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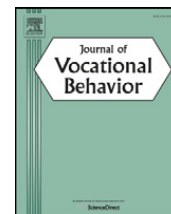
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# Work engagement, performance, and active learning: The role of conscientiousness

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## ABSTRACT

The present study examines whether the relationship between work engagement and job performance is moderated by the extent to which individuals are inclined to work hard, careful, and goal-oriented. On the basis of the literature, it was hypothesized that conscientiousness strengthens the relationship between work engagement and supervisor ratings of task and contextual performance as well as active learning. The hypotheses were tested on a sample of 144 employees from several occupations. Results of moderated structural equation modeling supported the hypotheses. Work engagement was positively related to task performance, contextual performance, and active learning, particularly for employees high in conscientiousness.

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Engagement is important for organizations since it contributes to the bottom line (Demerouti & Cropanzano, 2010; Macey & Schneider, 2008). Recent studies have shown that work engagement is positively related to supervisor-ratings of job performance (Bakker & Bal, 2010; Halbesleben & Wheeler, 2008), financial results (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009), and client satisfaction (Salanova, Agut, & Peiró, 2005). Earlier research by Demerouti (2006) has indicated that positive work experiences, like flow, are not necessarily directly and positively related to performance at work. Rather, it was found that the personality dimension of conscientiousness qualified the relationship between flow at work and both task and contextual performance. The present study builds on this research and investigates whether personality may qualify the work engagement–performance relationship. Specifically, we will investigate whether the persistency and self-discipline that is characteristic of conscientiousness is needed to transform work engagement into high-quality performance.

The present study contributes to the existing literature in the following ways. First, we aim to qualify the conscientiousness–job performance relationship. The overall average correlations in meta-analyses are typically rather modest (Barrick & Mount, 1991; Hurtz & Donovan, 2000). This implies that there might be other variables involved that mask a possible relationship, including work engagement. Second, while Demerouti (2006) examined task and contextual performance, the present study additionally examines active learning as a valuable organizational outcome, which is relevant for contemporary learning organizations. A learning organization is one that focuses on developing and using its information and the knowledge capabilities of its employees in order to create higher-valued information and knowledge, to change behaviors, and to improve organizational outcomes (King, 2001). According to King, one of the strategies to become a learning organization is by supporting and stimulating individual learning – as enhanced individual learning will translate into improved organizational behaviors. Third, rather than focusing on flow, the major focus of our study is on work engagement. Work engagement has been found to be frequently experienced by employees throughout the whole working population (Schaufeli, Bakker, & Salanova, 2006) while flow has unclear prevalence. Finally, while in Demerouti's (2006) study performance ratings were provided by colleagues, in the present study we collected supervisor ratings. Supervisor ratings have been found to have higher reliability than ratings of peers and subordinates (Conway

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& Huffcutt, 1997). This has been explained by the fact that it is part of the supervisor's job to pay attention to and evaluate subordinates' performance while peers may not attend to performance as closely because it is generally not part of their job to do so.

## 1. Theoretical background

Work engagement is an active, positive work-related state that is characterized by vigor, dedication, and absorption (Schaufeli et al., 2006). Vigor refers to high levels of energy and resilience while working. Dedication is characterized by being strongly involved in one's work and experiencing a sense of significance and enthusiasm. Absorption is the state of being fully concentrated and happily engrossed in one's work. In short, engaged employees have high levels of energy and are enthusiastically involved in their work. Moreover, they are often fully immersed in their work so that time flies (see also May, Gilson, & Harter, 2004).

Work engagement is suggested to be beneficial for both the individual and the organization as it is expected to influence how individuals do their work and fulfill their work tasks (Demerouti & Cropanzano, 2010). Task performance is also referred to as in-role performance and refers to those officially required outcomes and behaviors that directly serve the goals of the organization (Motowido & Van Scotter, 1994). Among other things, task performance includes meeting company objectives and effective sales presentations (Behrman & Perreault, 1982). The definition of task performance emphasizes the instrumentality of performance for organizational goals. However, in addition to task performance, there are other possible performance indicators such as contextual performance and active learning behavior. Work engagement may also facilitate these types of behaviors.

Contextual or extra-role performance is defined as discretionary behaviors on the part of an employee that are believed to directly promote the effective functioning of an organization without necessarily directly influencing an employee's productivity (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Contextual performance includes organizational citizenship behavior with its five components — civic virtue, courtesy, altruism, sportsmanship, and conscientiousness. It also refers to such aspects as personal initiative and voice that indicate proactive behaviors towards the organization. While the activities relevant for task performance may differ between jobs, the activities for contextual performance are relatively similar in the universe of jobs (Sonnentag & Frese, 2002).

Active learning behavior in the context of work is also known as employee development (Simmering, Colquitt, Noe, & Porter, 2003) and refers to self-initiated, self-directed behavior by means of which employees improve their competencies and work environment (London & Smither, 1999). Active learning has three characteristic components. First, active learning implies that employees have a motivation to learn whereby they start learning activities (e.g., searching for relevant information) themselves (Simmering et al., 2003; Taris, Kompier, De Lange, Schaufeli, & Schreurs, 2003). Second, an active learning employee feels that he or she is in control over the learning process (Bell & Kozlowski, 2008). Third, the active learner experiences a feeling of mastery and self-efficacy (Taris et al., 2003). An active attitude whereby an employee learns and applies new skills and knowledge has been suggested as a separate, but crucial component of job performance in today's rapidly changing work environment requiring flexibility and adaptability of employees.

### 1.1. Engagement–performance link

There are several reasons why engaged workers may perform better than their non-engaged counterparts. We will discuss two reasons here (for an overview, see Demerouti & Cropanzano, 2010). First, engaged employees often experience positive emotions (Bindl & Parker, 2010). Happy people are more sensitive to opportunities at work, more outgoing and helpful to others, and more confident and optimistic (Cropanzano & Wright, 2001). According to the broaden-and-build theory (Fredrickson, 2001), positive emotions like joy, interest and contentment share the capacity to broaden people's momentary thought–action repertoires and build their personal resources (ranging from physical and intellectual resources to social and psychological) through widening the array of thoughts and actions. For instance, joy broadens resources by creating the urge to play and be creative. Interest, another positive emotion, fosters the desire to explore, assimilate new information and experiences and grow (e.g., Fredrickson & Losada, 2005). Thus, engaged workers may perform better because they often experience positive emotions and are open to new experiences.

A second reason why engaged workers may perform better is that engaged workers have more physical resources. Indeed, research has generally shown a positive relationship between work engagement and health. For example, a recent study by Schaufeli, Taris, and Van Rhenen (2008) showed that engaged workers reported fewer psychosomatic complaints than their non-engaged counterparts. Similarly, Demerouti, Bakker, De Jonge, Janssen, and Schaufeli (2001) found moderate negative correlations between engagement (particularly vigor) and psychosomatic health complaints (e.g., headaches, chest pain). In addition, Hakanen, Bakker, and Schaufeli (2006), in their study among Finnish teachers showed that work engagement was positively related to self-rated health and workability.

Several recent studies have indeed shown that work engagement is positively related to job performance (Demerouti & Cropanzano, 2010). For example, Bakker and Bal (2010) showed that engaged teachers received higher ratings from their supervisors on in-role and extra-role performance, indicating that engaged employees perform well and are willing to go the extra mile. Salanova et al. (2005) conducted a study among personnel working in Spanish restaurants and hotels. Employees ( $N=342$ ) from 114 service units (58 hotel front desks and 56 restaurants) provided information about organizational resources, engagement, and service climate. Customers ( $N=1,140$ ) from these units provided information on employee performance and customer loyalty. The findings showed that organizational resources and work engagement predicted service climate, which in turn predicted employee performance and then customer loyalty. Moreover, Xanthopoulou et al. (2009) conducted a diary study among employees working in a Greek fast-food restaurant, and found that day-levels of work engagement were predictive of objective daily financial returns.

### 1.2. The role of conscientiousness

Personality can be described in terms of five basic factors (the 'Big Five'), including Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience (e.g., John, 1990; McCrae, 1992). Meta-analyses have revealed that specific personality dimensions successfully predict performance in some settings (Barrick & Mount, 1991). Conscientiousness has demonstrated the most consistent prediction across situations (Barrick & Mount, 2005). Conscientious individuals are generally well-organized, careful, thorough, goal-oriented and hard working (Costa & McCrae, 1992). Conscientiousness can be viewed as a measure of trait-oriented work motivation, and it appears to influence performance in all jobs through the 'will do' motivational component (Barrick & Mount, 2005). Not surprisingly, conscientiousness has also been considered as an aspect of contextual performance by Smith, Organ, and Near (1983); see also Goodman and Svyantek, (1999).

However, the correlations between conscientiousness and performance have been modest. For example, the overall average sample-size corrected correlations in meta-analyses are typically in the .09–.20 range (Barrick & Mount, 1991; Hurtz & Donovan, 2000). This implies that there might be other variables involved that mask a possible relationship. Barrick and Mount (2005) suggest that personality and work outcomes are not simply, bivariate related. They recommend that researchers should investigate how the interaction between personality and motivation influences performance.

Following this suggestion, Demerouti (2006) examined the relationship between peak experiences of flow at work and conscientiousness on the one hand, and task and contextual performance on the other hand. Flow did not result in better job performance for all employees. Frequent flow experiences were beneficial for task and contextual performance as rated by colleagues, only for employees high in conscientiousness. For employees low in conscientiousness it was found that their experience of flow made no difference in terms of performance. Thus, positive emotions proved to be beneficial only for those employees who could direct these emotions towards the right objects and activities.

Similarly, Witt and Ferris (2003) conducted four studies to test the hypothesis that the relationship between conscientiousness and job performance reflecting interpersonal effectiveness is more strongly positive among workers who are higher rather than lower in social skill. Results supported the hypothesis in all 4 studies. Among workers high in social skill, conscientiousness was positively related to performance. Among workers low in social skill, the relationship between conscientiousness and performance was nonsignificant in Study 2 but was negative in the other 3 studies. Taken together, the studies by Demerouti (2006) and Witt and Ferris (2003) illustrate the importance of motivation and ability when explaining the relationship between conscientiousness and performance.

### 1.3. Hypotheses

In the present study, we will investigate the interaction between work engagement and conscientiousness when predicting other-ratings of task performance, contextual performance, and active learning behavior. We predict that the positive relationship between work engagement and performance will only hold for employees high in conscientiousness. The reason for this is that conscientiousness has been associated with self-discipline, achievement striving, dutifulness and competence (Costa, McCrae, & Dye, 1991; McCrae & Costa, 1986). Their persistency and self-discipline will presumably cause the conscientious individual to finish tasks and to accomplish things. Indeed, Piedmont (1993) and Deary, Watson, and Hogston (2003) found a positive relationship between conscientiousness and personal accomplishment. Whereas conscientiousness can provide the resources for performance and active learning behavior (in the form of self-discipline, perseverance, etc.; see Simmering et al., 2003), work engagement can provide the motivation to perform well. Thus, we hypothesize that engaged individuals will perform well and will be most willing to learn new things, but only when they score high on conscientiousness:

**Hypothesis 1.** Work engagement is positively related to task performance for employees who score high (vs. low) on conscientiousness.

**Hypothesis 2.** Work engagement is positively related to contextual performance for employees who score high (vs. low) on conscientiousness.

**Hypothesis 3.** Work engagement is positively related to active learning behavior for employees who score high (vs. low) on conscientiousness.

## 2. Method

### 2.1. Participants

Participants were 144 employees working in the chemical industry, consultancy and personnel agencies, telemarketing, education, or catering service. The mean age was 33 years, with an average job experience of 9 years. Fifty-seven percent was male. For the assessment of performance, 23 supervisors participated. They had a mean age of 43 years and an average relevant job experience of 20 years. Only one supervisor was female.



## 2.2. Procedure

Thirty-three supervisors at different companies or educational institutes were asked to participate. Twenty-three responded positively, a response rate of 72%. The supervisors received a mail containing: (i) a survey on which to rate the performance of one or more of their employees, and (ii) a self-report questionnaire that had to be filled out by the employees who were rated. After employees filled out the questionnaire (including questions about conscientiousness and work engagement) they were instructed to send it back directly to the researchers, without involvement of the supervisor. The supervisor who filled out the performance ratings (in three categories: task performance, contextual performance, and active learning behavior) also sent these forms back directly to the researchers.

## 2.3. Measures

*Conscientiousness* was measured with the Dutch version of the Five-Factor Personality Inventory (FFPI; Hendriks, Hofstee, & De Raad, 1999). The FFPI consists of 100 items of which 20 items measure Conscientiousness. The questionnaire is phrased in a third-person format. Examples are “likes to follow a regular schedule”, and “acts without planning” (recorded). Employees indicated per item the extent to which the trait was applicable to them (1 = not at all applicable to 5 = totally applicable). The FFPI has high internal consistency, validity, and test-retest reliability (Hendriks et al., 1999). In the present study, Cronbach's alpha was .93.

*Work engagement* was assessed with the validated nine-item version of the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2006). Example items are: “At my job I feel strong and vigorous” (vigor), “I am enthusiastic about my job” (dedication), and “I am immersed in my work” (absorption). All items were scored on a seven-point rating scale ranging from 0 (‘never’) to 6 (‘always’). Although confirmatory factor analyses have supported the three-dimensional structure of the UWES, the dimensions are very closely related (e.g., Demerouti et al., 2001; Schaufeli et al., 2006). We therefore decided to create one overall score for work engagement. In line with the recommendations of Mathieu, Tannenbaum, and Salas (1992), we used the overall score as the only indicator of the latent work engagement factor in moderated structural equation modeling analysis (see *Strategy of analysis*). Cronbach's alpha was  $\alpha = .84$ .

*Task performance* was assessed with five items of the nine-item scale developed by Goodman and Svyantek (1999). Example items are: “Fulfills all the requirements of the job” and “Is competent in all areas of the job, handles tasks with proficiency” (1 = not at all characteristic, 7 = totally characteristic). Cronbach's alpha was  $\alpha = .78$ .

*Contextual performance* was assessed with five items from Goodman and Svyantek's (1999) scale for contextual performance. Examples are “Willingly attends functions not required by the organization, but helps in its overall image”, and “Takes initiative to orient new employees to the department even though not part of his/her job description” (1 = not at all characteristic, 7 = totally characteristic). Cronbach's alpha was  $\alpha = .77$ .

*Active learning behavior* was measured with seven items. Two items were taken from Taris et al. (2003). To ensure sufficient reliability, five new items were developed for the purpose of the present study. The scale assesses the extent to which an employee actively engages in active learning behavior, by searching for new knowledge and new ways to improve performance. Examples are: “This employee tries to develop him/herself all the time”, and “Tries to learn new things through work”. The items had the same answering format as the task and contextual performance scales. The reliability of the total, seven-item scale was good,  $\alpha = .85$ .

## 2.4. Strategy of analysis

We conducted moderated structural equation modeling (MSEM) using AMOS (Arbuckle, 2006) for testing our hypotheses. SEM is a preferable data analysis strategy for testing models involving latent constructs. Furthermore, MSEM allows for assessing and correcting for measurement errors whereas it simultaneously provides measures of fit of the model under study. We used the comparative fit index (CFI), the more conservative Tucker-Lewis Index (TLI), and the root mean square error of approximation (RMSEA) to examine the fit of the model to the data. In general, models with fit indices of  $>.95$  and an RMSEA of  $<.06$  indicate a close fit between the model and the data, whereas fit indices of  $>.90$  represent a reasonable fit (Hu & Bentler, 1999).

We followed the MSEM procedure described by Cortina, Chen, and Dunlap (2001). We tested an interaction model that included three exogenous factors (work engagement, conscientiousness, and their interaction term), and three endogenous factors (task performance, contextual performance, and active learning). The indicators of the endogenous variables were included as parcels, using three parcels for each latent outcome variable. A parcel can be defined as an aggregate-level indicator comprised of the average of two or more items. Parceling is preferable over using more items as indicators of a construct as it reduces type I errors in the item correlations, and reduces the likelihood of a-priori model misspecification. We followed the Item-to-Construct Balance procedure as described by Little, Cunningham, and Shahar (2002), creating latent constructs that were indicated by three parcels. Combinations of parcels were chosen on the basis of the item-to-construct estimates whereby the first highest item is combined with the lowest item, the second highest item with the second lowest, and so on.

Each exogenous variable had only one indicator that was the standardized scale score of the respective factor (Mathieu et al., 1992). The indicator of the latent interaction factor was the multiplication of the standardized scale scores of the variables work engagement and conscientiousness. The model included direct paths from the three exogenous factors to the endogenous factor. Work engagement and conscientiousness were allowed to correlate, while correlations between work engagement and conscientiousness on the one hand, and the interaction term on the other, were expected to be zero. Finally, the paths from the latent

exogenous variables to their indicators were fixed using the square roots of the scale reliabilities, while the error variances of each indicator were set equal to the product of their variances and one minus their reliabilities. Fig. 1 provides a graphical display of the MSEM analysis. We refer to Cortina et al. (2001) for further details on the calculation of the reliability score of the interaction term.

### 3. Results

#### 3.1. Descriptives

Table 1 shows the means, standard deviations, and correlations between the model variables. This table also includes all control variables (gender, age and work experience of the employee and the supervisor). The correlations between the variables work experience and age were unacceptably high (employee  $r = .84$ ; supervisor  $r = .92$ ). In order to prevent problems of multicollinearity we decided to include only the age of the supervisor and the age of the employee as controls. We estimated a measurement model including all scale variables of our hypothesized model with scale items tapping the latent variables. The measurement model including the variables work engagement, conscientiousness, task performance, contextual performance, and active learning fit well to the data,  $\chi^2(929) = 1093.16$ , RMSEA = .035, CFI = .93, TLI = .93. All items had significant loadings (all above .43) on the intended factors ( $p < .001$ ). Furthermore, we conducted a Confirmatory Factor Analysis (CFA), investigating whether the three work outcomes in fact represented three different constructs. The CFA confirmed that unlike the single factor model, the three-factor model fit to the data,  $\chi^2(114) = 167.29$ , RMSEA = .047, CFI = .96, TLI = .95, and significantly improved the model fit,  $\Delta\chi^2(3) = 207.91$ ,  $p < .001$ . It should be noted that also the measurement model with the items as indicators of work engagement and conscientiousness, and the parcels of task performance, contextual performance, and active learning fit well to the data,  $\chi^2(651) = 702.64$ , RMSEA = .024, CFI = .98, TLI = .97.

We tested for each control variable (gender and age of the employee and the supervisor) whether the relationships under study changed without the control variable. As the results were stable, the control variables were left out of the model. This strategy was chosen to create a more parsimonious model, after checking any confounding effects of control variables.

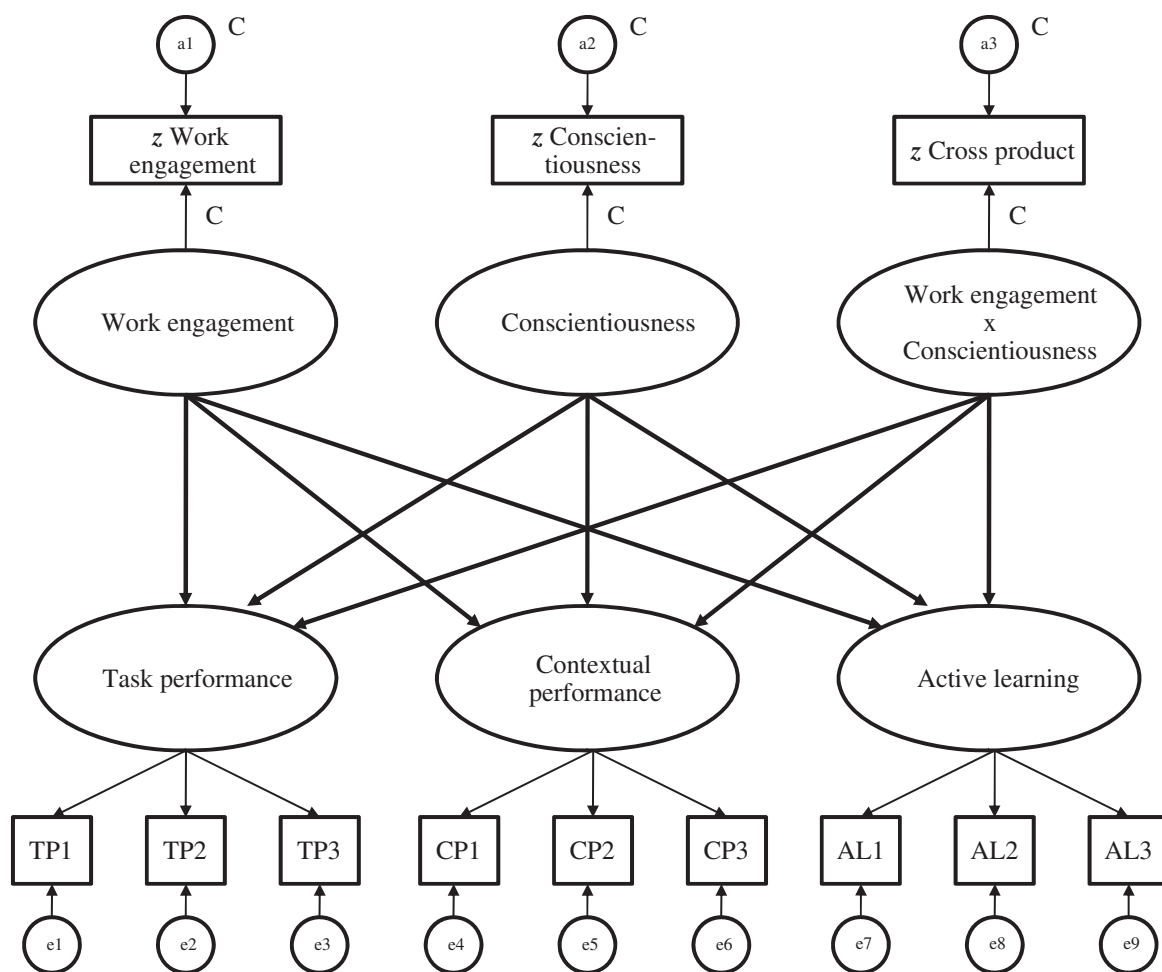


Fig. 1. MSEM analysis of the Engagement  $\times$  Conscientiousness interaction effect on work outcomes. All constrained paths and error variances are marked with C.

**Table 1**

Means, standard deviations and correlations of model variables, N = 144.

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age employee	32.76	10.18										
2. Work experience employee	9.08	8.28	.84**									
3. Gender employee (male)	0.57	0.50	.35**	.32*								
4. Age supervisor	38.90	8.21	.62**	.45**	.13**							
5. Work experience supervisor	15.69	8.15	.59**	.46**	.14	.92**						
6. Gender supervisor (male)	0.89	0.32	.28**	.14	.05	.36**	.25**					
7. Task performance	5.62	0.70	.21**	.22**	.30**	.13	.08	.03				
8. Contextual performance	5.51	0.71	.19**	.24**	.24**	.11	.08	-.11	.55**			
9. Active learning	5.25	0.69	.19**	.17*	.14	.26**	.17*	.15	.34**	.29**		
10. Work engagement	4.16	0.60	.03	-.13	-.11	.15	.06	.09	.18*	.06	.13	
11. Conscientiousness	3.69	0.53	.20*	.07	.00	.20*	.10	.18*	.19*	.15	.10	.32**

\*  $p < .05$ .\*\*  $p < .01$ .

### 3.2. Test of hypotheses

Table 2 provides the results of the MSEM analysis. As can be seen from this table, the interaction products of conscientiousness and work engagement were significant for all three work outcomes. As suggested by Cortina et al. (2001), we examined whether the model including all paths from the interaction term to the outcomes was significantly better than alternative models in which we successively eliminated each path from the interaction term to the respective performance dimension. The three alternative models each significantly deteriorated the model fit (task performance:  $\Delta\chi^2(1) = 4.43$ ,  $p < .05$ ; contextual performance  $\Delta\chi^2(1) = 5.53$ ,  $p < .05$ ; active learning  $\Delta\chi^2(1) = 3.93$ ,  $p < .05$ ). Thus, conscientiousness significantly moderated the relationships between work engagement and the work outcomes task performance, contextual performance, and active learning. The interaction effects are graphically depicted in Figs. 2 to 4. In line with Hypothesis 1, Fig. 2 clearly shows that the relationship between work engagement and task performance was positive for respondents scoring high (+1SD) on conscientiousness, unlike respondents scoring low (−1SD) on conscientiousness. A simple slope test (Table 3) revealed that the positive slope was significant for respondents scoring high ( $b = .45$ ,  $p < .01$ ) or average on conscientiousness ( $b = .26$ ,  $p < .05$ ), whereas the slope for respondents scoring below average was not significant ( $b = .06$ ,  $ns$ ).

Fig. 3 shows that the relationship between work engagement and contextual performance was positive among respondents scoring high on conscientiousness, whereas this relationship was slightly negative, although not significant ( $b = -.14$ ,  $ns$ ) among respondents scoring low on conscientiousness. The simple slope test (Table 3) indicated that only the slope at high levels of conscientiousness was significant ( $b = .40$ ,  $p < .05$ ). This result supports Hypothesis 2.

We found a similar result for the relationship between work engagement and active learning. Work engagement was only positively related to active learning among respondents scoring above average on conscientiousness, and not among respondents scoring below average on conscientiousness (Fig. 4). Again, a simple slope test confirmed that the relationship between work engagement and active learning was significantly positive ( $b = .38$ ,  $p < .05$ ) at higher levels of conscientiousness, whereas this relationship was not significant at medium ( $b = .18$ ,  $ns$ ) or low ( $b = -.02$ ,  $ns$ ) levels of conscientiousness (Table 3). Thus, Hypothesis 3 was also supported.

**Table 2**

Moderated SEM analyses of the interaction effect of conscientiousness on the relationship between work engagement and work outcomes, N = 144.

	Task performance	Contextual performance	Active learning
<i>Path estimates</i>			
Engagement	.15	.18	.07
Conscientiousness	.19*	.08	.17
Interaction term	.21*	.24*	.20*
<i>Fit indices</i>			
$\chi^2(df)$	68.53(46)*		
CFI	.96		
TLI	.94		
RSMEA	.06		

\*  $p < .01$ .

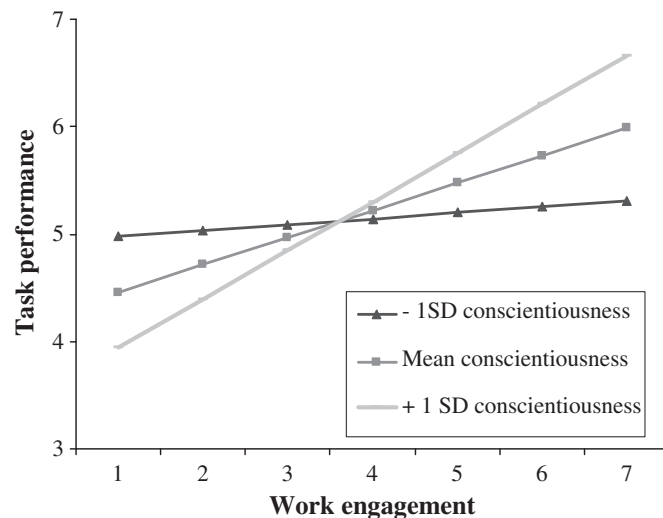


Fig. 2. Interaction effect of conscientiousness and engagement on task performance.

#### 4. Discussion

The central aim of the present study was to investigate whether conscientiousness qualifies the positive relationship between work engagement and performance. The results clearly show that this personality trait moderates the link between engagement and three types of performance. Engagement only facilitated performance when employees scored high (vs. low) on persistency and self-discipline (i.e. conscientiousness). In what follows, we will discuss the main contributions of the study.

##### 4.1. Main contributions

A major contribution of the present study is that it expands previous studies that have shown that work engagement is positively related to job performance (Bakker & Bal, 2010; Bakker & Xanthopoulou, 2009; Halbesleben & Wheeler, 2008; Salanova et al., 2005; Xanthopoulou et al., 2009). Using supervisor-ratings of task performance, contextual performance, and active learning behavior, we found that employees were most positively evaluated when they were highly engaged in their work. Thus, employees who felt most energetic and who were most dedicated were most likely to show adequate task performance. This finding is in line with the idea that engaged employees are best able to perform well and build their personal resources (cf. Demerouti & Cropanzano, 2010). Note, however, that work engagement was uncorrelated to contextual performance and active learning.

Probably the most important contribution of the present study is that it offers an additional explanation as to when engagement is positively related to job performance and active learning. We found that conscientiousness qualifies the main effects of engagement on performance. Particularly individuals high in conscientiousness translated their work engagement in increased job performance and active learning. Conscientious employees are inclined to be reliable, hardworking, self-disciplined, and

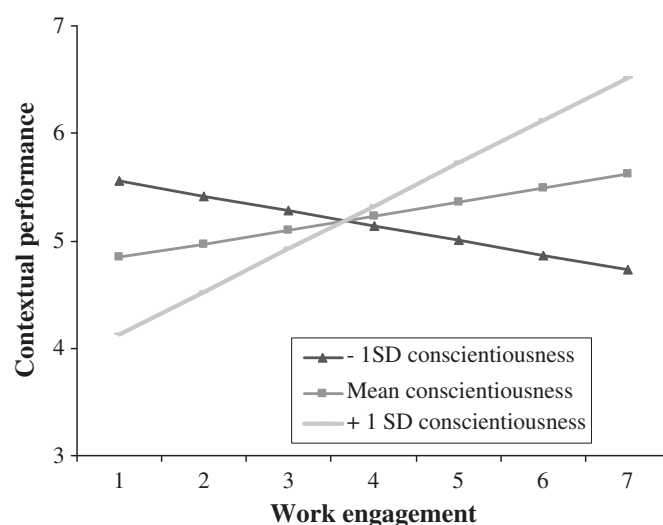


Fig. 3. Interaction effect of conscientiousness and engagement on contextual performance.



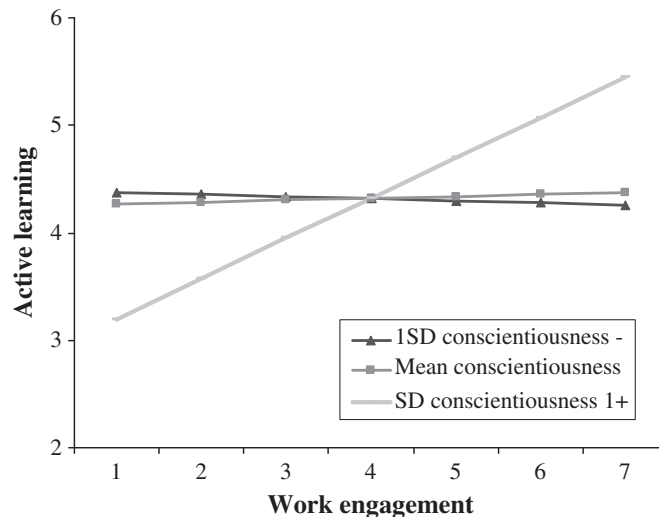


Fig. 4. Interaction effect of conscientiousness and engagement on active learning.

persevering (McCrae & Costa, 1986). This preference for planned rather than spontaneous behavior apparently helped them to transform their vigor, dedication, and absorption into high-quality performance. Conscientious employees were also more likely to help their colleagues and to engage in active learning behavior when they were enthusiastic about their work. Conscientiousness influences the way in which we regulate and direct our impulses. Thus, whereas those low in conscientiousness did not show increased performance and more active learning behavior as a function of their work engagement, those high in conscientiousness did. This finding indicates that work engagement per se is a necessary but not sufficient condition for enhanced performance and active learning. The potential work engagement has needs to be directed to the right tasks and has to be transformed using hard work in order to enhance performance.

These findings show that how work is experienced has a more pronounced effect for those high in conscientiousness. Consistently, Witt, Andrews, and Carlson (2004) observed that the performance of call center operators was worse in terms of volumes of calls answered only among conscientious workers who reported feeling emotionally exhausted. The performance of emotionally exhausted workers low in conscientiousness was unaffected. Furthermore, our findings replicate and expand the results of Demerouti (2006), who found that flow experiences (absorption, intrinsic work motivation, and work enjoyment) were beneficial for task and contextual performance as rated by colleagues, only for employees high in conscientiousness. For employees low in conscientiousness it was found that their experience of flow made no difference in terms of performance. Our study expanded the findings of Demerouti (2006) as we confirmed the same pattern for work engagement by using supervisor ratings of performance, and by incorporating active learning as an outcome.

Conscientiousness is generally considered as the most valid personality predictor of job performance (Dudley, Orvis, Lebiecki, & Cortina, 2006). Indeed, empirical research has shown conscientiousness to be positively related to performance indicators across many job performance criteria and occupational groups (Barrick & Mount, 1991). Our study adds to the evidence that conscientiousness is not always positively related to work behaviors, including performance and learning behaviors (Colquitt, LePine, & Noe, 2000; LePine, Colquitt, & Erez, 2000). Scholars may need to rely more on Person  $\times$  Situation approaches to demonstrate when conscientiousness can and cannot have favorable effects (Simmering et al., 2003).

According to Karasek (1979), active learning is expected to occur in active jobs, i.e. jobs that set high demands and provide decision latitude. Our findings add to this literature by showing that the conditions that are beneficial for learning do not have to be externally provided. Rather, we found that employees are more actively involved in learning when they set high demands for themselves (cf. conscientiousness) and when they choose to invest effort in their job (cf. vigor, dedication, absorption).

Table 3

Simple slope tests of the relationship between work engagement and the work outcomes at different levels of conscientiousness.

	Task performance		Extra-role performance		Active learning	
	Unst. est.	t-value	Unst. est.	t-value	Unst. est.	t-value
– 1SD conscientiousness	0.06(0.12)	0.48	– 0.14(0.12)	– 1.17	– 0.02(0.12)	– 0.16
M conscientiousness	0.26(0.1)	2.55*	0.13(0.10)	1.27	0.18(0.10)	1.73
+ 1SD conscientiousness	0.45(0.15)	2.94**	0.40(0.16)	2.54*	0.38(0.16)	2.38*

The estimates reflect unstandardized regression coefficients.

\*\*  $p < .01$ .

\*  $p < .05$ .

#### 4.2. Limitations and strengths

Two limitations of the present study should be emphasized. First, while the sample size is larger than the single samples of previous studies examining relationships of personality or well-being with job performance (e.g., Demerouti, 2006; Witt et al., 2004), it was still rather small. An advantage of the study population was that it contained a heterogeneous sample of jobs, increasing variance in terms of the focal constructs. This suggests that the findings are generalizable over working environments. In this way, we avoided range restriction on the personality dimension of interest as Arthur, Woehr, and Graziano (2001) pointed out regarding the role of personality-based self-selection into specified jobs. The sampling method applied reduces the possibility that the work engagement–conscientiousness–performance relationship may have been artificially restricted by a certain personality type of individuals seeking employment in a specific job. Second, the study applied a cross-sectional design which precludes conclusions about causal relationships between the variables. Therefore, the present findings are tentative until replicated in studies with longitudinal designs. Note, however that as we were interested in whether conscientiousness qualifies the relationship between work engagement and performance, causality was not really our main focus.

At least two strengths of the study should be mentioned. First, this study counts among the first studies to investigate the moderating role of a personality dimension in the relationship between positive work-related experiences and job performance. By doing this, our study underlines the importance of focusing on positive work-related well-being for organizations as we showed that it contributes to organizational outcomes. At the same time, we showed that the conscientiousness characteristic of personality is important in transforming work engagement into favorable behaviors within organizations. Rather than focusing on weak direct effects of personality on performance our findings imply that more complex relationships determine whether motivation will advance performance for every employee. Another positive feature of our study is that we used supervisor ratings of performance, which may be less subject to common method variance than self-reports and which have been found to have higher reliability than ratings of peers and subordinates (Conway & Huffcutt, 1997).

#### 4.3. Practical implications

Our findings suggest that work engagement is beneficial for different dimensions of employee performance but only for a specific type of employees, namely highly conscientious employees. This implies that organizations can profit by stimulating work engagement among their employees by creating engagement-evoking working environments through work (re)design approaches. Earlier research has shown that environments that contain high levels of job resources like autonomy, performance feedback, and opportunities for development enhance employee work engagement in the short and long-term (Bakker & Bal, 2010; Schaufeli, Bakker, & Van Rhenen, 2009). Although all employees may profit from the resourceful work environments as they will be more engaged in their work, only for conscientious employees will the experience of work engagement be translated into higher performance. Conscientious employees do not need any further guidance to direct their attention towards the right tasks and to work hard for them. In contrast, employees who are low in conscientiousness probably need additional guidance through their leaders such that they become motivated to perform well. For instance, transformational leaders broaden and elevate the interests of their employees, by generating awareness and acceptance of the purposes and mission of the group, and by stirring their employees to look beyond their own self-interest for the good of the group (Bass, 1990). According to Bass, such leaders try to inspire their employees with the idea that they may be able to accomplish great things with extra effort (which might be less necessary for conscientious employees), pay attention to differences among their employees, act as mentors to those who need help to grow and develop and stimulate their employees intellectually by showing them new ways of looking at old problems, to teach them how to solve problems.

Our study underscores that work engagements matters for organizations and can be a beneficial experience for employees in terms of the crucial outcome of job performance. Since organizations cannot and should not try to change the personality of employees they can take some measures to ensure that employees are aware of the tasks/activities on which they should focus their attention. Possible measures are to set clear performance targets and to indicate clearly what are employees' primary and secondary tasks (Demerouti, 2006). In this way, employees will be aware of what is important for the organization and their own performance. Such approaches can be used in combination with transformational leadership to make the experience of work engagement beneficial for all employees.

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