

## The dimensionality of workaholism and its relations with internal and external factors<sup>☆</sup>



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### ARTICLE INFO

#### Article history:

Received 1 February 2017

Accepted 12 September 2017

Available online 2 November 2017

#### Keywords:

Workaholism

Self-criticism

LMX

WFC

Emotional instability

Job autonomy

Suppressor variable

### ABSTRACT

“Are workaholics born or made?” The current research aims to answer the question above, while investigating the joint impact of internal and external factors (Work Drive and Work Enjoyment) related to workaholism’s dimensions. In Study 1, we hypothesize an order of precedence between those dimensions, utilizing one moderator (Job Autonomy) and one mediator (Work-Family Conflict - WFC) (158 employees). Study 2 (349 employees) expands the general framework, taking two moderators (Self-Criticism and LMX) into consideration. Multivariate (vs. bivariate) analyses allowed more thorough understanding of workaholism and its dimensions. We offer theoretical and practical implications.

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## La dimensionalidad de la adicción al trabajo y su relación con factores internos y externos

### RESUMEN

“¿Los adictos al trabajo nacen o se hacen?” Este trabajo trata de contestar dicha pregunta investigando la repercusión conjunta de factores internos y externos (la motivación por el trabajo y el disfrute del mismo) en relación a las dimensiones de la adicción al trabajo. En el estudio 1 se plantea la hipótesis de un orden de precedencia entre esas dimensiones usando un moderador (la autonomía en el puesto de trabajo) y un mediador (el conflicto trabajo-familia) en una muestra de 158 empleados. El estudio 2, en una muestra de 349 empleados, amplía el marco general teniendo en consideración dos moderadores (autocrítica e intercambio líder-subordinado). Los análisis multivariable (en relación a los bivariales) permitieron una mayor comprensión de la adicción al trabajo y de sus dimensiones. Por último, se abordan implicaciones teóricas y prácticas.

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#### Palabras clave:

Adicción al trabajo

Autocrítica

Intercambio líder-subordinado

Conflicto trabajo-familia

Inestabilidad emocional

Autonomía en el puesto de trabajo

Variable supresora

Oates (1971) coined the term Workaholism and defined the phenomenon as “an addiction to work, the compulsion or

uncontrollable need to work incessantly” (Oates, 1971, p. 11). Oates noted that workaholics’ need to work becomes exaggerated and may cause harm to their health, personal happiness, interpersonal relations, and social functioning. In a later discussion of the term, Spence and Robbins (1992) regarded workaholism as an addiction. They noted that “the workaholic feels driven or compelled to work, not because of external demands or pleasure in work, but because of inner pressures that make the person distressed or guilty

<sup>☆</sup> An earlier version of this paper was presented at an annual meeting of the Eastern Academy of Management, where it was granted the Outstanding Paper award.

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about not working” (p. 161). Since Spence and Robbins (1992), there have been many papers in the academic literature devoted to workaholism (e.g., Andreassen, Griffiths, Hetland, Kravina, Jensen, & Pallesen, 2014; Patel, Bowler, Bowler, & Methe, 2012; Schaufeli, Taris, & Van Rhenen, 2008). Most researchers agree upon workaholism’s core behavioral manifestation, namely, heavy investment in work (Scott, Moore, & Miceli, 1997; Snir & Harpaz, 2015; Spence & Robbins, 1992). That is to say, workaholics spend many hours a week on work-related activities when given the opportunity to do so (Snir & Zohar, 2008) and much beyond what is required or expected by colleagues or organizational demands (Scott et al., 1997).

Of note, workaholism has frequently been considered as comprising a multi-dimensional structure (for an in-depth review, see Andreassen, 2015). This paper will also adhere to the multi-dimensional structure of this concept.

### Dimensions of Workaholism

Spence and Robbins (1992) offered the first multi-dimensional definition of workaholism. They prescribed three dimensions and dubbed them the ‘Workaholism Triad’ – Work Involvement, Work Drive, and Work Enjoyment. Work Drive constitutes the inner pressures that compel the employee to work, while Work Enjoyment is the pleasure derived from the work itself. The Involvement dimension refers to the commitment of employees to their work and time invested in it (see Spence & Robbins, p. 161).

As far as we know, since Spence and Robbins (1992), there have been two additional multi-dimensional definitions of workaholism. Such dimensions include Non-Required Work and Control of Others, which gauge the amount of time and energy spent at work (Mudrack & Naughton, 2001), and Working Compulsively and Working Excessively, which assess both the time and energy invested in work (i.e., heavy work investment) and the drive compulsion for investing these resources (Schaufeli, Shimazu, & Taris, 2009). However, in this paper, we chose to follow Spence and Robbins’ (1992) dimensions because it is the only theoretical framework in which the Drive dimension coexists with a *positive experience* of Enjoyment at work. We find this approach highly relevant in the current world of social sciences, with its emphasis on Positive Psychology, and in the context of an overall western culture, that promotes the workplace as a potential source of self-fulfillment and enjoyment. As Harpaz (2015) wrote:

In contrast to the negative side, other studies have emphasized the positive aspects of the drive to work. They saw it as a dispositional motive that causes enthusiasm and passion in one’s work behavior, perceiving it as a source of pleasure, self-fulfillment, and existential meaning (p. 370).

In light of past literature, we noticed that the Triad’s dimensions (Drive, Enjoyment, and Involvement; Spence & Robbins, 1992) are consistently deemed theoretically independent of each other (see Graves, Ruderman, Ohlott, & Weber, 2012; McMillan, Brady, O’Driscoll, & Marsh, 2002; Spence & Robbins, 1992). It is important to note that throughout the literature the Drive and Enjoyment dimensions are deemed the most consistent, while research has failed to confirm the relevance of the Involvement dimension (e.g., Andreassen, Hetland & Pallesen, 2012; McMillan et al., 2002). One reason is that the definition of involvement has terminological collinearity with organizational commitment (for further review, see Scott et al., 1997, p. 290) and the latter dimension, i.e., organizational commitment, was considered, overall, an invalid dimension (Andreassen, Griffiths et al., 2014). Thus, this research focuses specifically only on the Drive and Enjoyment dimensions.

Concerning the associations between Work Drive and Work Enjoyment, there have been some inconsistencies: several

researchers have found significant positive relationships (Burke, Matthiesen, & Pallesen, 2006; Clark, Michel, Zhdanova, Pui, & Baltes, 2014; McMillan et al., 2002), while others have found close-to-zero relationships (Andreassen, Hetland, & Pallesen, 2010; Spence & Robbins, 1992). It is vital to emphasize that in these studies the authors obtained results by employing correlational methodology (post factum, in the correlation matrices) and not by establishing a priori confirmatory hypotheses. These inconsistencies lead us to believe that the relationship between Drive and Enjoyment is most probably regulated by other, indirect variables (mediators, moderators).

### The Current Research

Faced with these inconsistent findings, we reassert that the goal of the present paper is to test the dimensionality of workaholism and its relations with internal and external factors. The medium for achieving this objective is a test of a broader theoretical framework that incorporates the Drive and Enjoyment dimensions, including antecedents, moderators, mediators, and outcomes. We aim to show that Work Drive – at times regarded as being “intrinsically bad” because of its potentially negative outcomes (Schaufeli et al., 2009, p. 325) – may have positive outcomes as well (i.e., Enjoyment). In other words, “Out of the strong, came forth something sweet” (Judges 14:14). By doing so, we will try to unveil potentially important variables, *which can be used for organizational interventions*, in order to bring something “sweet” “from something “strong”.

This research is built upon two separate studies, whereby the second study is additive to the first in terms of the conceptual framework, namely, it serves as a test of the association between Work Drive and Work Enjoyment and its relations with other internal and external factors. We split our research into two separate studies due to the large amount of variables overall (see Figure 3). Had we incorporated them all into one study, from the perspective of the respondents, survey completion would have been overly burdensome. This approach of breaking down a global research project, comprising a large number of factors, into sub-studies is supported by previous studies (e.g., Chernyak-Hai & Tziner, 2012; Sharoni, Shkoler, & Tziner, 2015).

### Work Drive and Work Enjoyment – Order of Precedence

Before elaborating on the said variables and associations, we wish to focus specifically on the relationship between the Drive and Enjoyment dimensions. As far as we know, testing the notion that Work Drive *precedes* Work Enjoyment has yet to be determined on a solid theoretical basis. This relationship stands in the center of our framework (see Figure 3), and as such is of paramount importance.

Work Drive can be considered as an uncontrollable internal need (Taris, Schaufeli, & Shimazu, 2010), which may override preventive motivational focus (Taris, van Beek, & Schaufeli, 2015) – the prevention of unpleasant feelings when not working. This proposition is supported by Ng, Sorensen, and Feldman’s (2007) research that demonstrated that the act of working assuages the associated unpleasant feelings when not working, such as anxiety, helplessness, depression, and/or guilt (see also Spence & Robbins, 1992; Beek, Hu, Schaufeli, Taris, & Schreurs, 2012; Andreassen, Griffiths, Hetland, & Pallesen, 2012). Therefore, the act of working might play a role as a mood modifier, which is an important component of any addiction (Andreassen et al., 2012; Griffiths, 2005), namely, working in order to escape or avoid dysphoria.

Therefore, we hypothesize that the uncontrollable internal drive to work *precedes* the experiences that might derive from the work itself (e.g., Work Enjoyment). The association between Drive and

Enjoyment may be perceived as positive, since in a western cultural context, employees may view work as a place for self-fulfillment and enjoyment (Harpaz, 2015) and, within that sub-culture of the work environment, they might even be idolized as “heroes” (Shimazu, Kubota, & Bakker, 2015). However, we should note that although the act of working may quench negative feelings, working does not necessarily elevate positive feelings. Hence, although it is probable that Work Drive will lead to more experienced Work Enjoyment, we cannot be fully certain about the direction of association between the two dimensions. Ergo, we hypothesize that:

H1: Work Drive will be correlated with Work Enjoyment.

### Study 1 – Internal and External Factors in Relation to Work Drive and Enjoyment

For the purpose of the study, we chose three variables to relate to the Work Drive and Work Enjoyment dimensions. These were: (a) Emotional Instability (emotional instability), which we chose due to its negative affect and the possibility of mood modification (see explanation below); (b) Work-Family Conflict, for the possible behavioral manifestation of Work Drive (i.e., working for many hours); and (c) Job Autonomy, an important interventional factor an organization may employ, which can have an impact on work characteristics.

#### Neuroticism (Emotional Instability)

Emotional instability is the tendency to experience negative emotions, such as anger, anxiety, low self-esteem, depression, impulsivity, mood swings, emotional instability, insecurity, and high vulnerability to stress (Djurkovic, McCormack, & Casimir, 2006). This concept is a part of the Five Factor Model (FFM) of personality, commonly known as the Big Five, and is often referred to as ‘emotional instability’. Emotionally unstable individuals are emotionally unstable personalities who experience less positive affect, subjective well-being, and life satisfaction (Olesen, Thomsen, & O’Toole, 2015).

#### Emotional Instability and Work Drive

As mentioned above, work has the potential to mitigate unpleasant feelings (Ng et al., 2007; Spence & Robbins, 1992), since working acts as a mood modifier (Andreassen et al., 2012). Hence, because emotionally unstable individuals generally feel negative emotions more frequently, the probability that they will be driven to work is higher (for example, in order to avoid dysphoria). This supposition is supported by several studies in which emotional instability was positively related to drive-based work (Andreassen et al., 2010; Andreassen, Ursin, & Eriksen, 2007; Burke et al., 2006; Clark, Lechook & Taylor, 2010; Součková, Vakušik, & Procházka, 2014). Although the significant relationship between the two variables has already been tested, we follow the recommendation of eminent scholars that the ultimate test for validity of findings is their recurrence in numerous replications (James, Mulaik, & Brett, 1982). We, therefore, hypothesize:

H2: Emotional instability will be positively correlated with Work Drive.

#### Emotional Instability and Work Enjoyment

In general, emotionally unstable individuals will inherently experience less joy or enthusiasm, and more stress or frustration. This notion is supported by several studies in which emotional instability was found to be negatively related to Work Enjoyment (Andreassen et al., 2010; Andreassen et al., 2007; Aziz & Tronzo,

2011; Součková et al., 2014). Although the relationship between the two variables has also already been tested, we similarly follow the recommendation for a replication (James et al., 1982), as noted above. We, therefore, hypothesize:

H3: Emotional instability will be negatively correlated with Work Enjoyment.

#### Work-Family Conflict

Work-family conflict (WFC) can be defined as a type of inter-role conflict, in which the pressures of work and family are mutually incompatible in a number of ways. There are three types of WFC (Greenhaus & Beutell, 1985):

*Time-based conflict*, whereby time expended in one domain precludes time spent in the other, in such a way that it depletes energy and creates stress (e.g., being required to invest long hours at work inevitably means fewer hours available to spend with one’s family (Dewe, O’Driscoll & Cooper, 2010);

*Strain-based conflict*, whereby the stress in one role affects performance in another (e.g., when people experience high levels of strain at work, the stress can be carried over into their lives away from the job (Dewe et al., 2010); and

*Behavior-based conflict*, which refers to incompatibility between the desirable behavior-patterns in two competing domains (e.g., an individual at work may be expected to be ambitious, and task-oriented to perform well. In contrast, the expectation at home is that the same individual be loving, supportive, and accommodating (Dewe et al., 2010).

#### Work-family Conflict and Work Drive

Work-driven employees are present in their work much more than is expected of them (see Scott et al., 1997; Spence & Robbins, 1992), especially when they have a choice to do so (Snir & Zohar, 2008). Indeed, because such workers spend more time at work than at home, there is a greater possibility of conflicts between the home and the work (see Andreassen, Hetland, et al., 2014b). We, thus, hypothesize:

H4: Work Drive will be positively correlated with WFC.

#### Work-family Conflict and Work Enjoyment

Individuals who experience hindrance-related stress – i.e., stressful demands, perceived as hindering progress toward personal accomplishments or goal attainment (Colquitt, Lepine, and Wesson (2011) – are likely to feel strained and impaired in their work (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). Gilboa, Shirom, Fried, and Cooper (2013) regarded WFC as a hindrance stressor. As such, these hindrance-stressed individuals would perceive their jobs as less enjoyable, and hence, their Work Enjoyment would be low. We thus hypothesize:

H5: WFC will be negatively correlated with Work Enjoyment.

#### Work-family Conflict, Work Drive, and Work Enjoyment

As hypothesized above, the Drive dimension precedes and relates to Work Enjoyment. Moreover, work-driven employees will experience more WFC as a result of overworking. This conflict will eventually lead them to experience less Enjoyment in their work. We, therefore, can hypothesize that the association between Drive and Enjoyment is not only direct, but may also be indirect, by means of a mediator – WFC. We, thus, hypothesize:

H6: WFC will mediate the relationship between Work Drive and Work Enjoyment (as H1, H4, and H5).

Job Autonomy

Job autonomy reflects the extent to which a job allows discretion, freedom, and independence in scheduling work or allowing employees to decide and select the methods (how and when) used to execute their tasks (Hackman & Oldham, 1975). Park and Searcy (2012) have demonstrated that, in contradistinction to less autonomous employees, autonomous workers possess an intrinsic drive to work, are more satisfied and productive in their jobs, and have higher commitment and retention levels.

Job Autonomy, Work Drive, and WFC

Highly driven employees invest vast resources in their work, possibly at the expense of resources that can be devoted to family activities (Hobfoll, 1989), resulting in those workers experiencing higher levels of WFC than employees not so highly driven. When the job allows the worker high autonomy, the possibility that the Work Drive will be manifested is greater, since the employee is likely to have more control and flexibility at work. Consequently, those high on the Work Drive dimension may use their freedom and independence to schedule in longer hours beyond what is required. Namely, when Job Autonomy is high, Work Drive will lead to increased WFC, as opposed to when the autonomy is low. We, therefore, hypothesize:

H7: Job autonomy will moderate the relationship between Work Drive and WFC.

Method

Participants

The participants were 158 Israeli employees of various organizations (e.g., services, high-tech, etc.), 20.3% males and 79.7% females, between the ages of 25 and 63 ( $M = 33.80$ ,  $SD = 6.77$ ), who have children between 0 and 5 years old ( $M = 1.76$ ,  $SD = 0.95$ ); 10.8% of the sample had high school diplomas, 16.5% had tertiary/vocational education, and 72.8% had an academic degree; 34.8% held managerial positions and 65.2% did not hold managerial positions.

Procedure and Measures

We distributed an electronic version of the research questionnaire to workers in various organizations, utilizing both email and Facebook platforms. Those who wished to participate replied that they did, and were included in the total sample.

Emotional Instability (neuroticism) was assessed using the Big Five Inventory (BFI; John & Srivastava, 1999), which consists of 44 Likert-type items. However, in the present study only emotional instability was examined, using only eight items, ranging from 1 (strongly disagree) to 6 (strongly agree) – e.g., “I worry a lot” – while three of the items were reverse-coded. In the present study, there was an adequate reliability ( $\alpha = .77$ ,  $M = 2.78$ ,  $SD = 0.65$ ).

Job autonomy was assessed using the Work Design Questionnaire (WDQ; Morgeson & Humphrey, 2006), which consists of 77 Likert-type items, ranging from 1 (strongly disagree) to 6 (strongly agree). For the current study, we chose nine items that indicated job autonomy, e.g., “The job allows me to plan how I do my work”. The original Cronbach’s alpha of the measure was .86 (Morgeson & Humphrey, 2006). In the present study, there was a high reliability ( $\alpha = .93$ ,  $M = 4.45$ ,  $SD = 1.62$ ).

Work-family conflict was assessed using the Work-Family Conflict Scale (Netemeyer, Boles, & McMurrian, 1996), consisting of five Likert-type items ranging from 1 (strongly disagree) to 6 (strongly agree). Original Cronbach’s alpha of the scale was .88. In the present study, there was a high reliability ( $\alpha = .94$ ,  $M = 3.70$ ,  $SD = 1.60$ ).

Table 1.1  
Pearson Correlation Matrix for Study 1 (N = 158).

	1	2	3	4
1. E. Ins				
2. J-A	-.37***			
3. WFC	.29***	-.31***		
4. W-E	-.32***	.62***	-.32***	
5. W-D	.22**	-.10	.33***	.01

Note. E. Ins = Emotional Instability; J-A = Job Autonomy; WFC = Work-Family Conflict; W-E = Work Enjoyment; W-D = Work Drive.  
\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Table 1.2  
Standardized Regression Coefficients and Model Summaries for Predicting WFC.

Predictor variables	$\beta_{\text{model 1}}$	$\beta_{\text{model 2}}$	$\beta_{\text{model 3}}$
W-D	.26**	.23**	.21**
J-A		-.30***	-.36***
INT (W-D × J-A)			.26***
F-test	$F(1, 156) = 11.48$	$F(2, 155) = 14.34$	$F(3, 154) = 14.44$
$R^2 (\Delta R^2)$	.07***	.16*** (.09***)	.22*** (.06***)

Note. W-D = Work Drive; J-A = Job Autonomy; WFC = Work-Family Conflict; INT = interaction effect of W-D × J-A.  
\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Workaholism was assessed using the Workaholism Battery (Work-Bat; McMillan et al., 2002). The battery consists of 21 Likert-type items ranging from 1 (does not describe my work at all) to 6 (describes my work exactly). Seven of these items measure the Enjoyment factor of workaholism, (e.g., “I like my work more than most people do”), and seven measure the Drive factor of workaholism, (e.g., “I feel guilty when I take time off work”). The other seven items measure the Involvement factor, but they were not included in the present study. Cronbach’s alpha of the Enjoyment and Drive factors, respectively, were .88 and .73 (Huang, Hu, & Wu, 2010). In the present study, there was an adequate reliability for Work Enjoyment ( $\alpha = .88$ ,  $M = 2.63$ ,  $SD = 0.98$ ) and for Work Drive ( $\alpha = .79$ ,  $M = 3.35$ ,  $SD = 0.78$ ).

Results

In order to test for common-method bias (CMB), we employed Harman’s single factor test (see Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Our single-factor explained 25% of the variance, and as such is not considered to have CMB problems (criterion for CMB problems is  $R^2 \geq 50\%$ ). Using AMOS (v. 22) we tested our model’s fit:  $\chi^2(1) = 9.10$ ,  $p = .003$ ,  $\chi^2/df = 9.10$ , SRMR = .07, CFI = .87, GFI = .97, NFI = .87, RMSEA (LL-UL, CL = 90%) = .23 (.11-.37),  $p = .009$ . This indicates the model fits the data only relatively (Byrne, 2010).

We performed Pearson correlations and hierarchical linear regression analyses, in order to test the model and hypotheses. Table 1.1 presents the correlations among the study’s variables.

Table 1.1 indicates no statistically significant correlation between Drive and Enjoyment dimensions of workaholism ( $r = .01$ ,  $p = .455$ ), rejecting H1. There is also a positive correlation between N and Work Drive ( $r = .22$ ,  $p = .003$ ), but negative between N and Work Enjoyment ( $r = -.32$ ,  $p = .000$ ), while supporting H2, and H3. There is also a positive correlation between Work Drive and WFC ( $r = .33$ ,  $p = .000$ ), while WFC is negatively correlated with Work Enjoyment ( $r = -.32$ ,  $p = .000$ ), supporting H4 and H5.

Table 1.2 indicates a statistically significant interaction effect of Work Drive and Job Autonomy on WFC, supporting H7. From the interaction analysis (see also Figure 1.5), we can conclude that:

- When Job Autonomy is low (-1 SD from the mean), the effect of Work Drive on WFC is near-zero ( $\beta = -.05$ ,  $p = .452$ ).



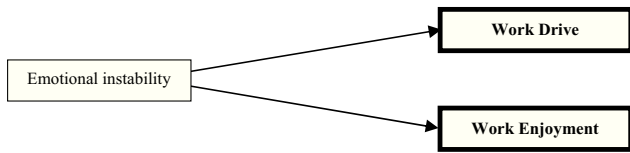


Figure 1.1. Model for H2 and H3.

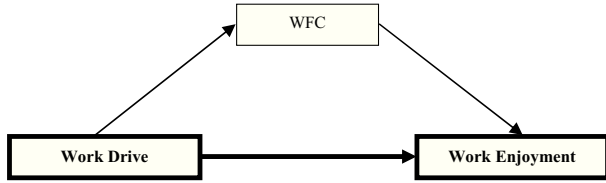


Figure 1.2. Model for H4, H5 and H6. Note. WFC = Work-Family Conflict.

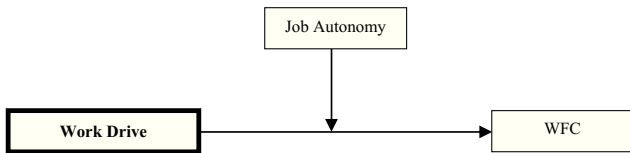


Figure 1.3. Model for H7.

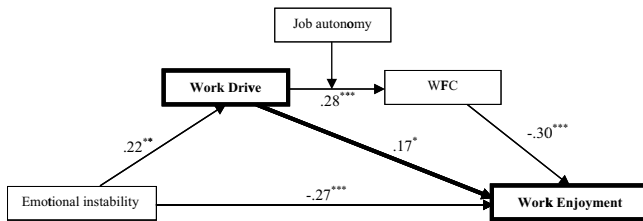


Figure 1.4. Research model for Study 1. Note. WFC = Work-Family Conflict. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

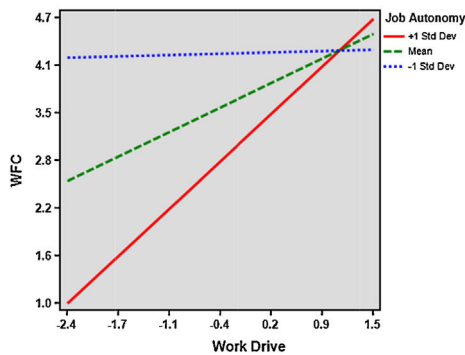


Figure 1.5. Interaction Graph (Job Autonomy as moderator).

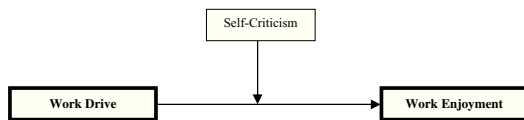


Figure 2.1. Model for H8.

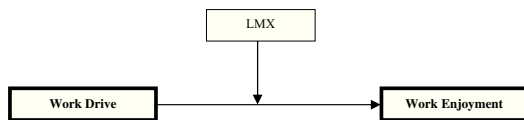


Figure 2.2. Model for H9.

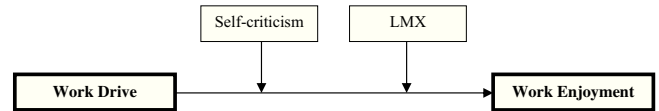


Figure 2.3. Research model for Study 2.

- When Job Autonomy is moderate (0 SD from the mean), the effect of Work Drive on WFC is positive ( $\beta = .21, p = .001$ ).
- When Job Autonomy is high (+1 SD from the mean), the effect of Work Drive on WFC is positive and strong ( $\beta = .47, p = .000$ ). Thus, the higher the Job Autonomy, the stronger is the impact of Work Drive on WFC.

We also used AMOS (v. 22) to test the mediation model (H6) presented in Figure 1.4, albeit not all the conditions for mediation were met (see Warner, 2013). This has led us to further investigation.

Further Analyses

At the bivariate level, there was a near-zero correlation between Work Drive and Work Enjoyment ( $r = .01, p = .455$ ), as per H1. Nevertheless, when testing the model as a whole (see Figure 1.4 and Table 1) at the multivariate level, we found the relationship between Work Drive and Work Enjoyment to be significant ( $\beta = .17, p = .032$ ). This has led to further investigations of the relationships among the variables. To make sure of what was confounding our results, we utilized a hierarchical regression analysis to test the mediation model. We noticed, however, that instead of decreasing the direct association between Drive and Enjoyment (as would be expected from the mediator), WFC actually increased this relationship (when added in a second step of the hierarchical regression, after Work Drive). We concluded, therefore, that WFC functions as a suppressor variable, increasing the predictive validity of Work Drive on Work Enjoyment de facto.

The classical definition states that a suppressor variable has no relationship with the criterion yet, nonetheless, the suppressor variable increases the correlation between the independent variable and the criterion (Pandey & Elliott, 2010; Tzelgov & Henik, 1991). However, a suppressor is defined by its effects on other variables, and may or may not be related to the criterion (see Pandey & Elliott, 2010). In actuality, the suppressor variable suppresses the outcome-irrelevant variance (“noise”) of the predictor on the criterion, thus “clearing” the explained variance by the said predictor. Such a unique effect cannot be seen in simple bivariate analyses; consequently, we employed a hierarchical regression (for further reading, see Pandey & Elliott, 2010; Tzelgov & Henik, 1991). Furthermore, we agree with Paulhus, Robins, Trzesniewski, and Tracy (2004) who argue that a better term for a suppressor variable is “enhancement variable” (p. 303). These considerations led us to the question as to why WFC acts as a suppressor variable on the Drive-Enjoyment relationship. To resolve this entanglement further, we provide a theoretical explanation (see discussion section).

Study 2 – Internal and External Factors in Relation to Work Drive and Enjoyment

For the purpose of Study 2, we chose two factors: Self-Criticism (internal) and Leader-Member Exchange, LMX (external). Self-Criticism is reminiscent of Emotional instability as an internal personality disposition because of its negative characteristics and the possibility of mood modification (see explanation below). Furthermore, as far as we know, Self-Criticism has not been scrutinized at all concerning its relationship to Work Drive or Work Enjoyment. Moreover, based on the Social Exchange Theory, SET (Blau, 1964), we chose LMX, since a healthy manager-employee relationship

potentially provides the worker with a supportive framework that cultivates productive work conditions. As such, it is an important interpersonal factor (dimension) the organization may exploit, because this positive dyadic relationship may bring something “sweet” (Work Enjoyment) out of something “strong” (Work Drive).

### Self-Criticism

Self-critical individuals are highly likely to experience agitation-related emotions, and they are characterized by “intense feelings of inferiority, guilt, and worthlessness and by a sense that they have failed to live up to expectations and standards” (Blatt, D’Afflitti, & Quinlan, 1976, pp. 383–384). They expect too much from, and feel bad about, themselves, while having little personal confidence (Chang, 2008).

### Self-Criticism, Work Drive, and Work Enjoyment

We have already noted (in the first study) that working may assuage unpleasant feelings such as anxiety and guilt (Ng et al., 2007; Spence & Robbins, 1992; van Beek et al., 2012), and that work acts as a mood modifier. However, with respect to self-critical individuals, Self-Criticism functions as a “weight” on the modification itself, which might then annul (or attenuate) the alleviation of the unpleasant feelings. For example, while driven workers may indeed work hard in order to avoid dysphoria and feelings of guilt, such individuals high on Self-Criticism might discover that this intense effort generates even more negative feelings of inferiority, guilt, and worthlessness (Blatt et al., 1976). Hence, Self-Criticism decreases the probability of Work Drive to translate into a less negative experience in work. That means that the association between Work Drive and Work Enjoyment is conditioned on the levels of Self-Criticism. While we cannot guarantee that Work Drive will lead to increased Enjoyment (as mentioned in H1), we can hypothesize that when Self-Criticism is high, the relationship between Drive and Enjoyment would differ from circumstances where Self-Criticism is low. We, thus, hypothesize:

H8: Self-criticism will moderate the relationship between Work Drive and Work Enjoyment.

Notably, we hypothesize no *direct* associations between self-criticism and Work Drive or Work Enjoyment (see explanation in Appendix).

### Leader-Member Exchange Theory (LMX)

Nested inside the framework of Social Exchange Theory (SET; Blau, 1964), LMX theory focuses on the dyadic exchanges between leaders and followers (Graen & Uhl-Bien, 1995). We recognize a high-quality relationship (i.e., high LMX) by a high level of instrumental support, such as information exchange, guiding, and numerous rewards, and emotional support, such as mutual trust and influence, respect, loyalty, and fondness. A low-quality relationship is characterized by a poor level of trust, formal relations, one-directional influence, limited support, low levels of interactions, and fewer rewards. Accordingly, in low LMX, we expect the manager’s relationship to the employee to be high in supervision and less personal in nature (Asgari, Silong, Ahmad, & Abu Sama, 2008).

### LMX, Work Drive, and Work Enjoyment

As opposed to Self-Criticism, high LMX might act as a “crane”. By supplying managers with more concrete and instrumental ways to assist their subordinates (i.e., information exchange, guidance, etc.), and by providing emotional support (i.e., loyalty, trust, etc.), high LMX may lift the workers’ abilities to accomplish work-related

tasks. In addition, since Work Drive constitutes the inner pressures that compel the employee to work, facilitated ways to accomplish it may prove highly vital for them. By illustration, the employees may enjoy from fewer constraints and/or conflicts at the job. They can, thus, concentrate on the work itself while avoiding unnecessary job-related hassles. This indicates a buffering effect that LMX may have on the relationship between Work Drive and Work Enjoyment. Therefore, LMX can act as a moderator variable, in this regard. It is important to note that while LMX might moderate said relationship, we cannot say for certain that high LMX may necessarily increase enjoyment from work, but will stabilize the dissatisfaction from work (on the same notion of supplying Hygiene factors via the Two-Factor Theory; Herzberg, Mausner, & Snyderman, 1959). Thus, our last hypothesis is:

H9: LMX will moderate the relationship between Work Drive and Work Enjoyment.

We hypothesize no *direct* associations between LMX and Work Drive or Work Enjoyment (see explanation in Appendix).

## Method

### Participants

The participants were Israeli 349 employees of various organizations (e.g., services, high-tech, etc.), 24.9% males and 75.1% females between the ages of 20 and 67 ( $M = 27.04$ ,  $SD = 7.04$ ), who had between 12 and 20 years of education ( $M = 13.37$ ,  $SD = 1.81$ ); 73.1% of the incumbents were single, 24.1% married, and 2.9% divorced; 22.3% held managerial positions, and 77.7% did not hold managerial positions; 94.6% were salaried employees, while 5.4% were freelancers.

### Procedure and Measures

We sent the electronic version of the research questionnaire to workers in various organizations utilizing both email and Facebook platforms. Those who wished to participate replied that they did, and were included in the total sample.

*Self-criticism* was assessed using the Depressive Experiences Questionnaire (DEQ; Blatt, D’Afflitti, & Quinlan, 1979), consisting of 17 Likert-type items ranging from 1 (*strongly disagree*) to 6 (*strongly agree*), of which 8 items were reverse-scored (e.g., “I often find that I don’t live up to my own standards or ideals”). The original DEQ measured three constructs: dependency, self-criticism, and efficacy. For the purposes of the current study, we chose only the self-criticism factor, based on a former questionnaire (Blatt et al., 1976). Cronbach’s alpha of the SC varied between .70 and .93 (see Campos, Besser, & Blatt, 2011). In the present study, there was an adequate reliability ( $\alpha = .71$ ,  $M = 2.92$ ,  $SD = 0.59$ ).

LMX was assessed using a 7-item questionnaire (LMX7; Graen & Uhl-Bien, 1995), on a 6-point Likert-type scale ranging from 1 (*almost never*) to 6 (*always*), e.g., “Do you usually know how satisfied your leader is with what you do?” In a recent study, Cronbach’s alpha of the questionnaire was .87 (Gu, Tang, & Jiang, 2015). In the present study, there was an adequate reliability ( $\alpha = .85$ ,  $M = 4.18$ ,  $SD = 0.88$ ).

*Workaholism* was assessed using the Workaholism Battery (Work-Bat; McMillan et al., 2002). The battery consists of 21 Likert-type items ranging from 1 (*does not describe my work at all*) to 6 (*describes my work exactly*), 7 of which measure the Enjoyment factor of workaholism (e.g., “I like my work more than most people do”), and 7 measure the Drive factor of workaholism (e.g., “I feel guilty when I take time off work”). The other items measure the Involvement factor, but they were not included in the present study. Cronbach’s alpha of the Enjoyment and the Drive factors were .88

**Table 2.1**  
Pearson Correlation Matrix for Study 2 (N = 349).

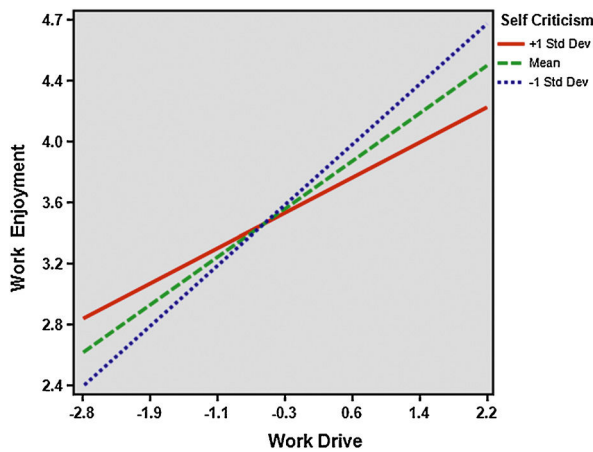
	1	2	3
1. SC			
2. LMX	-.40***		
3. W-E	-.05	-.07	
4. W-D	.01	-.03	.41***

Note. SC = Self-Criticism; LMX = Leader-Member Exchange; W-E = Work Enjoyment; W-D = Work Drive.  
\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

**Table 2.2**  
Standardized Regression Coefficients and Model Summaries for Predicting W-E.

Predictor variables	$\beta_{\text{model 1}}$	$\beta_{\text{model 2}}$	$\beta_{\text{model 3}}$
W-D	.41***	.41***	.40***
SC		-.05	-.05
INT (W-D×SC)			-.10*
F-test	$F(1, 344) = 68.54$	$F(2, 343) = 34.89$	$F(3, 342) = 25.00$
R <sup>2</sup> ( $\Delta R^2$ )	.16***	.16*** (.00)	.18*** (.02)

Note. W-D = Work Drive; W-E = Work Enjoyment; SC = Self-Criticism; INT = interaction effect of W-D×SC.  
\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .



**Figure 2.4.** Interaction Graph (Self-Criticism as moderator).

and .73, accordingly (Huang et al., 2010). In the present study, there was an adequate reliability for Work Enjoyment ( $\alpha = .79$ ,  $M = 3.63$ ,  $SD = 0.93$ ) and for Work Drive ( $\alpha = .75$ ,  $M = 3.76$ ,  $SD = 1.02$ ).

**Results**

In order to test for common-method bias (CMB), we employed Harman’s single factor test (see Podsakoff et al., 2003). Our single-factor explained 14.92% of the variance, and as such is considered to have no CMB problems (the criterion for CMB problems is  $R^2 \geq 50\%$ ). Using AMOS (v. 22) we tested our model’s fit:  $\chi^2(6) = 6.04$ ,  $p = .645$ ,  $\chi^2/df = 0.75$ , SRMR = .03, CFI = 1.00, GFI = .99, NFI = .96, RMSEA ( $LL-UL$ ,  $CL = 90\%$ ) = .00 (.00-.05),  $p = .942$ . This indicates an absolute fit of the model to the data (Byrne, 2010).

We employed Pearson correlations and hierarchical linear regression analyses in order to test the model and hypotheses. Table 2.1 presents the correlations among the study’s variables.

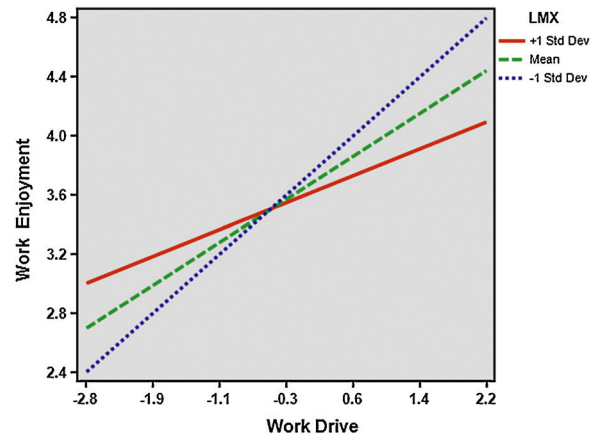
Table 2.1 indicates a statistically significant and positive correlation between Work Drive and Work Enjoyment ( $r = .41$ ,  $p = .000$ ), thus supporting H1 from study 1.

Table 2.2 indicates a statistically significant interaction effect of Work Drive and Self-Criticism on Work Enjoyment, supporting H8. From the interaction analysis (see also Figure 2.4), we can conclude that:

**Table 2.3**  
Standardized Regression Coefficients and Model Summaries for Predicting W-E.

Predictor variables	$\beta_{\text{model 1}}$	$\beta_{\text{model 2}}$	$\beta_{\text{model 3}}$
W-D	.41***	.41***	.40***
LMX		-.07	-.07
INT (W-D×LMX)			-.16***
F-test	$F(1, 344) = 68.54$	$F(2, 343) = 34.92$	$F(3, 342) = 26.20$
R <sup>2</sup> ( $\Delta R^2$ )	.16***	.16*** (.00)	.19*** (.03**)

Note. W-D = Work Drive; W-E = Work Enjoyment; LMX = Leader-Member Exchange; INT = interaction effect of W-D×LMX.  
\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .



**Figure 2.5.** Interaction Graph (Leader-Member Exchange, LMX, as moderator).

- When Self-Criticism is low (-1 SD from the mean), the effect of Work Drive on Work Enjoyment is positive and strong ( $\beta = .50$ ,  $p = .000$ ).
- When Self-Criticism is moderate (0 SD from the mean), the effect of Work Drive on Work Enjoyment is positive and moderate ( $\beta = .40$ ,  $p = .000$ ).
- When the Self-Criticism is high (+1 SD from the mean), the effect of Work Drive on Work Enjoyment is positive and moderate ( $\beta = .30$ ,  $p = .000$ ). Thus, the less an individual criticizes oneself, the greater the effect of one’s Work Drive on Work Enjoyment is. This supports H8.

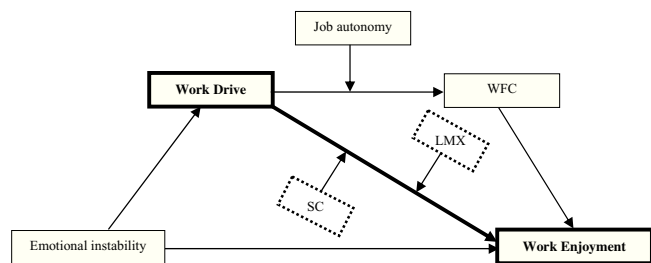
Table 2.3 indicates a statistically significant interaction effect of Work Drive and LMX on Work Enjoyment, supporting H9. From the interaction analysis (see also Figure 2.5), we can conclude that:

- When LMX is low (-1 SD from the mean), the effect of Work Drive on Work Enjoyment is positive and strong ( $\beta = .56$ ,  $p = .000$ ).
- When LMX is moderate (0 SD from the mean), the effect of Work Drive on Work Enjoyment is positive and strong ( $\beta = .40$ ,  $p = .000$ ).
- When LMX is high (+1 SD from the mean), the effect of Work Drive on Work Enjoyment is positive and moderate ( $\beta = .24$ ,  $p = .000$ ). Thus, the higher the quality of LMX, the more the effect of Work Drive on Work Enjoyment is diminished; while on low LMX, higher Work Drive would lead to increased Work Enjoyment.

**Discussion**

The purpose of the current study was to test the dimensionality of workaholism and its relations with internal and external factors (see Figure 3), as these relationships had received little theoretical attention (Mazzetti, Schaufeli, & Guglielmi, 2014).

We found that: (1) Work Drive did not correlate with Enjoyment at the bivariate level in study 1, but Work Drive did correlate with



**Figure 3.** Overall Model for both Study 1 and Study 2.

Note. Solid lines indicate variables from study 1, while broken lines indicate variables from study 2; WFC = Work-Family Conflict; LMX = Leader-Member Exchange; SC = Self-Criticism.

Enjoyment at the bivariate level in Study 2; (2) Emotional Instability positively correlated with Work Drive; while (3) it negatively correlated with Work Enjoyment; (4) Work Drive positively correlated with WFC; while (5) WFC negatively correlated to Enjoyment; (6) No mediation of WFC between Work Drive and Enjoyment was found due to a suppression effect of WFC (see below); (7) Job Autonomy increased the effect Drive has on WFC; (8) Self-Criticism diminished the effect Drive has on Enjoyment; and (9) LMX diminished the effect of Drive on Enjoyment.

Among the many papers devoted to the Drive and Enjoyment dimensions (e.g., Burke et al., 2006; Spence & Robbins, 1992) and, of significance, Mudrack (2006) and Schaufeli et al. (2009) demonstrated that the Drive component is more consistent, essential, and central than the Work Enjoyment dimension. However, throughout the literature, there has been a notable inconsistency regarding the relationship between Work Drive and Work Enjoyment. These inconsistencies led us to believe that the relationship between Drive and Enjoyment is most probably manipulated by indirect variables (mediators and moderators). In the current research, study 1 revealed that this relationship was near-zero, while in study 2 the relationship was significant and positive. However, in study 1, when we analyzed this association's multivariate level (as a part of the mediation hypothesis, H6, in contradistinction to the bivariate level, as in study 2), we found the relationship to be significant, implying WFC as a suppressor variable (see further analyses section).

To elaborate on this matter, we reviewed the Work Drive items of the Work-Bat measure (McMillan et al., 2002), and noticed the Work Drive items have very little association (one item) with the time investment in work. However, a review of the Work-Family Conflict Scale (Netemeyer et al., 1996) revealed that the WFC scale does address, inter alia, the time-based conflict (Greenhaus & Beutell, 1985). It appears, therefore, that the Drive measure is lacking in terms of time investment, while the WFC measure includes such items. Consequently, we can deduce that there is a construct validity deficiency of Work Drive, obscuring its outcome's variance with 'noise'. Hence, by including WFC in the model, this dimension adds the outcome-relevant variance to Work Drive, and suppresses the 'noise' derived from the inaccurate construct validity. By doing so, WFC contributes to the explanation of Work Enjoyment through enhancing the Work Drive's true predictive validity on Enjoyment itself. Such unique relationships between the variables are not to be discarded: retaining a suppressor variable in the model, though seemingly unintuitive, is a necessity for researchers worldwide (see Pandey & Elliott, 2010). See also future research section.

In fact, regarding the relationship between Work Drive and Work Enjoyment (H1), we notice opposing results. Findings of study 1 imply that the association between these dimensions is somewhat spurious, as it is only significant in the presence of the suppressor – WFC. On the other hand, in study 2, we found a bivariate significant positive and moderate correlation between Drive

and Enjoyment. Findings of the latter study support the notion that Work Drive may lead to positive experiences in work (e.g., Harpaz, 2015; Ng et al., 2007; Snir & Harpaz, 2012).

Incongruently with H9, LMX diminished the relationship between Work Drive and Work Enjoyment. The drive to work and the enjoyment of working both stem from a single source, namely, the worker (e.g., Scott et al., 1997; Snir & Harpaz, 2012; Snir & Harpaz, 2015; Spence & Robbins, 1992). It appears that when LMX is high, there is a cardinal external source for positive experience, which "steals the show" for Work Enjoyment. As stated in the literature review, LMX may not be a unidimensional construct; however, it was measured as such in the current paper. As a result of the inability to distinguish between instrumental and emotional support of LMX, we might have limited our understanding of the reason such a moderation effect occurred (see future research section ahead).

Concerning enjoyment at work among self-critical individuals, we have noted that these individuals are highly likely to experience agitation-related emotions (Blatt et al., 1976). Thus, these negative emotions may comprise a "weight" which counterbalances the positive emotions that stem from the work itself. Therefore, when self-criticism is high, one would perceive the job as less enjoyable, as demonstrated (H8).

Regarding the bivariate relationships, hypotheses H2 and H3 were supported in our research, thus contributing the construct validity of emotional instability to the psychological-organizational literature.

The strong relationship between Work Drive and WFC (H4) was supported in our research. The implication is that highly driven workers suffer from different types of conflicts (Greenhaus & Beutell, 1985): (a) time-based – since highly driven workers invest more-than-expected time and efforts in their work (see also Scott et al., 1997); and (b) strain-based – since highly driven workers keep thinking about work even when at home.

As mentioned, individuals who experience hindrance-related stress (such as WFC) would feel strained and impaired in their work (Cavanaugh et al., 2000; Gilboa et al., 2013). This would lead them to have a less enjoyable experience at work, as demonstrated (H5).

Furthermore, when management offers a worker a high level of autonomy, the Drive to overwork may lead to even more allocation of personal resources into the work process, leading to increased WFC, as demonstrated (H7).

## Limitations

First, in both studies, there was a majority of women over men, which might bias the results in certain directions. According to gender role socialization and traditional gender roles, men and women may view their obligations toward their work and family roles differently (Eagly, 1987). Nonetheless, in a recent meta-analysis (Clark et al., 2014), there was no significant relationship between gender and workaholism, and gender did not even act as a moderator. This softens the limitation of gender confounding in our research, but we would recommend future studies to involve samples that are more gender balanced.

Second, the data was gathered through self-report questionnaires (i.e., cross-sectional sample) and all the research variables were examined simultaneously. This methodology limits the ability to draw causal inferences from the results and limits the external validity. However, we conducted several statistical tests (e.g., Harman's Single Factor Test), which disprove this assertion (see Podsakoff et al., 2003).

Third, we did not take into account the organization type (e.g., high-tech/traditional industries, services, public/private sectors) and the specific nature of the work itself (e.g., shifts, workload).



These situational variables may have a significant influence on the expression of drive and/or enjoyment in work. For example, workers whose jobs revolve around content and who have ready access to digital devices, such as laptop and cell phones, have easy access to information. This makes their work far more enjoyable than, say, their counterparts working on a production line. Consequently, we would expect the manifestation of Work Drive among the content group to be enhanced.

## Future Research

Terminologically, we have differentiated between Work Drive and Work Enjoyment. Through our studies, we have contributed to the existing literature on this subject and have established, theoretically, the order of precedence between Drive and Enjoyment. However, we did not examine the entire scope of Spence and Robbins's (1992) definition of workaholism (namely, the Involvement dimension), and therefore would recommend that future studies incorporate this additional dimension.

The important role of LMX shown in study 2 amplifies the necessity to examine additional external variables in a similar fashion. Specifically, we suggest researching leadership styles, which reveal a greater effect on behavior than dyadic relationships such as LMX (see [Sharoni et al., 2015](#)). Moreover, there are additional situational factors to be considered, such as compulsive citizenship behaviors (CCB – coping mechanisms that transpire when employees contribute more to the organization, based upon management forcing the workers to invest more heavily in their work).

Furthermore, as *H9s* results did not corroborate with the rationale we posited for it, a pristine necessity to differentiate between instrumental and emotional support of LMX relations arises. The LMX measure used in the current paper was unidimensional ([Graen & Uhl-Bien, 1995](#)), and it is highly plausible that sub-scaling it to instrumental vs. emotional supports may benefit future studies.

Another area worthy of further research relates to the use of definitions. Terms that we used in our study that addressed the relationship between Drive and Enjoyment might have overlapped with other, related, concepts. For example, Work Enjoyment is very similar in nature to Work Engagement ([Schaufeli et al., 2009](#)). We would highly recommend conducting validating researches in this regard.

Since we conducted our research and tested our models in the work context of Western society, we would suggest further validating our research cross-culturally since, as noted by [Schaufeli et al. \(2009\)](#), Work Drive and investments of both time and energy manifest themselves entirely differently in diverse cultures, specially between East and West.

We would also recommend testing this model in a longitudinal study, for time might have an effect on our variables, their behaviors, and outcomes. It would also be very interesting to study further additional outcome variables relevant for the organization, such as burnout and organizational citizenship behaviors. As cross-sectional data may point to correlational associations, longitudinal studies may provide causal links between the variables.

Finally, we recommend that future research focus on testing comprehensive models with regard to Investment in work as a mediator between the Drive and Enjoyment dimensions. This completes Spence and Robbins' (1992) Work-Bat measure theoretically, due to the measure's lack of weighting appropriated to the dimensions of time and effort invested in work.

## Practical Implications

In the workplace, as is known, individual differences have a wide impact on work (e.g., invested time and effort), and thus they must

be taken into account in employee-related decisions. However, it seems that more attention needs to be given by management to the effects of, and the interaction between, internal and external factors, since these dimensions and manifestations can impact highly on organizational practices and interventions, such as HR, promotion, training.

On the macro-level, we are aware of organizational cultures that nurture working for longer hours than the norm. These organizations show their appreciation in various ways. For example, employees working longer hours are perceived as “heroes” and displayed as role models ([Shimazu et al., 2015](#)). Such cultures may become triggers that activate the Drive disposition. Ergo, in situations where that Work Drive is “activated”, the organization should now consider interventions with certain moderators (e.g., LMX), in order for the worker to achieve Enjoyment, and not negative experiences (e.g., [Oates, 1971](#)). Paraphrasing on Taris et al.'s (2015) paper, an organizational intervention can turn the “beast” to a “beauty” or produce something “sweet” out of something “strong”.

On the micro-level, managers play an important and responsible role in maintaining adequate inter-personal relationships with their employees. These relationships may serve to elevate employees' enjoyment, as well as to raise their job performance. The results of study 2 support this contention and emphasize the importance of management (as an external factor, i.e., LMX) in contributing to employees' experience at work. As such, there is great value in developing and maintaining soft managerial skills, which may improve the interpersonal relationships between the manager and the worker.

Paradoxically, Job Autonomy – usually considered a positive resource – might actually harm the employee in some cases, as depicted in the current research (study 1). Therefore, autonomy should not be granted indiscriminately, but as the product of educated decisions related to employee characteristics, roles, and so on. On the same note, management often arranges flexible work aimed to improve the balance between employee's work and family areas. However, WFC is derived from several sources, one of which is strain-based. Now, work-driven employees feel compelled to work harder; but they also continue to think about work, even when not working. As such, highly driven workers should actually receive differentiated interventions that attenuate their flexible work schedules. This delimitation of autonomy should thus decrease their tendency to increase their investment in work and consequently decrease their WFC.

## Conflict of Interest

The authors of this article declare no conflict of interest.

## Appendix.

It is imperative to emphasize an often not-addressed, and perhaps not well-known, issue in moderation testing. We would like to emphasize that testing for *mediation* requires one specific basic condition [among several] to be fulfilled, namely, that there is a direct link/association (or causal effect) of the predictor with the criterion. In the absence of a direct effect, there can be no mediation of this effect by any mediator variable (see [Edwards & Lambert, 2007](#); [Judd, Yzerbyt, & Muller, 2014](#); [MacKinnon & Luecken, 2008](#); [Preacher, Rucker, & Hayes, 2007](#); [Vancouver & Carlson, 2015](#); [Warner, 2013](#); [Whisman & McClelland, 2005](#)). Nonetheless, it was unclear in several of the aforementioned papers, and in a textbook ([Warner, 2013](#)), whether such a direct effect of a predictor on a criterion is required in moderation analysis, or the subject was addressed vaguely. All the authors mentioned and emphasized that moderation testing is based upon interaction analysis, a joint effect

of both the predictor and the moderator variables on the criterion. Yet, none of the papers mentioned, in a straightforward and unambiguous manner, whether a direct effect condition is required. The only paper that came close to such a conclusion was Judd et al. (2014). The researchers stated that, “A model that estimates moderation is a linear model that estimates the effect of the interaction of two predictor variables on the dependent variable” (p. 31). Furthermore, Dawson (2014) concluded that the interaction term is the heart of moderation analysis, regardless of the main effects, respectively, of the predictor or the moderator. He stated that only when this interaction effect is statistically significant, can we assume that the moderator variable indeed moderates the relationship between the predictor and the criterion. Drawing on Dawson’s (2014) work, we conclude that the interaction term is the sole purpose of such analysis and indicator of a moderation effect; the significance levels of the main effects (of the predictor and the moderator) are negligible.

## References

- Andreassen, C. S. (2015). *Workaholism. The concept and its assessment*. In I. Harpaz, & R. Snir (Eds.), *Heavy work investment: Its nature, sources, outcomes, and future directions* (pp. 68–97). New York, NY: Routledge.
- Andreassen, C. S., Griffiths, M. D., Hetland, J., Kravina, L., Jensen, F., & Pallesen, S. (2014). The prevalence of workaholism: A survey study in a nationally representative sample of Norwegian employees. *PLoS ONE*, 9, e102446. <http://dx.doi.org/10.1371/journal.pone.0102446>
- Andreassen, C. S., Griffiths, M. D., Hetland, J., & Pallesen, S. (2012). Development of a work addiction scale. *Scandinavian journal of psychology*, 53, 265–272. <http://dx.doi.org/10.1111/j.1467-9450.2012.00947.x>
- Andreassen, C. S., Hetland, J., & Pallesen, S. (2010). The relationship between ‘workaholism’, basic needs satisfaction at work and personality. *European Journal of Personality*, 24, 3–17. <http://dx.doi.org/10.1002/per.737>
- Andreassen, C. S., Hetland, J., & Pallesen, S. (2014). Psychometric assessment of workaholism measures. *Journal of Managerial Psychology*, 29, 7–24. <http://dx.doi.org/10.1108/JMP-05-2013-0143>
- Andreassen, C. S., Ursin, H., & Eriksen, H. R. (2007). The Relationship between Strong Motivation to Work, “Workaholism”, and Health. *Psychology and Health*, 22, 615–629.
- Asgari, A., Silong, A. D., Ahmad, A., & Abu Sama, B. (2008). The relationship between transformational leadership behaviors, leader-member exchange, and organizational citizenship behavior. *European Journal of Scientific Research*, 23, 227–242.
- Aziz, S., & Tronzo, C. L. (2011). Exploring the relationship between workaholism facets and personality traits: A replication in American workers. *The Psychological Record*, 61, 269–286. <http://dx.doi.org/10.1007/BF03395760>
- Blatt, S. J., D’Afflitti, J. P., & Quinlan, D. M. (1976). Experiences of depression in normal young adults. *Journal of Abnormal Psychology*, 85, 383–389. <http://dx.doi.org/10.1037/0021-843X.85.4.383>
- Blatt, S. J., D’Afflitti, J. P., & Quinlan, D. M. (1979). *Depressive Experiences Questionnaire. Unpublished manual*. New Haven, CT: Yale University.
- Blau, P. M. (1964). *Exchange and power in social life*. New York, NY: John Wiley.
- Burke, R. J., Matthiesen, S. B., & Pallesen, S. (2006). Personality Correlates of Workaholism. *Personality and Individual Differences*, 40, 1223–1233. <http://dx.doi.org/10.1016/j.paid.2005.10.017>
- Byrne, B. M. (2010). *Structural equation modeling with Amos: Basic concepts, applications, and programming* (2<sup>nd</sup> ed.). New York, NY: Taylor & Francis Group.
- Campos, R. C., Besser, A., & Blatt, S. J. (2011). The relationships between defenses and experiences of depression: An exploratory study. *Psychoanalytic Psychology*, 28, 196–208. <http://dx.doi.org/10.1037/a0022420>
- Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., & Boudreau, J. W. (2000). An empirical examination of self-reported work stress among US managers. *Journal of Applied Psychology*, 85, 65–74.
- Chang, E. C. (2008). Introduction to self-criticism and self-enhancement: Views from ancient Greece to the modern world. In E. C. Chang (Ed.), *Self-criticism and self-enhancement: Theory, research, and clinical implications* (pp. 3–15). Washington, DC: American Psychological Association.
- Chernyak-Hai, L., & Tziner, A. (2012). Organizational citizenship behaviors: Sociopsychological antecedents and consequences. *Revue internationale de psychologie sociale*, 25, 53–92.
- Clark, M. A., Lechhook, A. M., & Taylor, M. L. (2010). Beyond the Big Five: How narcissism, perfectionism, and dispositional affect relate to workaholism. *Personality and Individual Differences*, 48, 786–791. <http://dx.doi.org/10.1016/j.paid.2010.01.013>
- Clark, M. A., Michel, J. S., Zhdanova, L., Pui, S. Y., & Baltes, B. B. (2014). All work and no play? A meta-analytic examination of the correlates and outcomes of workaholism. *Journal of Management*, <http://dx.doi.org/10.1177/0149206314522301>
- Colquitt, J., Lepine, J. A., & Wesson, M. J. (2011). *Organizational behavior: Improving performance and commitment in the workplace*. New-York, NY: McGraw-Hill Irwin.
- Dawson, J. F. (2014). Moderation in management research: What, why, when, and how. *Journal of Business and Psychology*, 29, 1–19. <http://dx.doi.org/10.1007/s10869-013-9308-7>
- Dewe, P. J., O’Driscoll, M. P., & Cooper, C. L. (2010). *Coping with work stress: A review and critique*. Chichester, UK: John Wiley & Sons.
- Djurkovic, N., McCormack, D., & Casimir, G. (2006). Emotional instability and the psychosomatic model of workplace bullying. *Journal of Managerial Psychology*, 21, 73–88. <http://dx.doi.org/10.1108/02683940610643224>
- Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Hillsdale, NJ: Lawrence Erlbaum.
- Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: a general analytical framework using moderated path analysis. *Psychological Methods*, 12, 1–22. <http://dx.doi.org/10.1037/1082-989X.12.1.1>
- Gilboa, S., Shirom, A., Fried, Y., & Cooper, C. L. (2013). A Meta-Analysis of Work Demand Stressors and Job Performance: Examining Main and Moderating Effects. In C. L. Cooper (Ed.), *From Stress to Wellbeing* (1) (pp. 188–230). London, UK: Palgrave Macmillan. [http://dx.doi.org/10.1057/9781137310651\\_10](http://dx.doi.org/10.1057/9781137310651_10)
- Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, 6, 219–247. [http://dx.doi.org/10.1016/1048-9843\(95\)90036-5](http://dx.doi.org/10.1016/1048-9843(95)90036-5)
- Graves, L. M., Ruderman, M. N., Ohlott, P. J., & Weber, T. J. (2012). Driven to work and enjoyment of work effects on managers’ outcomes. *Journal of Management*, 38, 1655–1680. <http://dx.doi.org/10.1177/0149206310363612>
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of management review*, 10, 76–88. <http://dx.doi.org/10.5465/AMR.1985.4277352>
- Griffiths, M. D. (2005). A “components” model of addiction within a biopsychosocial framework. *Journal of Substance Use*, 10, 191–197. <http://dx.doi.org/10.1080/14659890500114359>
- Gu, Q., Tang, T. L. P., & Jiang, W. (2015). Does moral leadership enhance employee creativity? Employee identification with leader and leader-member exchange (LMX) in the Chinese context. *Journal of Business Ethics*, 126, 513–529. <http://dx.doi.org/10.1007/s10551-013-1967-9>
- Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology*, 60, 159–170. <http://dx.doi.org/10.1037/h0076546>
- Harpaz, I. (2015). The current state of heavy work investment and future development. In I. Harpaz, & R. Snir (Eds.), *Heavy work investment: Its nature, sources, outcomes, and future directions* (pp. 361–373). New York, NY: Routledge.
- Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). *The motivation to work*. New York, NY: John Wiley & Sons.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44, 513–524. <http://dx.doi.org/10.1037/0003-066X.44.3.513>
- Huang, J. C., Hu, C., & Wu, T. C. (2010). Psychometric properties of the Chinese version of the workaholism battery. *The Journal of Psychology*, 144, 163–183. <http://dx.doi.org/10.1080/00223980903472219>
- James, L. R., Mulaik, S. A., & Brett, J. M. (1982). *Conditions for confirmatory analysis and causal inference*. San Francisco, CA: Sage.
- John, O. P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin, & O. P. John (Eds.), *Handbook of personality: Theory and research* (2) (pp. 102–138). New York, NY: Guilford Press.
- Judd, C. M., Yzerbyt, V. Y., & Muller, D. (2014). Mediation and moderation. *Handbook of research methods in social and personality psychology*, 2, 653–676.
- MacKinnon, D. P., & Luecken, L. J. (2008). How and for Whom? Mediation and Moderation in Health Psychology. *Health Psychology*, 27(Suppl. 2), S99–S100. <http://dx.doi.org/10.1037/0278-6133.27.2>
- Mazzetti, G., Schaufeli, W. B., & Guglielmi, D. (2014). Are workaholics born or made? Relations of workaholism with person characteristics and overwork climate. *International Journal of Stress Management*, 21, 227–254. <http://dx.doi.org/10.1037/a0035700>
- McMillan, L. H. W., Brady, E. C., O’Driscoll, M. P., & Marsh, N. V. (2002). A multifaceted validation study of Spence and Robbins (1992) workaholism battery. *Journal of Occupational and Organizational Psychology*, 75, 357–368. <http://dx.doi.org/10.1348/096317902320369758>
- Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and Validating a Comprehensive Measure for Assessing Job Design and the Nature of Work. *Journal of Applied Psychology*, 91, 1321–1339. <http://dx.doi.org/10.1037/0021-9010.91.6.1321>
- Mudrack, P. E. (2006). Understanding workaholism: The case of behavioral tendencies. In R. J. Burke (Ed.), *Research companion to working time and work addiction* (pp. 108–128). Cheltenham, UK: Edward Elgar. <http://dx.doi.org/10.4337/9781847202833.00013>
- Mudrack, P. E., & Naughton, T. J. (2001). The assessment of workaholism as behavioral tendencies: Scale development and preliminary empirical testing. *International Journal of Stress Management*, 8, 93–111. <http://dx.doi.org/10.1023/A:1009525213213>
- Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996). Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*, 81, 400–410. <http://dx.doi.org/10.1037/0021-9010.81.4.400>
- Ng, T. W., Sorensen, K. L., & Feldman, D. C. (2007). Dimensions, antecedents, and consequences of workaholism: A conceptual integration and extension. *Journal of Organizational Behavior*, 28, 111–136. <http://dx.doi.org/10.1002/job.424>
- Oates, W. (1971). *Confessions of a workaholic: The facts about work addiction*. New York, NY: World Publishing.

- Olesen, M. H., Thomsen, D. K., & O'Toole, M. S. (2015). Subjective well-being: Above emotional instability and extraversion, autonomy motivation matters. *Personality and Individual Differences, 77*, 45–49. <http://dx.doi.org/10.1016/j.paid.2014.12.033>
- Pandey, S., & Elliott, W. (2010). Suppressor variables in social work research: Ways to identify in multiple regression models. *Journal of the Society for Social Work and Research, 1*, 28–40. <http://dx.doi.org/10.5243/jsswr.2010.2>
- Park, R., & Searcy, D. (2012). Job autonomy as a predictor of mental well-being: The moderating role of quality-competitive environment. *Journal of Business and Psychology, 27*, 305–316. <http://dx.doi.org/10.1007/s10869-011-9244-3>
- Patel, A. S., Bowler, M. C., Bowler, J. L., & Methe, S. A. (2012). A meta-analysis of workaholism. *International Journal of Business and Management, 7*, 2–17. <http://dx.doi.org/10.5539/ijbm.v7n11p2>
- Paulhus, D. L., Robins, R. W., Trzesniewski, K. H., & Tracy, J. L. (2004). Two replicable suppressor situations in personality research. *Multivariate Behavioral Research, 39*, 303–328. <http://dx.doi.org/10.1207/s15327906mbr3902.7>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and remedies. *Journal of Applied Psychology, 88*, 879–903. <http://dx.doi.org/10.1037/0021-9010.88.5.879>
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research, 42*, 185–227. <http://dx.doi.org/10.1080/00273170701341316>
- Schaufeli, W. B., Shimazu, A., & Taris, T. W. (2009). 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. <http://dx.doi.org/10.1177/1069397109337239>
- Schaufeli, W. B., Taris, T. W., & Van Rhenen, W. (2008). Workaholism, burnout, and engagement: Three of a kind or three different kinds of employee well-being. *Journal of Applied Psychology, 57*, 173–203. <http://dx.doi.org/10.1111/j.1464-0597.2007.00285.x>
- Scott, K. S., Moore, K. S., & Miceli, M. P. (1997). An exploration of the meaning and consequences of workaholism. *Human Relations, 50*, 287–314. <http://dx.doi.org/10.1023/A:1016986307298>
- Sharoni, G., Shkoler, O., & Tziner, A. (2015). Job engagement: Antecedents and outcomes. *Journal of Organizational Psychology, 15*, 34–48.
- Shimazu, A., Kubota, K., & Bakker, A. B. (2015). How workaholism affects employees and their families. In I. Harpaz, & R. Snir (Eds.), *Heavy work investment: Its nature, sources, outcomes, and future directions* (pp. 171–186). New York, NY: Routledge.
- Snir, R., & Harpaz, I. (2012). Beyond workaholism: Towards a general model of heavy work investment. *Human Resource Management Review, 22*, 232–243. <http://dx.doi.org/10.1016/j.hrmr.2011.11.011>
- Snir, R., & Harpaz, I. (2015). A general model of heavy work investment. In I. Harpaz, & R. Snir (Eds.), *Heavy work investment: Its nature, sources, outcomes, and future directions* (pp. 3–30). New York, NY: Routledge.
- Snir, R., & Zohar, D. (2008). Workaholism as discretionary time investment at work: An experience-sampling study. *Applied Psychology An International Review, 57*, 109–127. <http://dx.doi.org/10.1111/j.1464-0597.2006.00270.x>
- Součková, M., Vaculík, M., & Procházka, J. (2014). Personality Traits and Workaholism. *International Journal of Humanities and Social Science, 4*, 70–79.
- Spence, J. T., & Robbins, A. S. (1992). Workaholism: Definition, measurement, and preliminary results. *Journal of Personality Assessment, 58*, 160–178. <http://dx.doi.org/10.1207/s15327752jpa5801.15>
- Taris, T. W., Schaufeli, W., & Shimazu, A. (2010). The push and pull of work: The difference between workaholism and work engagement. In A. B. Bakker, & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 39–53). Hove, UK: Psychological Press.
- Taris, T. W., Van Beek, I., & Schaufeli, W. B. (2015). The beauty versus the Beast: On the motives of engaged and workaholic employees. In I. Harpaz, & R. Snir (Eds.), *Heavy work investment: Its nature, sources, outcomes, and future directions* (pp. 121–138). New York, NY: Routledge.
- Tzelgov, J., & Henik, A. (1991). Suppression situations in psychological research: Definitions, implications, and applications. *Psychological Bulletin, 109*, 524–536. <http://dx.doi.org/10.1037/0033-2909.109.3.524>
- van Beek, I., 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*, 30–55. <http://dx.doi.org/10.1111/j.1464-0597.2011.00454.x>
- Vancouver, J. B., & Carlson, B. W. (2015). All Things in Moderation, Including Tests of Mediation (at Least Some of the Time). *Organizational Research Methods, 18*, 70–91. <http://dx.doi.org/10.1177/1094428114553059>
- Warner, R. M. (2013). *Applied statistics: From bivariate through multivariate techniques* (2<sup>nd</sup> Ed.). Thousand Oaks, CA: Sage Publications Ltd.
- Whisman, M. A., & McClelland, G. H. (2005). Designing, testing, and interpreting interactions and moderator effects in family research. *Journal of Family Psychology, 19*, 111–120. <http://dx.doi.org/10.1037/0893-3200.19.1.111>