Work Engagement and Performance: Daily fluctuations



Soares, C[2]; Veloso, A[2].; Ferreira-Oliveira, A.T.[34] & Silva, I[2].

מחוברות לעבודה וביצועי העובד : תנודות יומיות

מערכת היחסים שמקיימים עובדים עם מקום עבודתם נמצאת כל הזמן בתהליך התפתחות. הגישה של חוקרים ליחסים אלה גם היא השתנתה בשנים האחרונות. החוקרים פנו לחקר ההיבטים החיוביים ביחס לעבודה כמחוברות, מעורבות והשקעה ובחנו את השפעותיהם על ביצועי העובדים. עובדים מחוברים נהנים יותר מעבודתם ועקב כך משקיעים יותר בעבודתם, תוך גילוי מוטיבציה אינטרינזית כלפי המטלות שהם מבצעים. המטרה העיקרית של ניתוח האירוע המוצג במאמר הנוכחי לנתח את הקשר בין מחוברות העובדים לביצועיהם. 23 עובדי בית חולים השיבו לשאלון שהועבר להם פעמיים ביום במטרה להעריך את מידת המחוברות שלהם לעבודה (UWES-9) ואת ביצועיהם (באמצעות מדד ביצועי עובדים של גריפין ומייסון - Griffin and Mason). תוצאות המחקר מצביעות על קשר חיובי בין מידת המחוברות לביצועי העובדים. למרות שנמצא שמחוברות העובדים לא השתנתה במהלך יום העבודה מחברי המאמר מצאו שמידת ההישאבות (Absorption), שהיא אחד משלושת מרכיבי המחוברות- הלכה ופחתה במהלך יום העבודה.

ABSTRACT

The relationship that employees develop with their work is evolving one. Researchers approach to it has also been changing, currently exploring its positive aspects such as *engagement* and *flow* and its impact on employee performance. Engaged employees enjoy their work and because of that work more, revealing an intrinsic motivation towards their tasks.

The main purpose of this case study is to explore *work engagement*, specifically if there are any fluctuations of *work engagement* during one workday. We also analysed the relationship between work engagement and employee performance.

Twenty-three employees of a hospital answered a questionnaire twice a day with the purpose of evaluating their *work engagement* (UWES-9) and *performance* (Griffin and Mason performance scale).

The results indicate a positive relationship between *work engagement* and *performance*. Although employee work engagement had not changed during the day, we found

[2] University of Minho; Portucalense University, Portuga.

[3] School of Economics and Management of the University of Porto, Porto.

[4] Technology and Management School, Viana do Castelo Polytechnic Institute;

that *absorption*, one of the three dimensions of *work engagement*, had diminished during the day.

INTRODUCTION

The relationship that employees develop with their work is always evolving. Our approach to this relationship has also been evolving, currently exploring its positive aspects such as *engagement* and *flow*.

Engagement is an intense, positive and rewarding cognitive-affective state for the individual (Schaufeli, Salanova, González-Romá & Bakker, 2002), "characterized by energy, involvement and efficacy" (Schaufeli, 2012, p. 4) with the work they perform.

Initially researchers considered *engagement* to be opposite of *burnout*. The latter was characterized by "low levels of activation and pleasure" while *engagement* was characterized by "high levels of activation and pleasure" (Maslach, Schaufeli & Leiter, 2001, p.417).

Currently, *work engagement* is considered to be composed of three different components: vigour, dedication and absorption. Vigour is associated with high levels of energy and mental resilience as well with the individual disposition to struggle and persist with the task at hand; dedication indicates a sense of meaningfulness, enthusiasm, pride, inspiration and challenge; absorption translates the immersion of the individual with the work itself, with the difficulties of being away from it, experiencing a high level of focus and the sense that time is running out (Schaufeli, Salanova, González-Romá & Bakker, 2002).

In this study, work engagement means "a positive and rewarding state of mind, related to work, which is characterized by vigour, dedication and absorption, and means a "persistent and incisive cognitive - afective state of mind" (Schaufeli, Salanova, Gonzáles-Romá & Bakker, 2002, p. 74).

Work engagement and performance

Engaged employees enjoy their work and because of that work more, revealing an intrinsic motivation towards their tasks (Shimazu & Schaufeli, 2009; Beek, Hu, Schaufeli, Taris & Schreurs, 2012).

Several studies found positive relationships between work engagement and employee performance (Rich, Lepine, & Crawford, 2010; Shimazu & Schaufeli, 2009; Shimazu, Schaufeli, Kubota & Kawakami, 2012). Employees who are work engaged are more focused on their job tasks and involved with organizational issues (Rich, Lepine, & Crawford, 2010), present more pro-active behaviours (Salanova & Schaufeli, 2008) and are more efficient at performing their tasks (Christian, Garza & Slaughter, 2011).

Shimazu & Schaufeli (2009) point out four characteristics of *engaged* employees that explain their better performance: 1) engaged employees feel more often positive emotions; 2) present better health; 3) are able to develop their own personnel resources and 4) share their *engagement* with others.

For the purpose of this study, the concept of *performance* is based on the Griffin, Neal & Parker (2007) *model of positive work role behaviours*. This model classifies different dimensions of work role performance considering the level and type of behaviours that are presented, and the final impact on employee efficiency. According to the authors, there are three different levels of employee work role behaviours: individual, team and organization, expressed by three different types: Adaptivity, proactivity and proficiency. The latter, proficiency, refers to employee's ability to fulfil wn requirements of job tasks efficiently while adaptivity and proactivity are behaviours oriented toward change. Adaptivity is the ability to accommodate and respond to change and proactivity refers to the employee initiative to change himself or the environment (Griffin, Parker & Mason, 2010).

Work engagement flutuactions

Work engagement is a dynamic state and can change over time (Sonnentag, 2011). Several researchers analysed the period-of-time in which *work engagemen*t levels change. The variations can occur, for instance, in an intense period-of-time with an impact on work performance. It may be daily or weekly (Bakker & Bal, 2010). According to Sonnentag (2003), work engagement level is higher when employees feel they have fully recovered during their leisure time, with positive impact on proactivity behaviours. Recent studies also show day-to-day fluctuations in *work engagement* levels (Kuhnel, Sonnentag, & Bledow, 2011; Xanthopoulou, Bakker, Heuven, Demerouti, & Schaufeli, 2008 cit. in Sonnentag, 2011). However, some authors suggest that *work engagement* can fluctuate during one single day, considering the circadian rhythm or diminishing as the working day ends and fatigue sets in. Others posit that the fluctuation can be from one moment to the next, similar to performance variation (Beal, Weiss, Barros & MacDermid, 2005).

In sum, it seems of importance to explore the relationships between *work engagement* and performance as well the possible fluctuations of engagement within a working day as these variables impact employees and organization's success. This study seeks to analyse *work engagement* and its fluctuations during a working day, adding some novelty: (1) a smaller time period of working engagement fluctuation analysis and (2) a broader concept of performance as includes proficiency, adaptability and proactivity.

OBJECTIVES

The main objective of this study is to determine if there are any variations on work engagement and employee performance levels during one working day. Also, we seek to analyse the relationship between work engagement and performance.

METHODOLOGY

The case study is exploratory in nature, as our intention is to explore and deepen the knowledge concerning work engagement fluctuations on a daily basis. Also, it is intended to determine if there is any relationship between performance and work engagement.

The case study was carried out in a state hospital with 1923 employees. The sample was recruited based on word of mouth, from one source to another – snowball effect. It included 23 employees, 21 (91,3%) of which were women. The average as was was 43.39 years old (SD=8) varying between 29 and 59 years old; 52.2 per cent (n=12) held at least a college degree; 34.8 per cent (n=8) were employed at the hospital between 6 and 10 years, 26.,1 per cent (n=6) more than 20 years, 21.7 per cent (n=5) between 11 and 20 years; 13 per cent (n=3) between 1 and 5 years and one at least, 1 year.

Procedure

We explained to each respondent the purpose of the study and guaranteed confidentiality. They were asked to sign an informed consent document and to fill out two paper-and-pencil questionnaires. The first questionnaire was to be answered in the beginning of the working day and the second one at the end of the day, just before leaving work. Altogether, the questionnaires demanded less than 20 minutes to be answered.

Instruments

Work Engagement. Work engagement was assessed with the reduced Portuguese version of the Utrecht Work Engagement Scale (UWES-9, Chambel & Farina, 2015) with 9 items. The UWES-9 included the three dimensions of work engagement: *Vigor* (e.g. At my work, I feel full of energy); *Dedication* (e.g. I am enthusiastic about my work) and *Absorption* (e.g. I am happy when I work intensely). All items were scored on a 7-point frequency rating scale form 0- Never to 6 - Every day. A total score was obtained for each subscale, *Vigor*; *Absorption* and *Dedication*, adding the answer of all subscale items and also a total score for *Work Engagement*.

Job Performance. Job Performance was assessed with the Portuguese version of Griffin, Parker and Mason Performance Scale (Marques-Quinteiro & Curral, 2012). This scale features 27 items that assess Proficiency (e.g. Performed well the key tasks of his/her job); adaptability (e.g. Adapted well to the changes of its job key tasks) and proactivity (e.g. Started to use better ways to perform his/her job key tasks.) All items were scored on a 5-point frequency rating scale form 1- Never to 5 - Always. A total score was obtained for each subscale, *Proficiency, Adaptability* and *Proactivity*.

RESULTS

Results are presented in three parts: the first refers to the descriptive analysis of data; the second part is dedicated to the correlations between work engagement and performance and the third part addresses the analysis of differences between the two temporal moments.

There were no questionnaires with more than 10% missing values of the responses, so all were included in the analysis. The missing values found were replaced by the means of the answer to the respective item.

Prior to the analysis of correlations and differences between the two temporal moments, an analysis to the normality of the sample distribution was made. The normality assumptions were not found. Also, given the size of the sample (N=23) it was decided to use non-parametric tests (Spearman Correlations and Wilcoxon Test).

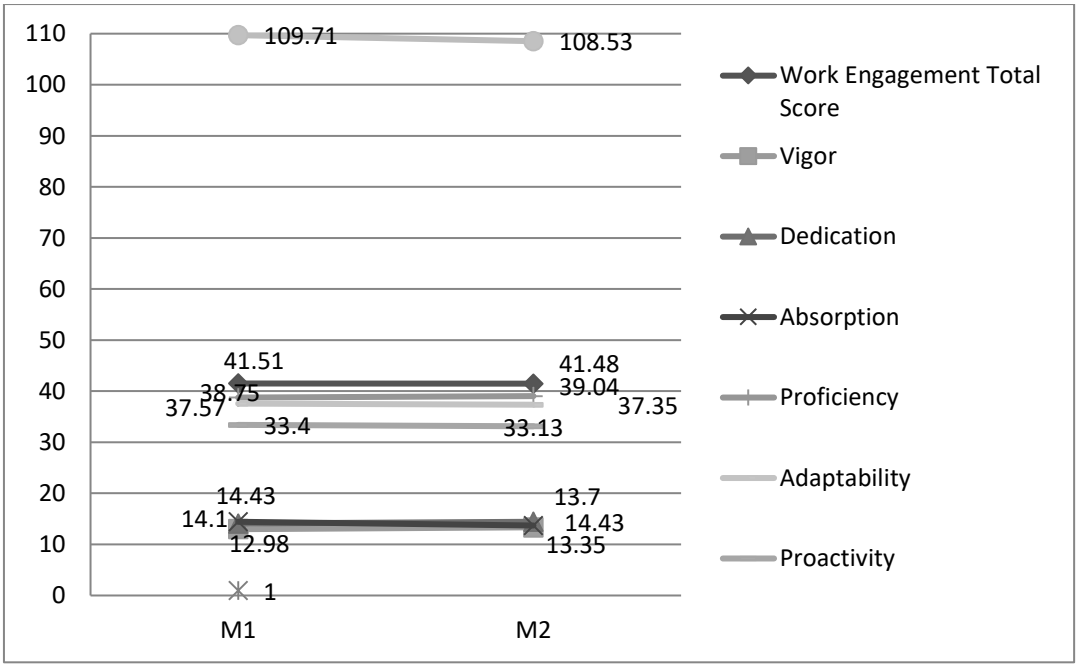
Table 1: Mean and standard deviation of the variables at the two temporal moments

	Moment 1 **M (SD)** ***n=23***	Moment 2 **M (SD)** ***n=23***
Work Engagement Total Score	41.51 (8.02)	41.48 (7.64)
Vigour	12.98 (3.80)	13.35 (3.33)
Dedication	14.10 (2.83)	14.43 (2.60)
Absorption	14.43 (2.24)	13.70 (2.70)
Performance Total Score	109.71 (10.32)	108.53 (11.63)
Proficiency	38.75 (3.15)	39.04 (3.66)
Adaptability	37.57 (4.63)	37.35 (5.09)
Proactivity	33.40 (4.04)	33.13 (5.09)

The total score of *work engagement* (see fig.1), indicates a slight decrease from moment one (M1) to moment two (M2). However, analysing the three different dimensions in particular, an increase of vigor and dedication from M1 to M2 and a decrease only at the level of absorption are observed, indicating a bigger change.

The total score of performance slightly decreases, like two of its dimensions (adaptability and proactivity), while the dimension proficiency slightly increases.

Figure 1: Fluctuation of the means of the variables, at M1 to M2



To explore the relations between the variables, we proceeded to the analysis of correlations through the Spearman Correlation Coefficient. The analysis showed that *work*

engagement total score is positively related with the total score of *performance*, in the two moments.

Table 2: Correlations at M1

	1	2	3	4	5	6	7	8
1. Work Engagement Total Score	-					.40†	.45*	.43*
2. Vigor		-				.27	.45*	.47*
3. Dedication			-			.33	.35	.23
4. Absorption				-		.39†	.36†	.28
5. Performance Total Score	.53*	.48*	.37†	.45*	-			
6. Proficiency	.40†	.27	.33	.39†		-		
7. Adaptability	.45*	.45*	.35	.36†			-	
8. Proactivity	.43*	.47*	.23	.28				-

Notes. †p<.1; *p<.05

Work engagement and *performance* are positively related (*rs*=.53, p=.01). *Work engagement* total score is positively related with adaptability (*rs*=.45, p=.03) and with proactivity (*rs*=.43, p=.04). There's also a positive correlation, marginally significant, with proficiency (*rs*=.40, p=.06). Also, vigor was positively related to adaptability (*rs*=.45, p=.03) and with proactivity (*rs*=.47, p=.02). Absorption showed positive correlations, marginally significant, with proficiency (*rs*=.38, p=.07) and adaptability (*rs*=.36, p=.09). *Performance* total score is positively related to vigor (*rs*=.48, p=.02) and with absorption (*rs*=.45, p=.03), while the correlation with dedication is marginally significant (*rs*=.37, p=.08).

Table 3: Correlations at M2

	1	2	3	4	5	6	7	8
1. Work Engagement Total Score	-					.41†	.62**	.30
2. Vigor		-				.44**	.65**	.37†
3. Dedication			-			.19	.42†	-.004
4. Absorption				-		.38†	.55**	.41†
5. Performance Total Score	.57**	.63**	.23	.55**	_			
6. Proficiency	.41	.44**	.19	.38		-		
7. Adaptability	.62**	.65**	.42*	.55**			-	
8. Proactivity	.30	.37	-.004	.41				-

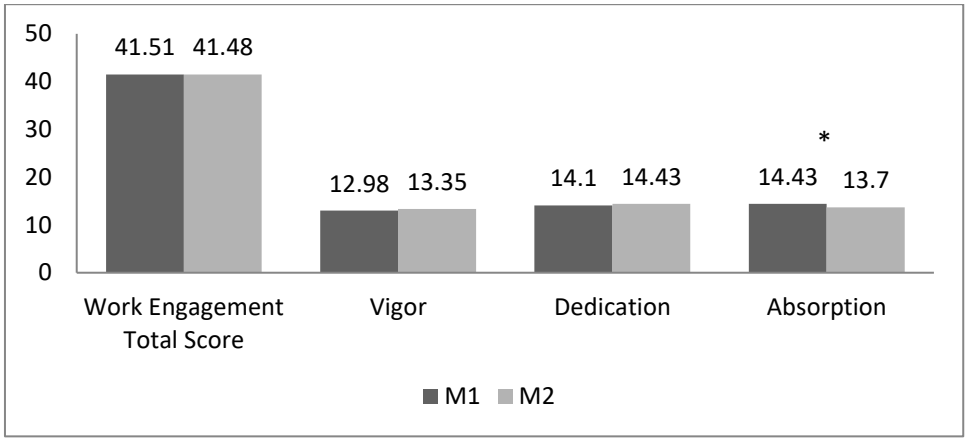
Notes. †p<.1; *p<.05; **p<.01

Work engagement total score and performance total score show to be positively related (r_s=.57, p=.005). *Work engagement* total score presents a positive correlation, marginally significant, with proficiency (r_s=.41, p=.05), and is also positively related with adaptability (r_s=.62, p=.03). Vigor showed to be positively related to proficiency (r_s=.44, p=.04), adaptability (*rs*=.65, p=.001) and marginally significant correlated with proactivity (r_s=.37, p=.08). Dedication and adaptability related positively, with a marginally significance (r_s=.42, p=.05). Absorption is positively related to adaptability (r_s=.55, p=.007) and shows also positive

correlations, marginally significant, with proficiency (r_s=.38, p=.08) and proactivity (r_s=.41, p=.05). Performance total score presents positive relations with the two dimensions of work engagement, being positively related with vigor (r_s=.63, p=.001) and with absorption (rs=.55, p=.007).

Our intention was to explore if there any fluctuations in work engagement and performance during the workday. We conducted an analysis of differences between M1 – the beginning of the day – and M2 – the end of the day – using the Wilcoxon Test. The analysis showed significant differences at the level of absorption and marginally significant differences at the level of proactivity.

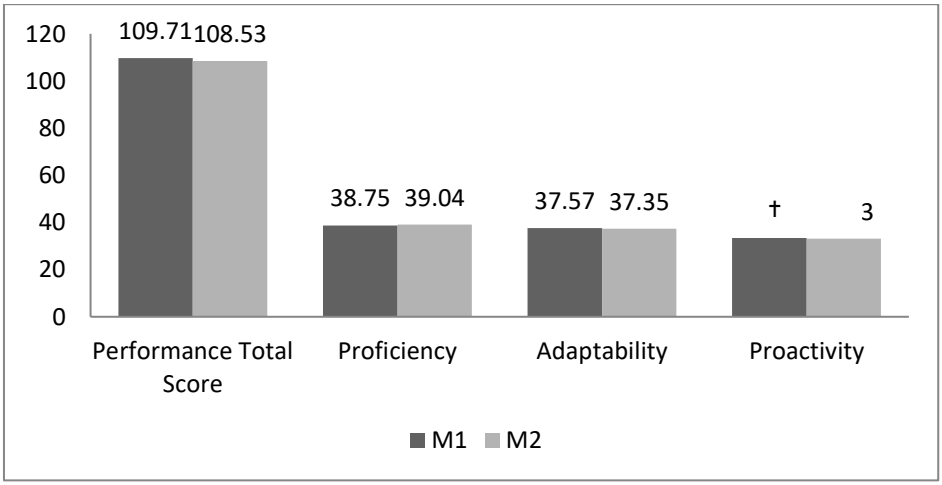
Figure 2: Comparison of the means of work engagement and its dimensions at the two temporal moments



Note. *p<.05

There are significant differences ate the level of absorption, between M1 and M2, Z = -2.330, p=.02. The level of absorption significantly decreases from the beginning of the day to the end of the day.

Figure 3: Comparison of the means of the performance and its dimensions at the two temporal moments



Note. †p<.1

There are significant differences at the level of proactivity, between M1 to M2, Z = -1.817, p =.069. Proactivity is lower at the end of the day comparing to the beginning.

DISCUSSION AND CONCLUSION

This study's main objective is to evaluate if there are any variations on *work engagement* and employee *performance* levels, all through one working day. Also, it seeks to analyse the relationship between *work engagement* and *performance*.

The results of this study showed a positive relationship between *work engagement* (total score) and the three dimensions of performance, at moment one, as expected following the research results reported by Shimazu & Schaufeli (2009) and Shimazu, Schaufeli, Kubota & Kawakami (2012). This relationship occurs, according to Shimazu & Schaufeli (2009), because employees with higher work engagement feel positive emotions more often and are healthier. They also show better ability to use and develop their own resources and often share their engagement with others.

At time two, this relationship changes and the results show no relationship between work engagement and proactivity, a dimension of work performance. One possible reason for this is that employees at the end of a working day may feel too tired to be proactive or there is no need for it (proactivity).

At both times, there is a marginally significant relationship between *work engagement* and proficiency, another dimension of performance. One possible explanation for this result is, according to Griffin, Parker and Mason (2010), that engaged employees are more proficient performing their job tasks and therefore may feel no satisfaction with themselves because expecting high performance they continuously challenge themselves to reach higher levels of performance. This may explain a poor evaluation of themselves.

Analysing the differences between the two moments of the study, there is no variation of *work engagement* (total score) at the beginning and the end of the working day. Although, some variations had been found from one day to another (Kuhnel, Sonnentag, & Bledow, 2011; Xanthopoulou, Bakker, Heuven, Demerouti, & Schaufeli, 2008 cit. in Sonnentag, 2011) and also weekly (Bakker e Bal 2010), there was no found significant variation considering the period of one working day, as Sonnentag (2011) had hypothesized.

We did not any variation on vigour considering the two moments of evaluation. This result can be explained since vigour is related to the individual and not time. Vigor can be expressed by high levels of energy and mental resilience as well with the individual disposition to persist and make an effort towards work (Schaufeli, Salanova, González-Romá & Bakker, 2002). Also, as the employee is performing his/her own task is feeling more energy by its results and contrary to what is expected, this experience feeds his/her own perceptions of vigour.

In much the same way, dedication had no significant change with time. Dedication, can be understood as a constant dimension, therefore, not changing during a workday, because, as Schaufeli, Salanova, González-Romá & Bakker (2002) posit it is related to what work means to individuals and how they feel about it: significance; enthusiasm, inspiration, pride and challenge.

Absorption, on the other hand, revealed some variations during the working day. Employees found it more difficult to be focused and immersed in performing their tasks at the same level through an 8-hours workday. One can expect that the nature of tasks can be differentiated through time, implying different levels of absorption. However, this variation should be explored on future research: is individual's absorption diminishing because one anticipates the end of the workday and the return to their private life or because the content of the task is changing? Or are employees feeling physically or mentally tired?

The levels of proficiency had not changed significantly, during the workday, according to employees' perceptions. As this dimension intends to measure the processes that employees adopt to reach efficiency, it was expected that employees maintain the perception of their own proficiency during all day.

The comparison of adaptability and proactivity means at the two temporal moments showed the decreased of the level of these two dimensions of performance. One possible explanation for these results is related to the nature of the work and also to the context of this organization: a state hospital. Proactivity and adaptability are behaviours oriented to change (Griffin, Parker & Mason, 2010). Proactivity is the capability of the employee to act introducing changes in him/herself or on the environment. The latter refers to the employee capability to answer and integrates changes. In organizations, change is important but does not demand that employees constantly change their own behaviours. This is truer in organizations such as health services where employees have to follow rigid guidelines, which do not provide opportunities to change.

There are some limitations that should be controlled in future research. First, the sample involved only one organization with an important impact on the diversity of the sample. Future studies should include several and different organizations, increasing the sample dimension and the number of participants. Also, the time of the day when participants answer the questionnaire should be controlled. In this study, participants were asked to answer to the questionnaires on specific times during the workday, but there was no effective control by the researchers. In future studies, it is important to guarantee that all participants will answer the questionnaires at the same period of time.

Data were collected in two-time periods - the beginning and the end of a workday. However, it would also be interesting to analyse if there are any fluctuations of *work engagement* through the day: for instance, can the level of *work engagement* decrease in the middle of the day and return to high levels at the end? Are the fluctuations due to the nature of the task? Can the nature of the task that the employee is performing when he/she is asked to fill the inquiry influence the perceptions of work engagement? This variable should also be controlled in future research.

The results of this research contribute to the understanding how *work engagement* changes during small periods of time. Considering the importance of understanding how employees work and when are more productive for organizations, and the human resource management function, more research involving larger samples and different contexts, is needed.

REFERENCES

Bakker, A. B. & Bal, P. M. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology*, 83, 189–206.

Beal, D. J., Weiss, H. M., Barros E. & MacDermid, S. M. (2005). An Episodic Process Model of Affective Influences on Performance. *Journal of Applied Psychology*, 90 (6), 1054–1068.

Beek, I. v., Hu, Q., Schaufeli, W. B., Taris, T. W., & Schreurs, B. H. (2012). For Fun, Love, or Money: What Drives Workaholic, Engaged, and Burned-Out Employees at Work? *Applied Psychology , 61 (1)*, 30-55.

Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job Engagement: Antecedents and Effects on Job Performance. *Academy of Management Journal , 53 (3)*, 617–635.

Schaufeli, W. B. (2012). Work Engagement. What Do We Know and Where Do We Go? . *Romanian Journal of Applied Psychology , 14*, 3-10.

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The Measurement of Engagement and Burnout: a Two Sample Confirmatory Factor Analytic Approach. *Journal of Happiness Studies , 3*, 71–92.

Schaufeli, W. B., Taris, T. W., & Rhenen, W. v. (2008). Workaholism, Burnout, and Work Engagement: Three of a Kind or Three Different Kinds of Employee Well-Being? *Apllied Psychology , 57 (2)*, 173-203.

Shimazu, A., & Schaufeli, W. B. (2009). Is Workaholism Good or Bad for Employee Well-Being? The Distinctiveness of Workaholism and Work Engagement among Japanese Employees. *Industrial Health , 47*, 495-502.

Shimazu, A., Schaufeli, W. B., Kubota, K., & Kawakami, N. (2012). Do Workaholism and Work Engagement Predict Employee Well-Being and Performance in Opposite Directions? *ndustrial Health , 50*, 316-321.

Simpson, M. R. (2009). Engagement at work: A review of the literature. *International Journal of Nursing Studies , 46*, 1012–1024.

Sonnentag, S. (2003). Recovery, Work Engagement, and Proactive Behavior: A New Look at the Interface Between Nonwork and Work. *Journal of Applied Psychology*, 88 (3), 518–528.

Sonnentag, S. (2011). Research on work engagement is well and alive. *European Journal of Work and Organizational Psychology,* 20 (1), 29-38.

חזרה לתוכן העניינים