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## RESEARCH ARTICLE

# Job Resources and Work Engagement: Optimism as Moderator Among Finnish Managers

Stela Rumenova Salminen\*, Anne Mäkikangas\* and Taru Feldt\*

The aim of the present study was to investigate the moderating role of optimism in the relationship between job resources (organizational climate, job control) and work engagement among Finnish young managers ( $N = 747$ ). Hierarchical regression analyses showed that both job resources and optimism exerted a positive effect on work engagement and its three dimensions of vigor, dedication, and absorption. The moderation results showed that optimism can diminish the negative impact of low job resources on work engagement. These findings provide evidence to the importance of including personal resources in future research conducted on motivational process. Additionally, these findings provide significant suggestions for the utilization of these resources in organizational practice too, i.e., in staff recruitment, retention and development.

**Keywords:** optimism; job resources; work engagement; organizational climate; job control; moderation

The role of personality has been recognized widely in work psychology and particularly in stress-related well-being research (Kahn & Byosiere, 1992; Mäkikangas, Feldt, Kinnunen, & Mauno, 2013), and thus the integration of both job-related and personal resources in predicting well-being has become crucial. Interest in personality characteristics influencing the perception of and reaction to the same environmental features has increased. A recent review of personality differences in occupational well-being (Mäkikangas et al., 2013), however, demonstrates that we still lack full understanding of the role of personality in employee well-being. The emergence of positive psychology (Seligman & Csikszentmihalyi, 2000) has given rise to novel challenges and posed the question of what kind of personality nourishes employees' occupational well-being, including work engagement.

In response to this question, the objective of the present study is to investigate the role of optimism in the relationship between job resources (organizational climate and job control) and work engagement for a sample of Finnish young managers ( $N = 747$ ). Work engagement, as one of the central concepts of occupational well-being in the field of positive occupational psychology, is defined as a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González Romá, & Bakker, 2002). Engaged employees are enthusiastic, dedicated, and fully involved in their work (Bakker, Schaufeli, Leiter, & Taris, 2008).

Job resources on their own have been found to be robust predictors of positive occupational well-being (Bakker & Demerouti, 2007; Mauno, Feldt, Mäkikangas, & Kinnunen, 2010). The inclusion of one of the flagships of positive psychology – optimism – however, brings additional complexity as it is expected, in addition to exerting direct influence, to moderate the effect of the mentioned job resources on the experience of work engagement. Therefore, we aim to investigate whether optimism, as a personal resource, offsets the negative effect of low job resources on work engagement, and in addition, whether optimism facilitates the mobilization of job resources and as a result leads to higher levels of work engagement.

By examining the associations between the selected variables it is possible to shed light on the mechanisms underlying the generation of positive experiences at work. Furthermore, it helps us arrive at a better understanding of how interventions might be able to affect individuals and enhance their well-being. Managers are our target group as their work affects whole teams and even organizations. The more vigorous, dedicated and absorbed managers are in their daily work, the better they are able to execute their tasks and transmit the positive experiences to their subordinates (e.g., Schaufeli & Salanova, 2008).

### **Job Demands-Resources Model (JD-R Model): Motivational Process**

In the current study the association between job resources, optimism and work engagement are approached from the viewpoint of the Job Demands-Resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). According to the model, job resources refer to those physical, psychological, social, or organizational aspects of the job that

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are (a) functional in achieving work goals, (b) reduce job demands and the associated physiological and psychological costs, and (c) stimulate personal growth, learning and development. In contrast, job demands are those physical, psychological, social and organizational features which have been found to be negatively associated with work engagement.

The JD-R model proposes that job demands and resources evoke two different psychological processes that lead to the development of job strain and motivation (Bakker & Demerouti, 2007). The first is health impairment caused by excessive job demands when job resources are scarce, and the second motivational process. Herewith, we focus on the latter one as it bears more relevance to the novel questions posed in the context of positive psychology (Seligman & Csikszentmihalyi, 2000). The motivational process implies that job resources possess a motivational potential leading to high work engagement, low cynicism and excellent performance. It is assumed that job resources play an intrinsic motivational role as they foster employees' growth, learning and development, or an extrinsic one by serving as a means to achieve work goals.

Job resources are considered antecedents of work engagement (Schaufeli & Bakker, 2004). Numerous studies have shown that work engagement is particularly related to the resources available in an organization (Halbesleben, 2010). Job resources such as work autonomy (Bakker, 2005), job results and feedback (Bakker, 2005), colleague support (Xanthopoulou, Bakker, Heuven, Demerouti, & Schaufeli, 2008), work community and manager support (Bakker et al., 2007), daily communication (Bakker & Xanthopoulou, 2009), ethical organizational culture (Huhtala, Feldt, Lämsä, Mauno, & Kinnunen, 2011), organizational climate (Bakker et al., 2007), and job control (Mauno, Kinnunen, & Ruokolainen, 2007) have been found to be positively associated with work engagement.

The job resources in the focus of the present study are job control and organizational climate. *Job control* is particularly important in a manager's work as it determines the extent to which he/she can autonomously decide the timing and method of carrying out tasks. Timing and method control have indeed been the core dimensions measured in studies of job control (see Mauno et al., 2007). Timing control describes the extent to which an employee can choose the order of task completion and the pace of work. Method control refers to the amount of influence an employee can exert on the way a job gets done, on his/her ability to vary his/her work and on the breadth of choice over the methods used to complete the job (Mauno et al., 2007). *Organizational climate*, on the other hand, refers to the milieu in which managerial work is done as well as on the support received from colleagues, and it may have a notable effect on the occupational well-being of young managers at the beginning of their careers. Among the characteristics of a good organizational climate are the relationships and trust between co-workers, good co-operation and work morale, work community's ability to deal with conflict in a constructive manner (Bak-

ker, Hakanen, Demerouti, & Xanthopoulou, 2007) as well as its members' agreement on pivotal issues (Simola & Kinnunen, 2005). Based on this theoretical model, we formulate our first hypothesis:

*Hypothesis 1: Job resources are associated with high work engagement.*

### **Personal Resources and the Role of Optimism**

A noteworthy extension of the JD-R model presented above is the inclusion of personal resources, as they have been recognized, along with job resources, as the most significant determinants of work engagement (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Personal resources are aspects of the self that are linked to resiliency and refer to individuals' sense of their ability to exert control and impact upon their environment successfully (Hobfoll, Johnson, Ennis, & Jackson, 2003). Unlike personality traits, which are relatively fixed and stable over time, personal resources are susceptible to change and are malleable (Luthans & Youssef, 2007; Van den Heuvel, Demerouti, Bakker, & Schaufeli, 2010). Previous studies have shown that personal resources, in addition to being related to stress resilience, may have positive effects on physical and emotional well-being (Scheier & Carver, 1992; Sumi, 1997). It has also been proposed that personal resources may function as moderators in the relationship between environmental factors and organizational outcomes (Judge, Locke, & Durham, 1997; Mäkikangas et al., 2013).

We focus here on the moderating role of optimism in the relationship between job resources and work engagement. Optimism is defined as a generalized expectation of positive experiences and outcomes throughout one's life (Scheier, Carver, & Bridges, 2001). Optimists are more likely to view stressful work situations as challenging rather than threatening. They exhibit both a situational and a dispositional tendency to rely on active, problem-focused coping, and are reportedly more planful in stressful events (Carver, Scheier, & Weintraub, 1989). As a characteristic of personality, optimism is assumed to protect the individual from the negative impact of stress factors (Feldt, Mäkikangas, & Aunola, 2006; Mäkikangas et al., 2013). Optimism could be argued to be a basic requirement in managerial work, as managers are expected to look trustfully to the future, anticipate positive results, and be innovative. Optimistic managers are more likely to treat adversities as an opportunity, and thus preserve their involvement in work. Thus, optimism is expected to influence directly managers' experience of work engagement. Recent studies have accumulated evidence of the association of optimism with work engagement as well as its interaction with job resources. Optimism was found to be strongly associated with work engagement among cancer survivors (Hakanen & Lindbohm, 2008). The effects of optimism have usually been studied in combination with other personal resources such as self-esteem, self-efficacy (see Mäkikangas, Kinnunen, & Feldt, 2004; Xanthopoulou et al., 2007, Xanthopoulou et al., 2009)

as well as meaning in life (see van den Heuvel, Demerouti, Schreurs, Bakker, & Schaufeli, 2009). In this study, we wanted to concentrate solely on the relationship between optimism and work engagement and validate it in a sample of young managers. As there is some previous evidence about the positive relation between these two variables, we therefore hypothesize:

*Hypothesis 2: Optimism is associated with high work engagement.*

### Optimism as a Moderator

Moderating effects of optimism have mainly been examined in the relationship between unfavorable work characteristics and negative outcomes. It has been established that optimism exerts a moderating effect on the relationship between daily hassles and health outcomes (Fry, 1995), hassles and physiological symptoms (Lai, 1996), perceived stress and depression (Sumi, Horie, & Hayakawa, 1997), and psychosocial stressors and psychological well-being (Mäkikangas & Kinnunen, 2003). To our knowledge, there have not been studies investigating a moderating effect of a personal resource in the relationship between favorable work characteristics and positive outcomes. In the light of positive psychology we test a new moderator hypothesis, i.e., whether optimism moderates the relationship between job resources and work engagement. On the one hand, optimism buffers the negative effect of low job resources on work engagement, and on the other, optimism facilitates the mobilization of job resources thus enhancing the experience of work engagement. This hypothesis fits well within the Conservation of Resources (COR) theory (Hobfoll, 1989), according to which different kinds of resources are likely to accumulate and thus lead to more positive outcomes. The possibility of moderating effects of personal resources in the relationship between job resources and work engagement has indeed been recognized earlier (e.g., Xanthopoulos et al., 2007), but not tested empirically. In light of the above theoretical settings, we formulate our third and final hypothesis:

*Hypothesis 3: Optimism moderates the relationship between job resources and work engagement, i.e., high optimism buffers the negative effect of low job resources on work engagement (3a), and increases the positive effect of high job resources on work engagement (3b).*

## Method

### Participants

The present study utilized questionnaire data collected from Finnish young managers ( $N = 747$ ) in 2006. The sample consisted of all members of two Finnish national labor unions (the Union of Salaried Employees and the Union of Professional Engineers) whose professional title referred to management position and who were 35 years or younger. The selection criteria were met by 1904 union members. In Finland, a large majority of employees (67%)

belong to a labor union organized on the basis of industry (Ahtiainen, 2011) and, therefore, this sample is relatively representative of the target group.

Questionnaires were returned by 933 union members, of which 186 respondents were currently not in managerial position or in employment and were thus omitted from the sample. The total number of respondents was 747, which yielded a response rate of 43.4% (747/1718). The average age of the participants in 2006 was 31 years (range 24–35,  $SD = 3.2$ ). A large percent of the participants were men (85.5%). The majority of participants were engineers (67.4%) and the others were technicians (6.1%) or had other professional qualification (24.5%). A small percent (1.9%) had no professional qualifications. Of the participants 8.5% were in upper management, 48% in middle management, and 43.5% in lower management (Hyvönen, Feldt, Salmela-Aro, Kinnunen, & Mäkikangas, 2009).

### Materials and Procedure

All the composite variables were created by averaging their respective terms, and were scored so that a high score represents a higher level of the construct.

Organizational climate was measured with four items concerning the general social climate in the organization and the support from colleagues (Feldt, Hyvönen, Mäkikangas, Kinnunen, & Kokko, 2009; Feldt, Kivimäki, Rantala, & Tolvanen, 2004; Mäkikangas, Feldt, & Kinnunen, 2007): For example, *There is an open and constructive cooperation in the work community*. The subjects responded on a five-point scale (1 = totally disagree, 5 = totally agree). Cronbach's  $\alpha$  for the scale was .85.

Job control was measured with four items indicating the degree of perceived control over timing and method at work (Feldt et al., 2004; Mäkikangas et al., 2007): e.g., *I have control of my work pace* and *I have control of how I do my work*. The subjects responded on a five-point scale (1 = not at all, 5 = very much). Cronbach's  $\alpha$  for the scale was .79.

Optimism was measured using the abbreviated version of The Revised Life Orientation Test developed by Scheier, Carver, and Bridges (1994). It consisted of six items (e.g., *In uncertain times, I usually expect the best; I'm always optimistic about my future*) using a 5-point response scale ranging from 1 = totally disagree to 5 = totally agree. The negatively worded items were recoded so that a higher value corresponded to higher optimism. Cronbach's  $\alpha$  for the scale was .76.

Work engagement was measured with the short version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006) consisting of nine items as the construct validity of the short version (vs. the 17-item scale) has proven to be better with this sample of Finnish young managers (Seppälä et al., 2009). The items reflect the three underlying dimensions of work engagement and were each measured with three items: *vigor* (e.g., *At my work, I feel bursting with energy*), *dedication* (e.g., *My job inspires me*), and *absorption* (e.g., *I get carried away when I am working*). All items of the scale were scored on a seven-

point frequency-based scale, ranging from 1 = never to 7 = always. Cronbach's  $\alpha$  for the whole scale was .93.

Managerial level was used as a demographic variable in the analysis. The variable was recoded so that the six initial levels were grouped into three: 1 = top management and upper managerial level; 2 = upper middle and lower middle management; and 3 = lower management and other. In the analyses managerial level was taken as the background variable.

## Results

Data was analyzed using SPSS 18. **Table 1** presents mean scores, standard deviations, and correlations between the study variables. Organizational climate correlated with work engagement and its dimensions weakly to moderately (between  $r = .20$  and  $r = .34$ ). The strongest correlation was observed with dedication ( $r = .34$ ), and the weakest with absorption ( $r = .20$ ). The correlations between job control and work engagement as well as its dimensions were slightly weaker. Pearson correlation coefficients were in the range between  $r = .17$  (with absorption) and  $r = .28$  (with dedication). Optimism correlated with work engagement and its dimensions weakly to moderately (between  $r = .09$  and  $r = .28$ ), the weakest correlation being observed with absorption ( $r = .09$ ) and the strongest with dedication ( $r = .28$ ).

### Testing of Hypotheses

Hierarchical regression analyses were conducted in order to investigate the main effects of the antecedents on work engagement (Hypothesis 1 and 2) as well as the moderating effect of optimism (Hypothesis 3). More specifically, the analyses were conducted in the following steps: managerial level (step 1) and job resources (step 2) were followed by optimism (step 3) and the interaction terms Organizational Climate x Optimism and Job Control x Optimism (step 4). Before calculating the interaction terms, the job resource variables and optimism were standardized (Aiken & West, 1991). Standardized beta values were used to establish the explanation rate of each variable separately, and the magnitude of  $R^2$  change at each step – to determine the variance explained by the variable(s) in the step. To establish a moderating effect, the standardized beta values of the interaction terms (Organizational Climate x Optimism and Job Control x Optimism) were studied together with the  $R^2$  change of the final step. To confirm support for Hypothesis 3, we needed to show that the beta values of the interaction terms were statistically significant.

### Regression analyses: Main Effects

Standardized beta values from the final step of the regression analyses are presented in **Table 2**. Managerial level effect exerted a statistically significant effect only on absorption. Job resources were associated positively with work engagement, and thus the Hypothesis 1 was supported. More specifically, job control exerted a positive effect on the total score of work engagement as well as its sub-dimensions. The  $\beta$  coefficients varied between 0.09 and 0.17. In addition, organizational climate had a positive effect on work engagement and its dimensions

( $\beta$  coefficients varied between 0.14 and 0.25). In addition, the Hypothesis 2 was also supported as optimism associated positively with work engagement. *Optimism* showed a positive effect on work engagement, vigor and dedication ( $\beta$  coefficients between .16 and .20,  $p < .001$ ), with the exception of absorption, where the effect was not statistically significant. Overall, the whole model including managerial level, job resources and optimism explained 6–20% of the variance of work engagement and its sub-dimensions.

### Optimism as a moderator

Optimism moderated the relationship between job control and a dedication dimension of work engagement (Job Control x Optimism  $\beta = -.096$ ,  $p = .009$ ), thus lending partial support to Hypothesis 3a. The graphical representation of the significant interaction presented in **Figure 1**. We plotted significant interactions following the recommendation made by Aiken and West (1991): we computed separate regression lines for employees with high optimism (1 SD above the mean) and low optimism (1 SD below the mean). The moderator result implies that high optimism buffers the negative effect of low control on dedication. Thus, in situations when employees cannot exert sufficient control over timing and method, the presence of optimism mitigates that effect thus preserving the levels of dedication. However, in an environment where job control is high, the level of optimism does not exert a notable effect, thus disconfirming hypothesis 3b.

## Discussion

This study investigated the association between job resources and optimism and work engagement among large sample of Finnish managers ( $N = 747$ ). In particular, it focused on the main effects of two job resources – organizational climate and job control, and a personal resource – optimism, as predictors of work engagement. In addition, the moderating effect of optimism in the relationship between job resources and work engagement was examined.

### Main and Moderator Effects

A significant main finding of the current study is the establishment of moderation between job control and dedication, which lent partial support to Hypothesis 3a, namely, high optimism buffers the negative effect of low job resources on work engagement. According to the results, optimism was able to ward off the negative effect of low job control on dedication demonstrating that optimism can have a protective function under circumstances of low control. This finding is noteworthy and in line with research pointing to the fact that optimism leads to more effective coping strategies and better well-being (Feldt et al., 2006; Lai, 1995; Mäkikangas et al., 2003; Rielli & Savicki, 2003; Sumi, 1997; Sumi et al., 1997). In an organizational context, this is particularly relevant for middle and lower management, where the extent of control over time and method is occasionally rather small. Remaining dedicated to the work tasks sends positive messages to the work community and in particular to a manager's subordinates.

Instead, the Hypothesis 3b was not supported, namely, in the case where job control was high, optimistic employees did not report particularly higher levels of work engagement than those who were less optimistic. Optimism seems to primarily play a protective role against the negative effect of low job resources. It is possible that support for this hypothesis would have been found if we had investigated the relationship between optimism and so-called challenge stressors, which contain both stressful and challenging aspects (Cavanaugh, Boswell, Roehling, & Boudreau, 2000; LePine, Podsakoff, & LePine, 2005).

The first and second hypotheses, which predicted that job resources and optimism are directly associated with high work engagement, also received wide support, which is in line with existing studies (see Bakker et al., 2007; Xanthopoulou et al., 2008). All these three antecedents demonstrated a significant positive effect on the dependent variables. The only exception was in the case of absorption where optimism did not exert a statistically significant effect. However, taken together with the fact that absorption was the dimension least explained by the present set of antecedents, these findings may be indicative of the different nature of absorption in comparison to the other two dimensions (see also Demerouti et al., 2010).

Altogether, the above finding provides evidence that both job and personal resources are important for the experience of work engagement in consistence with the JD-R model and research findings (Demerouti et al., 2001; for a review of studies, see Salanova, Schaufeli, Xanthopoulou, & Bakker, 2010; for a meta-analysis, see Halbesleben, 2010). Optimism demonstrated the highest main effect on vigor. This may indicate a slight discrepancy with the model proposed by Shirom (2010), which assumes that vigor is predicted primarily by work-based resources. On the other hand, it does not rule out the possibility that personality characteristics may influence the level of vigor, but suggests that these effects are mediated by work-based factors.

#### ***Limitations, Strengths and Avenues for Future Research***

There are some limitations which should be acknowledged when evaluating the results of the study and their generalizability. First, the present sample consisted of young, predominantly male, managers at the beginning of their careers, having a technical or engineering background. Thus, results obtained herewith are valid primarily for this sample which is rather homogenous in terms of gender and age. Second, by including two job resources, the study design utilized only the motivational path of the JD-R model departing from the assumption that job resources are more predictive of work engagement than job demands (Bakker et al., 2007; Mauno et al., 2007; for a meta-analysis see Halbesleben, 2010). However, job resources function in combination with job demands. Thus, both the independent effects of job demands as well as their interaction with job resources remained unexplored in the present study.

The generalizability of findings can be improved in several aspects in future research. First, more diverse sam-

ples, including representatives of different educational backgrounds, of various age groups and with a different length of work experience should be considered so that the effects of demographic variables can be taken into account. The effect of gender also merits further attention when studying the antecedents of work engagement as gender has been found to be related to personality characteristics, and consequently influences the level of psychological well-being (see Mäkikangas et al., 2003; Mauno et al., 2007). Second, job resources should be parallel with job demands as studies point out that work engagement can be experienced even when job demands are high (Bakker et al., 2007; Mauno et al., 2007). Exploring the underlying mechanisms and circumstances under which demands lead to increased engagement is a worthwhile research objective. Third, the inclusion of other personality constructs (self-esteem, self-efficacy, sense of coherence, locus of control) may bring to light additional main and interaction effects on work engagement.

Finally, the moderation effect should be considered with caution. Although the interaction between job control and optimism was statistically significant, the effect was relatively small and explained only 1% of the variance of dedication. On the other hand, it should be taken into account that moderator effects are quite rare and difficult to detect, and even 1% contribution to the total variance merits attention (McClelland & Judd, 1993; Mäkikangas & Kinnunen, 2003; Parkes, 1994).

In all, despite the shortcomings listed above, the current study contributed to previous research in several ways. The inclusion of a personal resource among the set of work engagement antecedents enabled the examination of its moderator effects, which has potential practical implications, for example, in the recruitment, retention and personal development of personnel. This study also complemented the rather scarce research on young managers' well-being, and the findings can be utilized in designing interventions and training programs aimed to enhance this target group's occupational well-being. In future, research should focus on different interactions between job demands, job resources and personal resources that may affect the experience of work engagement.

#### ***Practical Implications and Conclusions***

On the basis of the results obtained in the current study it is justified to conclude that both job resources and optimism are essential in the generation of positive occupational well-being. Furthermore, high optimism can mitigate the adverse effect of low job control on the experience of work engagement or a dimension thereof. Although it is difficult to draw extensive conclusions about the additional value of non-work characteristics in the JD-R model, the study provided evidence of the importance of personal resources to the motivational process, and demonstrated that their incorporation increased the overall predictive power of the model. The consideration of personality characteristics is worthwhile as individuals perceive and react to the environment in different ways, which may lead to different experiences of psychological well-being.

The practical implications of this finding may benefit organizations: by encouraging optimism and reinforcing it as a personal resource, organizations are able to counterbalance the periods when job control cannot be exerted in full measure. Enhancing employees' optimism may, for example, be achieved through specific training techniques such as goal clarification and personal development plans (Luthans, Avey, Avolio, Norman, & Combs, 2006), which help employees preserve their engagement even in the face of low job resources. The fact that optimism may be influenced by training provides evidence that it can be construed as a state, which is malleable and open to development (Luthans, Avey, Avolio, & Peterson,

2010), and not just a fixed dispositional trait as suggested in the early work of Scheier and Carver (1985). From a human resource management perspective, hiring and retaining optimistic employees may turn into a valuable reserve in times of crises, when autonomy is restricted by external factors (e.g., economic crisis, periods of restructuring, mergers and acquisitions). The findings of this study highlight the need for organizations to understand the mechanisms underlying employees' positive experiences and protecting them from the negative effects of adversities, because this understanding leads to consistent well-being in the workforce and improved organizational outcomes.

## Appendix A

Variables	M	SD	1	2	3	4	5	6	7
1. Managerial level (1 = high, 3 = low)									
2. Organizational climate	3.56	0.77	-.19						
3. Job control	3.92	0.69	-.22	.33					
4. Optimism	3.87	0.56	-.04	.18	.22				
5. Vigor	5.58	0.93	-.02	.27	.21	.26			
6. Dedication	5.63	1.13	-.05	.34	.28	.28	.79		
7. Absorption	5.08	1.21	-.14	.20	.17	.09	.64	.62	
8. Work engagement	5.42	0.97	-.08	.30	.24	.22	.90	.89	.88

Note. If  $r = |0.10-0.14|$ ,  $p < .05$ , if  $r = |0.15-0.18|$ ,  $p < .01$ , if  $r \geq |0.19|$ ,  $p < .001$ . Means and standard deviations are for the total sample.

**Table 1:** Means and standard deviations, and Pearson correlations between the study variables.

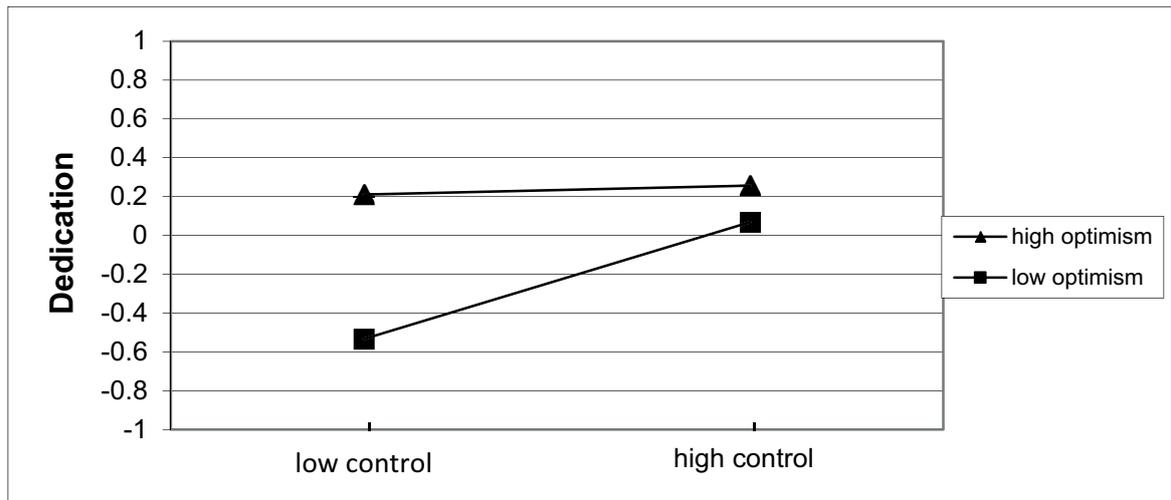
## Appendix B

Predictors	Work engagement	Vigor	Dedication	Absorption
<i>Step 1. Background variable</i>				
1. Managerial level (1 = high, 3 = low)	-.01	.05	.05	-.09 <sup>†</sup>
$\Delta R^2$	.01 <sup>†</sup>	.00	.00	.02 <sup>***</sup>
<i>Step 2. Job resources</i>				
2. Organizational climate	.21 <sup>***</sup>	.18 <sup>***</sup>	.25 <sup>***</sup>	.14 <sup>***</sup>
3. Job control	.14 <sup>***</sup>	.12 <sup>**</sup>	.17 <sup>***</sup>	.09 <sup>†</sup>
$\Delta R^2$	.11 <sup>***</sup>	.09 <sup>***</sup>	.15 <sup>***</sup>	.04 <sup>***</sup>
<i>Step 3. Personal resource</i>				
4. Optimism	.16 <sup>***</sup>	.20 <sup>***</sup>	.20 <sup>***</sup>	.04
$\Delta R^2$	.02 <sup>***</sup>	.04 <sup>***</sup>	.04 <sup>***</sup>	.00
<i>Step 4. Interaction terms</i>				
5. Org. Climate x Optimism	.01	.02	.02	-.02
6. Job control x Optimism	-.07	-.07	.10 <sup>**</sup>	-.04
$\Delta R^2$	.01	.00	.01 <sup>†</sup>	.00
$R^2$	.14	.13	.20 <sup>†</sup>	.06

Note.  $\beta$ , standardized beta coefficients from the final step of the models.  $\Delta R^2$ , change in explanation rate in each step.  $R^2$ , explanation rate. <sup>†</sup> $p < .05$ ; <sup>\*\*</sup> $p < .01$ ; <sup>\*\*\*</sup> $p < .001$ .

**Table 2:** Hierarchical Regression Analysis.

## Appendix C



**Figure 1:** Optimism as a moderator in the relationship between job control and dedication.

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