Towards a development of a Mathematical model of workaholism

Mario Del Líbano[*], Susana Llorens[*],
Marisa Salanova[*], and Wilmar Schaufeli[‡]

(*) Universitat Jaume I,

Departamento de Psicologa Evolutiva, Educativa, Social y Metodología;

Campus Riu Sec s/n, 12071 Castellón, Spain,

(‡) Utrecht University,

Department of Social and Organizational Psychology, Research Institute Psychology & Health,

P.O Box 80.140, 3508 TC Utrecht, The Netherlands

October 10, 2010

1 Introduction

Although workaholism is a common topic in the popular press and it is a concept with special relevance in Work and Organizational Psychology, scientific understanding of it is still quite limited. The concept can be generally considered as a negative psychological state characterized by two main dimensions: working excessively and working compulsively (Del Líbano, Llorens, Salanova, & Schaufeli, 2010). Many studies have tried to establish a theoretical model in order to explain the workaholism antecedents, but any of them have been successful. In all these studies the antecedents included are not derived in a systematically way, but it seems rather haphazard, whereby workaholism is often differently operationalized. With the present preliminary study we have the aim to begin the study of workaholism in a mathematical way analysing some relevant antecedents, i.e., work self-efficacy, job autonomy, emotional competence and mental competence.

Self-efficacy can be defined as the beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1997), and according to the Resources, Experiences and Demands (RED) model (Salanova, Cifre, Llorens, & Martnez, 2007), job autonomy, emotional compentence and mental competence are related to experiences at work in a different way depending on self-efficacy. Thus employees perceive more or less personal and job resources depending on their levels of self-efficacy.

In order to achieve our aim we propose two hypotheses. The first one proposes that work self-efficay will be positively related to workaholism, whereas the second one proposes that job autonomy, and mental and emotional competence will mediate the relationship between work self-efficacy and workaholism.

2 Method

Participants and procedure

The sample consisted of 386 university administrative staff. Employees had work experience ranging from 1 to 45 years and the mean number of years worked was 14 (SD = 7.2). They answered an on-line questionnaire drawn up in order to implement an evaluation of psychosocial risks. Firstly, we met with the stakeholders of employees in order to explain the phases of the evaluation (e.g., objectives, procedure, diagnosis, etc.). Secondly, we generated several user-identifications and passwords that were confidentially and anonymously distributed among employees. Finally, we informed the stakeholders of the results by means of a professional report and they explained the main conclusions to the rest of the employees. *Measures*

Work self-efficacy. We measured work self-efficacy using 4 items from RED.es (Salanova et al., 2007). An example of the item is: '*I can do my job well although I have to solve difficult problems*'. Workers were asked to indicate the extent to which they agreed with each sentence on a seven-point rating scale ranging from 0 ('never') to 6 ('always/everyday')

Autonomy. We measured autonomy using 4 items from RED.es. An example of the item is: '*I can do my work tasks as I consider that it's better*?. Scores ranged from 0 ('never') to 6 ('always/everyday').

Mental competence. We measured mental competence using 3 items from RED.es. An example of the item is: '*In my job, I can work with many information and data*'.

Emotional competence. We measured emotional competence using 4 items from RED.es. An example of the item is: '*In my job, I can solve problems with the people in an objective way*'.

Workaholism. We measured workaholism by the short Spanish version (10 items) (Del Lbano, et al., 2010) of the DUWAS (DUtch Work Addiction Scale; Schaufeli, Shimazu, & Taris, 2009), which includes two dimensions: working excessively (5 items; e.g., '*I stay busy and keep my irons in the fire*?) and working compulsively (5 items; e.g., '*I often feel that there's something inside me that drives me to work hard*'). Scores ranged from 1 ('almost never') to 4 ('almost always').

Data analyses Firstly, we computed the internal consistencies (Cronbach's alpha), descriptive analyses, and intercorrelations among the variables with the PASW 18.0 program. Secondly, we computed Harman's single factor test with Confirmatory Factor Analyses (CFA) (e.g. Iverson & Maguire, 2000; cf. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) using the AMOS (Analysis of MOment Structures) software package (v. 18.0) for the study variables in order to test for bias due to common method variance. Thirdly, the AMOS was employed to implement Structural Equation Modeling (SEM) methods by using Maximum
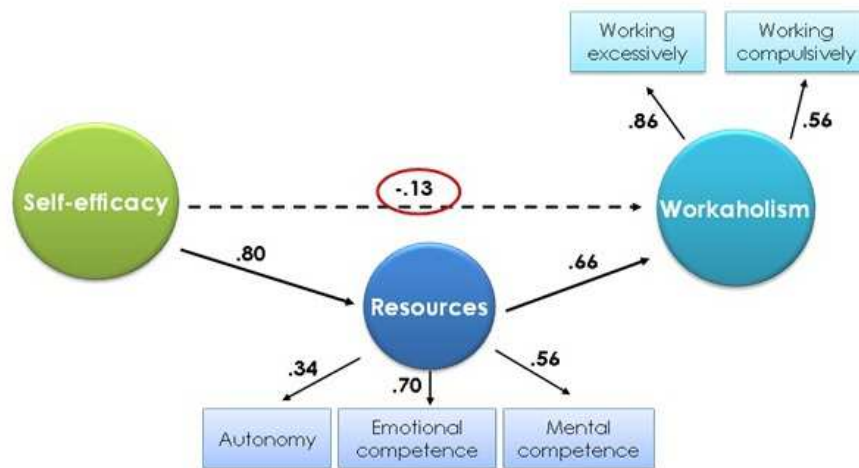
Figure 1

Model 4 (N = 386)

Figure 1:

Likelihood Estimation methods to establish the relationships between the model variables (Byrne, 2001).

3   Results

On the one hand, Table 1 displays the results of the descriptive analyses; that is, means, standard deviations, internal consistencies (Cronbach's alpha) and intercorrelations of the scales. All alphas meet the .70 criterion (Nunnally & Bernstein, 1994), As expected, the pattern of correlations shows that variables correlate significantly with each other.

On the other hand, four different structural models were fitted to the data to test the weight of the antecedents considered. Following the Baron and Kenny (1986) methodology, first (M1) we tested the direct relationship between self-efficacy and workaholism. The model fitted well to the data, the relationship between both variables was positive and significant.In the second model (M2) we tested the relationship between self-efficacy and autonomy, mental competence and emotional competence, and the model also fitted well to the data. Subsequently, we tested the third model (M3) in which autonomy, mental competence and emotional competence fully mediated workaholism. The model also fitted well to the data, with all the relationships positive and siginificant. Finally, as in the fourth model (M4) the direct relationship between self-efficacy and workaholism was not significant, we can conclude that, as we expected, autonomy, mental competence and emo-

Table 1

Means (M), Standard Deviations (SD), Internal Consistencies (Cronbach's α on the diagonal) and zero-order correlations in the sample (N = 386).

Dimension	University Staff		Correlations					
	M	SD	(1)	(2)	(3)	(4)	(5)	(6)
1. Self-efficacy	4.48	.91	.94	.28**	.45**	.53**	.20**	.04
2. Job autonomy	4.51	1.01	-	.86	.18**	.26**	.06	-.17**
3. Mental competence	4.59	0.85	-	-	.75	.38**	.15**	.11*
4. Emotional competence	4.07	1.09	-	-	-	.87	.32**	.09
5. Working Excessively	2.28	.62	-	-	-	-	.73	.50**
6. Working Compulsively	3.6	1.8	-	-	-	-	-	.74

Notes. * $p < .05$, ** $p < .01$

Figure 2: Table 1

Table 2

Structural Equation models (Baron & Kenny, 1986) (N = 386)

Model	χ^2	df	GFI	RMSEA	TLI	CFI
1. M1	9.89	3	.99	.07	.98	.99
2. M2	4.65	5	.99	.00	.99	.99
3. M3	56.01	14	.96	.08	.93	.95
4. M4	51.31	13	.96	.09	.93	.96

Notes. χ^2 = Chi-square; df = degrees of freedom; GFI = Goodness-of-Fit Index; RMSEA = Root Mean Square Error of Approximation; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index.

Figure 3: Table 2

tional competence fully mediated the relationship between self-efficacy and workaholism (see table 2 for more information).

4   Discussion

This study constitutes the first step to build a mathematical model of workaholism. According to the results obtained, we can identify four antecedents that are important to its development, i.e., work self-efficacy, autonomy, mental competence and emotional competence. The higher self-efficacy is, the higher autonomy, mental competence and emotional competence employees will probably have, and more opportunities to develop workaholism they will have. Therefore, these four antecedents are possible candidates to be included in the hypothetical mathematical model of workaholism.

References

[1] Baron, R. M., and Kenny, D. A. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations *Journal of Personality and Social Psychology*, 51:1173–1182, 1986

[2] Del Líbano, M., Llorens, S., Salanova, M. and Schaufeli, W. B. Validity of a brief workaholism scale *Psicothema*, 22:143–150, 2010.

[3] Iverson, R. D., and Maguire, C. The relationship between job and life satisfaction: evidence from a remote mining community *Human Relations*, 53:807–839, 2000.

[4] Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., and Podsakoff, N. P. Common method biases in behavioral research: a critical review of the literature and recommended remedies *Journal of Applied Psychology*, 88:879–903, 2003.

[5] Schaufeli, W. B., Shimazu, A., and Taris, T. W. Being driven to work excessively hard: The evaluation of a two-factor measure of workaholism in the Netherlands and Japan *Cross-Cultural Research*, 43:320–348, 2009.

[6] Bandura, A., and AutorB NameB. Title of the paper *Name of the Journal*, 50(5-6):765–776, 2010.

[7] Bandura, A., Self-efficacy: the exercise of control. New York, NY: Freeman, 1997.

[8] Byrne, B. M.,Structural equation modeling with AMOS: Basic concepts, applications and programming. Mahway, New Jersey (London): Lawrence Erlbaum Associates, Publishers, 2001

[9] Nunnally, J. C., and Bernstein, I. H., Psychometric theory New York: McGraw-Hill, 1994

[10] Salanova, M., Cifre, E., Martínez, I., and Llorens, S., Caso a caso en la prevención de riesgos psicosociales. Metodología WONT para una organización saludable. Bilbao: Lettera Publicaciones, 2007.