a boosting effect of introversion was shown. Both extraversion and introversion seem effective in their work, respectively, to prevent burnout and increase work engagement when working overtime. Thus, both introverted and extraverted judges benefit from their personality characteristic.

4.5. Implications of the results for judges

Judges are a professional group with a unique profile. They must make judgments and decide on issues that are of major importance to individuals as well as to society in general. Thereby, judges must work carefully in listening to the parties and studying dossiers. Despite a high work pressure in this study (significantly higher than the norm population), no elevated level of burnout was found. These results are intriguing because previous research showed that work pressure can lead to burnout (Demerouti et al., 2004; Van Ruyseveldt, 2006). Another indication is that judges scored high on work engagement, often described as the antipode of burnout (Schaufeli & Bakker, 2004). Moreover, research has shown that Australian judges have high job satisfaction despite their high job demands (Roach Anleu & Mack, 2014). Further, judges may get stimulated because working overtime can be a challenge for them. In some cases, job demands act as challenges in contrast to the fact that it is often found that job demands are a hindering factor (Crawford et al., 2010). Apparently, there are positive aspects of the work against the high work pressure and other demanding work conditions. For example, job resources as social support of colleagues or the work content, may help judges to cope with the high demands. Research on prosecutors indicated that their commitment was not directly affected by among others work stress (Na et al., 2018).

These results are important for the management of the court and coaching of judges. When work pressure is a risk for burnout, measures can be taken to reduce work pressure which in turn can reduce the likelihood of burnout. Attention should be paid to judges high on neuroticism. Furthermore, extraversion and agreeableness are associated with less burnout and extraversion, agreeableness and conscientiousness are associated with more work engagement. Hence, judges who score low on these factors may also need extra attention.

4.6. Strengths, limitations, and suggestions for future research

The strength of this study was the uniqueness of the research group that is rarely investigated, but at the same time the results cannot be extrapolated to other professional groups, which in turn is a first limitation. Moreover, the sample in this study is not totally representative for the population of judges. Regarding the professional group itself, they are practicing in various fields of law, which may lead to a statistical way to a clustering of data because judges within one field of law may have more in common than with judges from other sections. We focused on the total group of judges. However, it is possible that clusters exist and that we overestimate the variance in the sample, and therefore, overestimate the importance of certain variables in the model. The lack of investigating this clustering can be seen as a limitation of this study

and can be a target point for future research. It would be interesting to investigate differences between various clusters of judges. A second limitation concerns the cross-sectional design, which limits the conclusions about the interaction effects. The relationships between the variables should be considered with caution and future research should employ a longitudinal study design. A third limitation is the use of self-report questionnaires that can be sensitive to answer bias.

Future research is recommended to investigate other occupational groups, with specific attention to the moderating effects of the Big Five factors on the relationships between job demands and both burnout and work engagement respectively, to explicate further moderating effects among these concepts.

5. Conclusion

Conscientiousness as well as extraversion boosted the relationship between working overtime and work engagement. Regarding conscientiousness, this means that judges, who have to work very carefully, would benefit from such a personality factor, because they become even more engaged, especially when working overtime. Also, introversion may be important for judges, to be able to mentally shut off to other influences demanding their attention. They can concentrate on their work and consequently become engaged, especially when working overtime. So, conscientious and introvert judges who work overtime have an advantage above others in becoming or staying engaged in their work. Significant main effects were also found. Work pressure and neuroticism were positively related to burnout, whereas extraversion and agreeableness were associated with less burnout. Finally, extraversion, agreeableness and conscientiousness showed a positive relationship with work engagement.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of Competing Interest

Authors have declared no conflicts of interest.

Data availability

The data that has been used is confidential.

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