



Workaholism and work engagement: how are they similar? How are they different? A systematic review and meta-analysis

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ABSTRACT

Workaholism and work engagement can be depicted, respectively, as the pathological and the healthy form of heavy work investment. In spite of their different definitions and outcomes on individual and organizational life, workaholism and work engagement are not clearly and adequately distinguished by scholars and researchers as they appear to show some overlapping features. The aim of this investigation was to meta-analyze available studies, selected by systematic review, on the relations between subdimensions of workaholism and work engagement. Thirty-five studies were eligible for analysis. Associations emerged between Working Excessively and Absorption ($g = .34$), Working Compulsively and Absorption ($g = .28$), and Working Excessively and Dedication ($g = .14$). Moreover, the results were not influenced by publication bias and showed nationality to be a significant moderator. Overall, these findings suggest that further research is necessary to extend our knowledge of workaholism, work engagement, and the relationship between the two, in order to disentangle commonalities and differences between them.

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Research looking at the relation between workaholism and work engagement has traditionally focused on these constructs as two different forms of heavy investment in work (Birkeland & Buch, 2015; del Libano, Llorens, Salanova, & Schaufeli, 2012; Gorgievski & Bakker, 2010; Schaufeli, 2016; Schaufeli, Taris, & Bakker, 2006; Snir & Harpaz, 2012). To date, however, the distinction between them remains inadequately clarified (Douglas & Morris, 2006; Friedman & Lobel, 2003; Schaufeli et al., 2006; Schaufeli, Taris, & van Rhenen, 2008).

Questions about workaholism and work engagement have directed scholars' and researchers' efforts towards gaining a more subtle understanding of the nature of these work attitudes, first separately, then in tandem. More recently, part of the scientific debate has pointed up the opportunities in exploring comparisons between the two (e.g., Schaufeli et al., 2008; Shimazu & Schaufeli, 2009); indeed, even though workaholism and work engagement pertain respectively to negative and positive involvement in work, a portion of their meaning might overlap.

A more specific question arises when we look at the different patterns of correlation between the two constructs emerging from empirical research on the topic: that is, a number of studies display associations that diverge in sign and magnitude, for example ranging from positive to negative correlations and from nonsignificant or null effect size to moderate or strong effect size (Birkeland & Buch, 2015; Clark, Michel, Zhdanova, Pui, & Baltes, 2016; Schaufeli, Shimazu, & Taris, 2009; Schaufeli et al., 2008; Shimazu & Schaufeli, 2009; Simbula & Guglielmi, 2013; van Beek, Hu, Schaufeli, Taris, & Schreurs, 2012; van Wijhe, Peeters, & Schaufeli, 2011). And yet, current research still fails to give any in-depth consideration to this heterogeneity.

In this paper, we first summarize the main definitions and models of workaholism and work engagement; then, we present a meta-analysis of correlations between their subdimensions; further, we explore the moderating effect of nationality, taking into account contextual/cultural influences in order to disentangle similarities and differences between the constructs.

1. Workaholism

Being a workaholic, as understood from the initial definition provided by Oates (1971), does not only imply working for an excessive time, since a simple count of working hours is inadequate to differentiate a workaholic from other workers. Rather, the core distinction is to be found in the attitude individuals have towards their work (Machlowitz, 1977). Aware of this aspect, Spence and Robbins (1992) stated 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 about not working" (p. 161). This conceptualization had considerable influence on successive research because it introduced the so-called "workaholic triad". This three-component model allowed researchers to individuate workaholics among other types of workers and is reflected in the three scales of the Workaholism Battery (WorkBat), the instrument Spence and Robbins developed to measure workaholism. According to the triad, a workaholic profile is defined by high work involvement, high drive, and low enjoyment of work.

Moreover, workaholism concerns such a degree of involvement in work that other life spheres are neglected, due not to

the requirements of the specific job or organization but to motives that are internally perceived by these individuals (Porter, 1996). Thus, work addiction is equivalent to an obsessive–compulsive disorder, since a person cannot stop or reduce her or his work habits and this has serious consequences for all their other, nonwork activities (Robinson, 1998).

In summary, although from an external point of view workaholic behaviour might be seen simply as hard working or overworking (del Libano, 2011; Douglas & Morris, 2006; Scott, Moore, & Miceli, 1997), the excessive amount of time and energy dedicated to work is not justified by need for money or organizational demands (Harpaz & Snir, 2003). Rather, it is motivated by something workaholics feel inside: a compulsion to work (Robinson, 1998; Spence & Robbins, 1992). According to Snir and Harpaz (2012), workaholism stems from an uncontrollable, stable, internal cause, and "every workaholic is a heavy work investor, but not every heavy work investor is a workaholic" (p. 232).

A different perspective is presented by Schaufeli et al. (2006), who offer a two-dimensional model of work addiction that encompasses the factors of *working excessively* (WE) and *working compulsively* (WC): the former refers to the overt manifestation or behavioural component of hard working, which is spending too much time on work-related activities; the latter points to the covert cognitive processes relating to the underlying compulsive push to work and the typical sense of guilt experienced by a workaholic when not working—a characteristic that highlights the addictive side of workaholism (Schaufeli, Taris, & Bakker, 2008). This perspective forms the basis of the Dutch Work Addiction Scale (DUWAS; Schaufeli et al., 2009), which has become probably the most used tool in quantitative research on this topic.

1.1. Individual and organizational outcomes of workaholism

Being addicted to work has consequences both in an individual and in an organizational context. As regards individual well-being, workaholics tend to report lower levels of perceived mental or physical health than do other workers (Andreassen, 2014; del Libano, 2011; Shimazu, Schaufeli, & Taris, 2010). They often experience emotional or cognitive exhaustion (Taris, Schaufeli, & Verhoeven, 2005), lose sleep, and are more likely to suffer cardiovascular problems and to report physical aches due to lack of exercise and leisure activities (Andreassen, Hetland, Molde, & Pallesen, 2011; Fassel, 1990; Kubota et al., 2010; Ng, Sorensen, & Feldman, 2007). Fassel (1990) describes considerable escalation of symptoms typically associated with addictive behaviour: it starts with distress and increasing amounts of work, and is followed by awareness of this and strenuous attempts to change, worsening social relations, and chronic physical symptoms that could even lead to death. Furthermore, with regard to balancing different areas of life, workaholism is significantly associated with work–life conflict (Bonebright, Clay, & Ankenmann, 2000; Di Stefano & Gaudiino, 2018; Shimazu & Schaufeli, 2009), and poor social relationships (Ng et al., 2007).

As for organizational outcomes, some aspects relating to workaholism can manifest in positive ways, especially from the

perspective of a worker's superiors (Burke, 2001; Friedman & Lobel, 2003; Ng et al., 2007): managers may have an interest in promoting excessive working among employees, establishing a reward system that favours workaholic behaviour. Nonetheless, the realistic consequences of work addiction are explained by Ng et al. (2007), who underscore the difference between the short and long term: the short-term consequences of heavy investment in work can be positive and productive for organizations and bring success to the individual worker, whose performance is rewarded and approved; but, from a long-term perspective, the ongoing poor health, lack of behavioural control, inability to delegate and difficulty trusting co-workers (Porter, 1996; Schaufeli et al., 2008; Spence & Robbins, 1992) can cause more deleterious problems than productive outcomes for organizations.

2. Work engagement

The concept of personal engagement at work was first introduced by Kahn (1990). According to Kahn, work engagement can be seen as a process by which people regulate the investment of their energy and their selves in their work role performances. Furthermore, the processes of expressing oneself through one's roles are shaped by three psychological conditions, namely meaningfulness, safety, and availability. Rothbard (2001), partially inspired by Kahn's (1990) conceptualization, defined engagement as a two-dimensional construct comprising attention (the cognitions and time spent thinking about one's role at work) and absorption (the intensity of one's focus on one's role at work).

Applying a different approach, Schaufeli, Salanova, González-Romá, and Bakker (2002) define work engagement as a mental state relating to work consisting of three positive dimensions and involving relatively stable affects and cognitions: the first, *vigour* (VI), is the energy level that sustains intense effort in work, permitting people to overcome difficulties and challenges in their job; the second, *dedication* (DE), relates to the feelings and thoughts that identify individuals and make them proud, involved and enthusiastic about their work; the last, *absorption* (AB), involves intense concentration in their work to the extent that individuals have difficulty detaching themselves from it and feel that time passes faster than normal. This is the most cited model in the literature on work engagement (see Bailey, Madden, Alfes, & Fletcher, 2017), and has led to the development of the most used assessment instrument in empirical research in this area: the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003). Engaged workers pursue their work activities with genuine will, a sense of endorsement and autonomous importance; moreover, such deep involvement in their work appears to occur without hindering other spheres of personal life (Vallerand et al., 2003), as revealed in the next section.

2.1. Individual and organizational outcomes of work engagement

Engaged workers are described as enthusiastic and fulfilled by their work activities, and say that they have fun in their job (Schaufeli et al., 2002; Shimazu & Schaufeli, 2009; Taris, Schaufeli, & Shimazu, 2010). Hence, from an affective perspective, work

engagement is strongly associated with positive emotions and affective regulation (Bakker & Oerlemans, 2011; Binnewies & Fetzter, 2010; Gorgievski & Bakker, 2010; van Wijn, Peeters, Schaufeli, & Ouwenel, 2013). In keeping with this, the VI such workers show in their tasks appears to be associated with good perceived health and higher satisfaction (Schaufeli et al., 2008; Shimazu, Schaufeli, Kubota, & Kawakami, 2012), more personal resources (Bakker & Demerouti, 2008) and better performance than that of disengaged colleagues (Bakker, 2009; Gorgievski, Bakker, & Schaufeli, 2010; Schaufeli et al., 2006; Simpson, 2009). Thus, they bring about potentially higher returns for their organizations (Bakker & Schaufeli, 2008; Langford, 2010). In particular, the literature reveals a positive link between engagement and a variety of performance outcomes, such as team performance, customer loyalty, in-role and extra-role performance, quality of care, and service quality (see Bailey et al., 2017). Furthermore, research has found connections between engagement and health, showing either a positive relation between work engagement and good health outcomes (e.g., Freney & Fellenz, 2013; Sonnentag, Mojza, Binnewies, & Scholl, 2008) or a negative association between engagement and poor health outcomes (e.g., Buys & Rothmann, 2010; Hallberg & Schaufeli, 2006).

3. Overlapping concepts?

The introduction of work engagement to the literature has helped to dispel confusion over the possible existence of a positive side to workaholism, as demonstrated in several oxymoronic expressions, such as "the happy workaholic" (Friedman & Lobel, 2003) or "enthusiastic workaholics" (Buelens & Poelmans, 2004; Spence & Robbins, 1992). Rather than get hung up on the dilemma of attributing even a partially positive connotation to something described as an obsession, a compulsive tendency (Porter, 1996; Spence & Robbins, 1992) or a pathological form of overwork (Andreassen, 2014), it is useful to be able to refer to an independent construct that has its own meaning and is suggestive of a different phenomenon (Schaufeli et al., 2008). Nonetheless, it is not always easy to draw a clear

distinction between workaholism and work engagement, and doubts persist as a result of certain characteristics they appear to share (Shimazu & Schaufeli, 2009; Taris et al., 2010).

High-intensity working is a behaviour shared by addicted and engaged workers, due to the tendencies of both to go beyond the demands of the job and exceed the usual working day limits set by their organizations or superiors. Research has revealed a moderate positive correlation between WE—but not WC—and work engagement level (Gorgievski et al., 2010; Schaufeli et al., 2006). This supports the idea that compulsive tendencies may be key to separating workaholism from work engagement, while excessive working is manifestly the dimension they share (Schaufeli et al., 2006).

In addition, AB is often found to be partially correlated with workaholism measures (e.g., del Libano, 2011; Hakanen, Rodríguez-Sánchez, & Perhoniemi, 2012; Schaufeli et al., 2008). Far from being surprising this is conceptually supportable, since to be absorbed in work is defined as "being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work" (Schaufeli et al., 2002, p. 75). Indeed, this condition is presumably experienced by workaholics too, although we can suppose that addicted workers might perceive the consequences of their AB more negatively than might engaged workers, whose VI and DE are likely to cause them to associate the experience with a positive emotional state (Schaufeli et al., 2002). Interestingly, according to one addiction theory perspective, there is evidence of a correspondence between workaholism and other forms of addiction. This includes, for instance, the conflicts in social relationships and unpleasant feelings experienced by addicts when they are prevented from indulging in the addictive activity (Andreassen, Griffiths, Hetland, & Pallesen, 2012; Griffiths, 2005).

Figure 1 presents a simple graph visually summarizing our analysis.

The overlapping features of workaholism and work engagement revealed by some studies (e.g., Gorgievski et al., 2010; Schaufeli et al., 2006, 2008) suggest that theoretical and

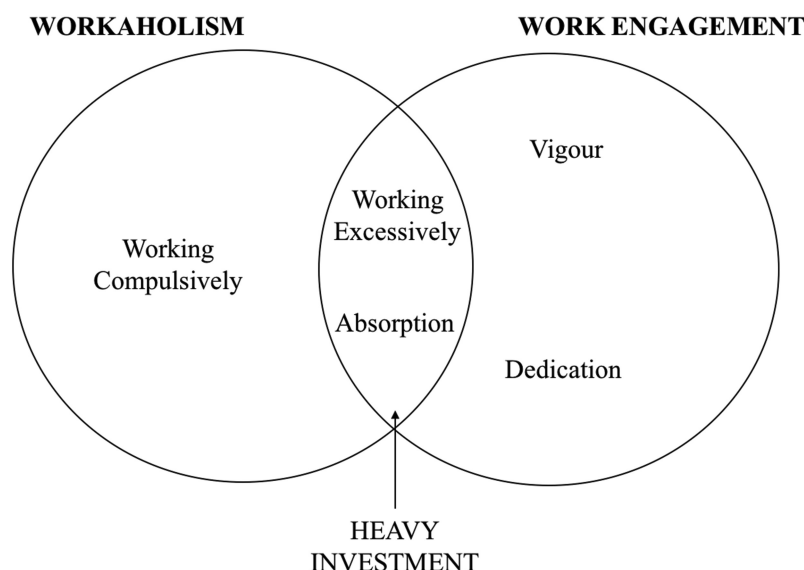


Figure 1. Summary of similarities and differences between workaholism and work engagement.

empirical exploration aimed at disentangling their characteristics could lead to a more satisfactory understanding of these concepts: it is precisely this aim that we set out to pursue in the current paper.

We make various predictions of associations between compulsive working and the three engagement sub-dimensions. First, although the definition of engaged workers excludes a compulsive component from the typical experiences of such employees (Schaufeli & Salanova, 2011; Schaufeli et al., 2006), we believe that from a conceptual and operative point of view AB might show connections with a compulsory sense of drive to work, provided that the definition of AB includes that "...one has difficulties with detaching oneself from work" (Schaufeli et al., 2002, p. 75); we suspect that such "difficulties" could be confusing when trying to distinguish workaholism and work engagement. Moreover, DE and WC could belong to separate conceptual areas, appearing very different in nature, provided that DE involves a positive attitude towards one's job and WC is defined negatively as feeling obliged to work and obsessively thinking about it (Schaufeli et al., 2008; Shimazu et al., 2010). Likewise, we expect VI to show no relation with this component of workaholism, because both refer to different conceptual and operative areas, namely feeling full of energy at work and drive to work, respectively (Schaufeli et al., 2009, 2008). Hence, we offer the following prediction:

H₁: Working compulsively is positively related to absorption (a) but is not significantly related to dedication (b) or vigour (c).

Since the WE factor deals with the behavioural dimension of working harder or longer than required (Schaufeli et al., 2008), we presume that it is linked to what is indicated by the work engagement sub-dimensions of VI and DE—given that VI refers to intense energy perceived by individuals in relation to their work, whereas DE is based on feelings of enthusiasm, inspiration and pride at doing a particular job (Schaufeli et al., 2002, 2008), as discussed earlier. VI and DE could therefore support intense effort at work. The other dimension of engagement, AB, is defined as "being fully concentrated and deeply engrossed in one's work, whereby time passes quickly..." (Schaufeli et al., 2002, p. 75). Hence, such immersion in work might reasonably cause employees to spontaneously prolong their working day. Consequently, we hypothesize that:

H₂: Working excessively is positively related to absorption (a), dedication (b) and vigour (c).

4. Cultural specificity as a moderator of the correlation between workaholism and work engagement

As mentioned in our introduction, empirical research has thrown up contradictory results on associations between workaholism and work engagement. Even in those studies where such confusion is explicitly reported, the majority do not present it as a research problem to be confronted. Specifically, to the best of our knowledge a negative

correlation between workaholism and work engagement has been found in some cases (e.g., Hakanen et al., 2012; Schaufeli et al., 2009), while others have reported a null or nonsignificant association (e.g., Clark et al., 2016; Schaufeli et al., 2008; Simbula & Guglielmi, 2013; van Wijhe, Peeters, Schaufeli, & van Den Hout, 2011). A relatively larger group of studies has shown positive correlations (e.g., Birkeland & Buch, 2015; Caesens, Stinglhamber, & Luypaert, 2014; Sandrin & Gillet, 2016; Shimazu, Schaufeli, Kamiyama, & Kawakami, 2015; Upadyaya, Vartiainen, & Salmela-Aro, 2016; van Beek et al., 2012). It can be observed that these studies use data collected from various countries national contexts. For that reason, we believe that nationality could play an interesting role. In particular, different national contexts often correspond to different cultures, which can in turn influence people's lifestyles, values, beliefs, and habits (Hofstede, Hofstede, & Minkov, 2010). For our research specifically, one relevant aspect of nationality might be how culture changes the way heavy work investors perceive and evaluate their experiences in terms of, for example, being devoted to or obsessed by one's job, working intensely or feeling energetic at work. For instance, factors such as having a Protestant work ethic (Furnham, 1984) might be involved, given that work-related ideologies are seen as responsible for cross-national differences in attitudes towards work and productivity (Czerw & Grabowski, 2015; Hofstede et al., 2010; Kaasa, 2016). Similarly, one might hypothesize that workers from Protestant countries, like the United States, Germany, or the Netherlands (Snir & Harpaz, 2004), are more likely to show higher correlations between workaholism and work engagement components compared with workers from countries with a different cultural background, because we expect these variables to overlap in cultures that strongly and positively emphasize investment in work. However, matters appear more complicated, and several alternative perspectives have been put forward. For instance, Snir and Harpaz (2009) examined heavy work investment across various countries, based on previous cross-cultural frameworks (Hofstede et al., 2010; Schwartz, 1999), and found that those countries scoring higher on survival values, mastery and masculinity dimensions tended to show high levels of work investment. Likewise, Baruch (2011) advanced a series of propositions concerning cultures and workaholism, arguing that work addiction is likely to be viewed in positive terms where the prevailing culture is characterized by, for example, higher power distance, uncertainty avoidance, masculinity and individualism (Hofstede et al., 2010). Nevertheless, it is hard to group countries showing these features together in a single, well-defined cultural category (e.g., Protestant culture), and at present the findings and suggestions in the literature lack consistency and agreement. Moreover, the number of countries in these cross-national studies remains insufficient to represent a range of relevant worldwide geographical areas. Hence, we believe that the information available is too limited to hypothesize how national culture might affect the association between workaholism and work engagement. Accordingly, the secondary aim of the current

study was to explore nationality's contribution to the correlation between workaholism and work engagement, through the following:

Exploratory question: *What is the role of nationality in influencing the relation between workaholism and work engagement?*

5. Method

5.1. Identification and selection of studies

A systematic search strategy was used to identify relevant studies on workaholism and work engagement relations. After an initial open search of the literature, ERIC, MEDLINE & PsycInfo (via EBSCO), Google Scholar, Scopus, and the Web of Science databases were searched in January 2019 for published studies using the following keywords: ["workaholi*" OR "work addict*" OR "work* excessive*" OR "work* compulsive*" OR "heavy work invest*" AND ["engage*" OR "work engage*" OR "job engage*" OR "work involve*" OR "job involve*" OR "vigor*" OR "vigour*" OR "dedicat*" OR "absorpt*"] (the search was performed at title, abstract, keyword and topic levels). Then, our initial database of studies was supplemented by asking external experts for citations of relevant in-press journal articles. A total of 454 studies

were thus retrieved. Of these (30 unpublished), 137 studies were duplicates, leaving 317 (30 unpublished) abstracts for further evaluation (see Figure 2). A fundamental criterion for eligibility of studies was the instruments they used to assess workaholism and work engagement: we selected only those records that included measures from the DUWAS (Schaufeli et al., 2006, 2008) for workaholism and from the UWES (Schaufeli, Bakker, & Salanova, 2006; Schaufeli et al., 2002) for work engagement. Consequently, only studies providing measures of correlations between the subscales of WE, WC, VI, DE, and **AB** were included in the final database.

The authors performed the literature searches together, examining studies identified in the databases on the basis of title, abstract, and keyword and retaining those that could feasibly be included. After generating a preliminary list of potentially eligible studies, the authors separately examined the full text of each study to decide whether it could be selected for meta-analysis. Every disagreement was resolved through discussion.

The meta-analysis presented here is based on data extracted from 35 samples (derived from 27 papers; 2 unpublished) that met the inclusion criteria (see Appendix A and references marked with an asterisk in the reference list).

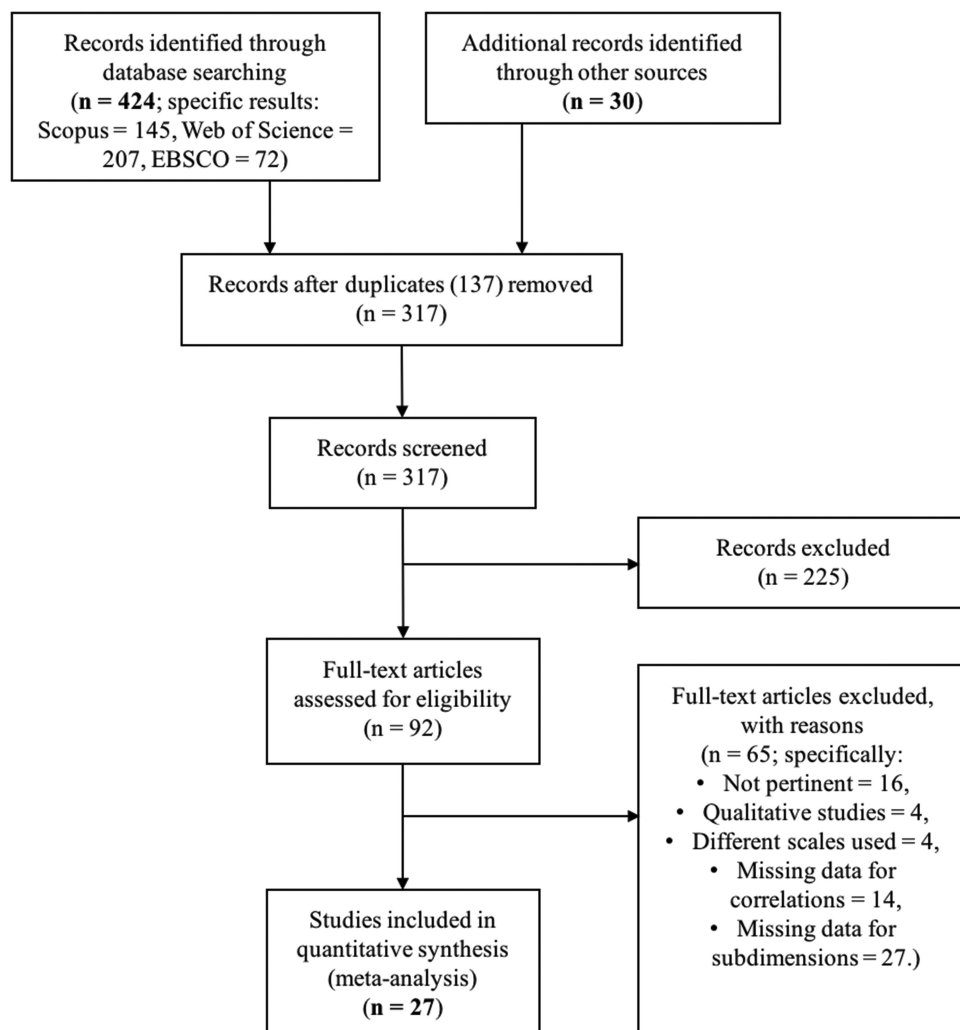


Figure 2. PRISMA flow diagram describing search results and study selection.

The following information was extracted from each study: (a) authors and publication year; (b) characteristics of samples, where available (age, gender, organizational tenure, nationality); (c) a correlation matrix of workaholism and work engagement subscales.

5.2. Data analyses

For each study, we calculated Hedges' g effect size, based on Pearson's r correlation indexes and sample sizes; since we were dealing with correlational studies, we applied transformation formulas to convert the r coefficient to g (Lipsey & Wilson, 2001). Based on conventional standards, effect sizes of g equal to .20, .50, and .80 were considered small, medium, and large, respectively (Cohen, 1988). The effect sizes were computed in ProMeta (Version 2.1). Random-effects models were used in all the analyses, as they account for the amount of variance caused by differences between associations, as well as differences among participants within associations. ProMeta also computed 95% confidence intervals (CI) around the point estimate of an effect size. The Q and I^2 statistics were used to assess the heterogeneity of studies: a significant Q value indicates a lack of homogeneity of findings among studies. In the case of nationality, heterogeneity analyses were not performed when only one sample was available for a given country (i.e., Israeli, Polish, and Turkish samples).

Publication bias was estimated using a funnel plot of effect size against standard error for asymmetry and by using Begg and Mazumdar's rank correlations and Egger's regression intercept test. Statistics reported in this meta-analysis conformed to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Moher, Liberati, Tetzlaff, & Altman, 2009) statement.

5.3. Moderator analyses

We examined how the size of association between the subscales of workaholism and work engagement varied as a function of mean age (years), gender (percentage of men), mean organizational tenure (years), and nationality. We also examined bivariate associations between possible moderators and effect sizes. Continuous moderators (i.e., gender—represented in continuous form in terms of % of men—mean age, mean organizational tenure) were evaluated using meta-regression, while the categorical moderator (i.e., nationality) was entered as a grouping variable in the effect size calculations.

Going into more detail, age was included among the moderating variables to be examined; because problems of ageing are a crucial challenge in human resources theories and practices, age could have an influence on relevant work-related dimensions, such as work motivation and satisfaction (Kooij, De Lange, Jansen, Kanfer, & Dijkers, 2011), or just intensity of investment in work (e.g., Kim & Kang, 2017; Ramos, Jenny, & Bauer, 2016; Taris, van Beek, & Schaufeli, 2012).

We explored the possible moderating role of gender because, despite the progress that has been made to establish equality between women and men in society, it is plausible to hypothesize that some differences persist in the way men and women perceive variables relating to jobs and organizations

(e.g., Aziz & Cunningham, 2008; Burke, Burgess, & Fallon, 2006; Burke, Koyuncu, & Fiksenbaum, 2009). Likewise, another variable examined as a possible moderator was organizational tenure, because of its possible effects on commitment, organizational citizenship behaviour and turnover (Kraemer & Gouthier, 2014; Mathieu & Zajac, 1990; Ng & Feldman, 2011).

6. Results

6.1. Working compulsively—absorption

The meta-analysis (see Table 1) revealed a significant, medium-size association between WC and AB (31 samples; 52,173 subjects; $g = .28$, 95% CI [.21, .36], $p = .000$; Figure 3 presents the forest plot). Significant heterogeneity was indicated by the Q and I^2 statistics, $Q(30) = 439.53$, $p = .000$; $I^2 = 93.17$.

The funnel plot (see Figure 4), Begg and Mazumdar's rank correlations test ($Z = -.31$; $p = .76$) and Egger's regression intercept test (intercept = 1.96, $t = 1.50$, $p = .14$) showed no evidence of publication bias.

No moderators emerged as significant (age: $\beta = .52$, $p = .45$; gender: $\beta = .14$, $p = .20$; organizational tenure: $\beta = -.02$, $p = .21$), except for nationality, $Q(8) = 61.94$, $p = .000$. In particular, Italian samples showed a nonsignificant effect size, while in Dutch samples the effect size was significant but small compared with Polish and Turkish samples for whom it was medium-large (see Table 2). The Finnish samples subgroup was homogenous ($Q(5) = 7.81$, $p = .17$).

6.2. Working compulsively—dedication

The analysis of 35 studies (53,059 subjects) (see Table 1) revealed no association between WC and DE ($g = .01$, 95% CI [−.09, .11], $p = .90$) in a heterogeneous set of studies, $Q(34) = 1026.50$, $p = .000$; $I^2 = 96.69$. Figure 5 presents the forest plot.

Age was a significant moderator ($\beta = .98$, $p = .006$), showing a greater magnitude of effect size for younger people, while gender ($\beta = -.04$, $p = .58$) and organizational tenure ($\beta = -.17$, $p = .88$) were not. In the case of nationality, significant differences in correlations emerged, $Q(8) = 329.18$, $p = .000$: the Chinese, Japanese, and Turkish samples showed the highest positive correlations, while Finnish, Italian, and Dutch samples showed negative effect sizes (see Table 3). The Finnish and Japanese samples subgroups lacked heterogeneity (respectively: $Q(5) = 2.12$, $p = .83$; $Q(4) = 5.90$, $p = .21$).

Table 1. Workaholism and work engagement subscales correlations.

Correlations	Random-effects model			Heterogeneity	
	k	N	g [95% CI]	Q	I^2
WC-AB	31	52,173	.28 [.21, .36]*	439.53	93.17*
WC-DE	35	53,059	.01 [−.09, .11]	1,026.50	96.69*
WC-VI	35	53,059	−.04 [−.14, .05]	915.76	96.29*
WE-AB	31	52,173	.34 [.25, .43]*	723.93	95.86*
WE-DE	35	53,059	.14 [.08, .21]*	397.61	91.45*
WE-VI	35	53,059	.04 [−.03, .12]	608.59	94.41*

Note. WC = Working Compulsively; WE = Working Excessively; AB = Absorption; DE = Dedication; VI = Vigour; k = number of samples; N = number of participants; ES = Hedges' g effect size; CI = confidence interval; Q , I^2 = heterogeneity statistics.

* $p < .001$.

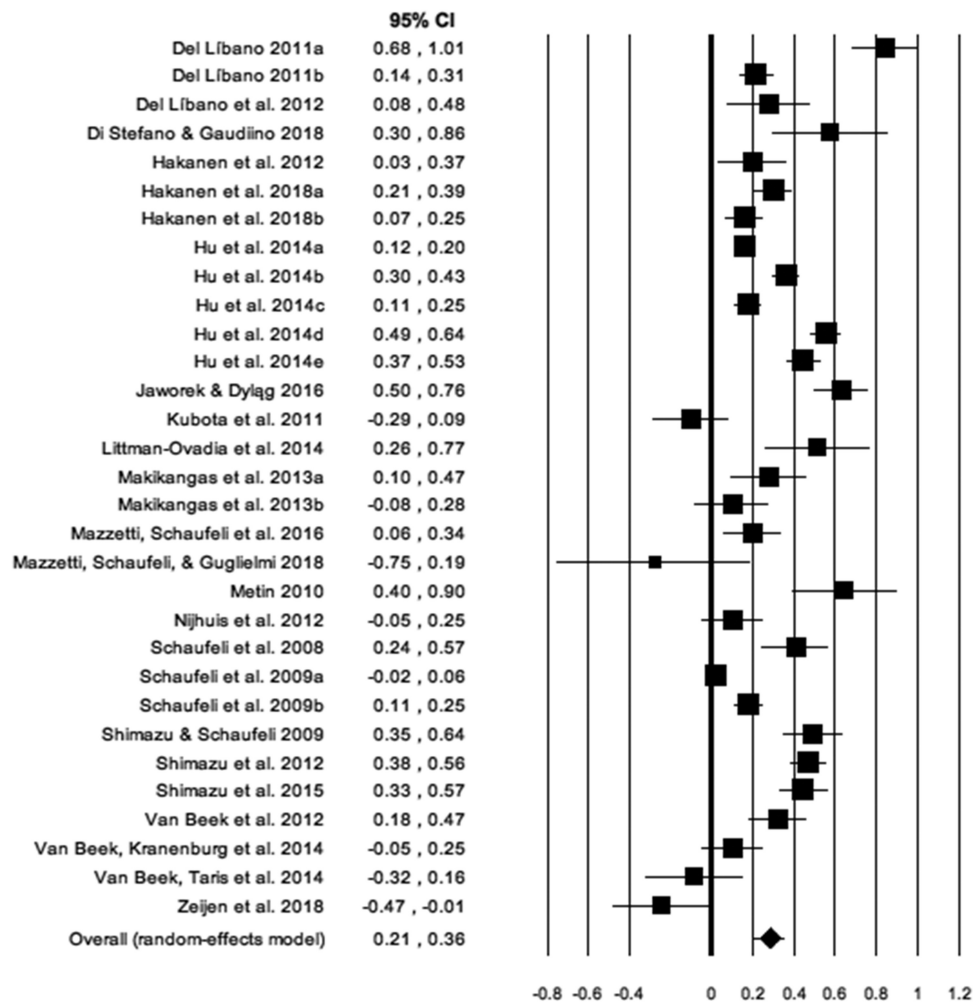


Figure 3. Forest plot of meta-analysis of correlations between working compulsively and absorption.

We found no evidence of asymmetry using the funnel plot (see Figure 6), Begg's rank test ($Z = .01$; $p = .99$) or Egger's regression test (intercept = 1.34, $t = .76$, $p = .45$).

6.3. Working compulsively—vigour

The analysis of 35 samples (53,059 subjects in total) (see Table 1) showed a nonsignificant association between WC and VI ($g = -.04$, 95% CI $[-.14, .05]$, $p = .42$) in a heterogeneous set of studies, $Q(34) = 915.76$, $p = .000$; $I^2 = 96.29$. Figure 7 shows the forest plot.

No publication bias was detected by the funnel plot (see Figure 8), the Egger unweighted regression asymmetry test (intercept = 1.12, $t = .68$, $p = .50$) or Begg and Mazumdar's test ($Z = .14$; $p = .89$).

Effect sizes varied on the basis of age of sample ($\beta = 1.10$, $p = .002$), with studies of younger participants showing bigger correlations between WC and VI; conversely, effect sizes did not vary in relation to the percentage of men in the sample ($\beta = -.14$, $p = .42$) or organizational tenure ($\beta = -.25$, $p = .45$). Nationality of the sample had a significant impact on effect sizes, $Q(8) = 168.33$, $p = .000$ (see Table 4), with Finnish and Dutch samples showing

significant negative effect sizes, Turkish and Chinese samples significant positive effect sizes and other nationalities small or nonsignificant correlations. The Dutch sample subgroup lacked heterogeneity, $Q(9) = 7.73$, $p = .56$.

6.4. Working excessively—absorption

The meta-analysis (see Table 1) showed a significant, medium-size association between WE and AB (31 samples; 52,173 subjects; $g = .34$, 95% CI $[.25, .43]$, $p = .000$, see Table 1; Figure 9 presents the forest plot). Significant heterogeneity was indicated by the Q and I^2 statistics, $Q(30) = 723.93$, $p = .000$; $I^2 = 95.86$.

The funnel plot (see Figure 10), Begg and Mazumdar's rank correlations test ($Z = -.61$; $p = .54$), and Egger's regression intercept test (intercept = 1.63, $t = .95$, $p = .54$) showed no evidence of publication bias.

No moderators emerged as significant (age: $\beta = .07$, $p = .28$; gender: $\beta = .22$, $p = .37$; organizational tenure: $\beta = .05$, $p = .06$), except for nationality, $Q(8) = 38.95$, $p = .000$ (see Table 5), with the Italian sample showing non-significant effect sizes. The Chinese and Finnish samples showed a lack of homogeneity among studies, $Q(1) = 1.53$, $p = .22$; $Q(5) = 10.44$, $p = .06$, respectively.

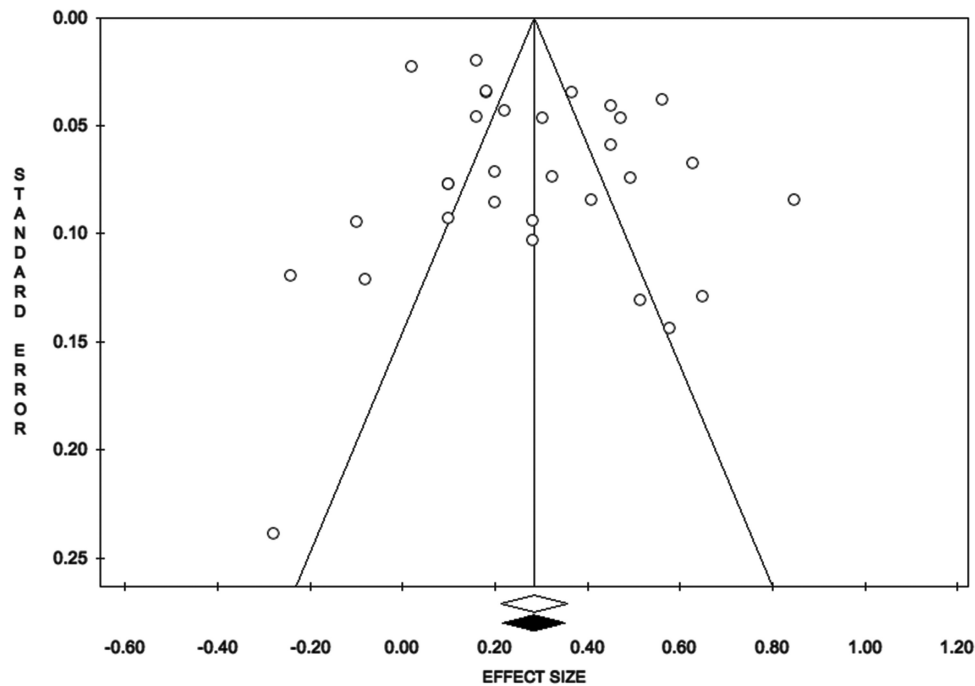


Figure 4. Funnel plot of meta-analysis of correlations between working compulsively and absorption.

Table 2. Working compulsively and absorption correlations in different nationality samples.

Sample	Random-effects model		Heterogeneity		Test of difference	
	<i>k</i>	<i>N</i>	<i>g</i> [95% CI]	<i>Q</i>	<i>I</i> ²	<i>Q</i>
Chinese	2	3,737	.45 [.22, .68]**	8.17	87.87*	61.94**
Dutch	8	22,429	.11 [.02, .20]*	51.99	86.54**	
Finnish	6	8,702	.21 [.15, .26]**	7.81	35.99	
Israeli	1	251	.51 [.26, .77]**			
Italian	3	1,076	.21 [-.16, .58]	10.61	81.15**	
Japanese	5	9,441	.30 [.13, .47]**	61.18	81.15**	
Polish	1	967	.63 [.50, .76]**			
Spanish	3	4,528	.50 [.18, .81]**	29.63	93.25**	
Turkish	1	266	.65 [.40, .90]*			

Note. *k* = number of samples; *N* = number of participants; ES = Hedges' *g* effect size; CI = confidence interval; *Q*, *I*² = heterogeneity statistics. *Q* = contrast between subgroups.

* $p < .01$; ** $p < .001$.

6.5. Working excessively—dedication

The analysis of 35 samples (53,059 subjects) revealed an association between WE and DE ($g = .14$, 95% CI [.08, .21], $p = .000$; see Table 1) of small magnitude in a heterogeneous set of studies, $Q(34) = 397.61$, $p = .000$; $I^2 = 91.45$, as depicted in Figure 11.

This meta-analysis was not accompanied by significant publication bias, as confirmed by the funnel plot (see Figure 12), Egger's unweighted regression asymmetry test (intercept = $-.46$, $t = -.42$, $p = .68$) and Begg and Mazumdar's test ($Z = -.16$; $p = .88$).

No moderators emerged as significant (age: $\beta = .53$, $p = .15$; gender: $\beta = .05$, $p = .32$; organizational tenure: $\beta = .00$, $p = .62$). Contrasting nationality subgroups yielded significant differences (see Table 6), $Q(8) = 49.21$, $p = .000$, with a nonsignificant effect size for Finnish and Italian samples and significant positive effect sizes for the other nationalities. The Finnish sample showed a significant level of homogeneity, $Q(5) = 1.02$, $p = .96$.

Table 6. Working Excessively and Dedication Correlations in Different Nationality Samples

6.6. Working excessively—vigour

The overall effect size for the total set of 35 samples (53,059 subjects) was nonsignificant ($g = .04$, 95% CI $[-.03, .12]$, $p = .18$, see Table 1; see also Figure 13 for the forest plot) in a heterogeneous set of studies, $Q(34) = 608.59$, $p = .000$; $I^2 = 94.41$.

We found no evidence of publication bias using the funnel plot (see Figure 14), Egger's unweighted regression asymmetry test (intercept = $-.47$, $t = -.35$, $p = .73$) or Begg and Mazumdar's test ($Z = .14$; $p = .89$).

No significant moderators emerged from the meta-regression analyses (age: $\beta = .63$, $p = .07$; gender: $\beta = .01$, $p = .74$; organizational tenure: $\beta = -.15$, $p = .32$). As for nationality, significant differences were apparent for effect sizes, $Q(8) = 33.63$, $p = .000$, with Chinese, Israeli, Spanish, and Turkish samples showing positive correlations, the Finnish sample showing a negative correlation and the remaining correlations being nonsignificant (see Table 7). The Chinese samples lacked heterogeneity ($Q(1) = .00$, $p = .99$).

7. Discussion

In this meta-analysis we investigated associations between the subdimensions of workaholism and work engagement. Publication bias did not affect the studies selected in terms of the associations considered. Furthermore, all the correlations displayed a significant level of heterogeneity.

Overall, our findings suggest that workaholism and work engagement are distinct constructs, yet have some components in common. This overlap comes specifically from

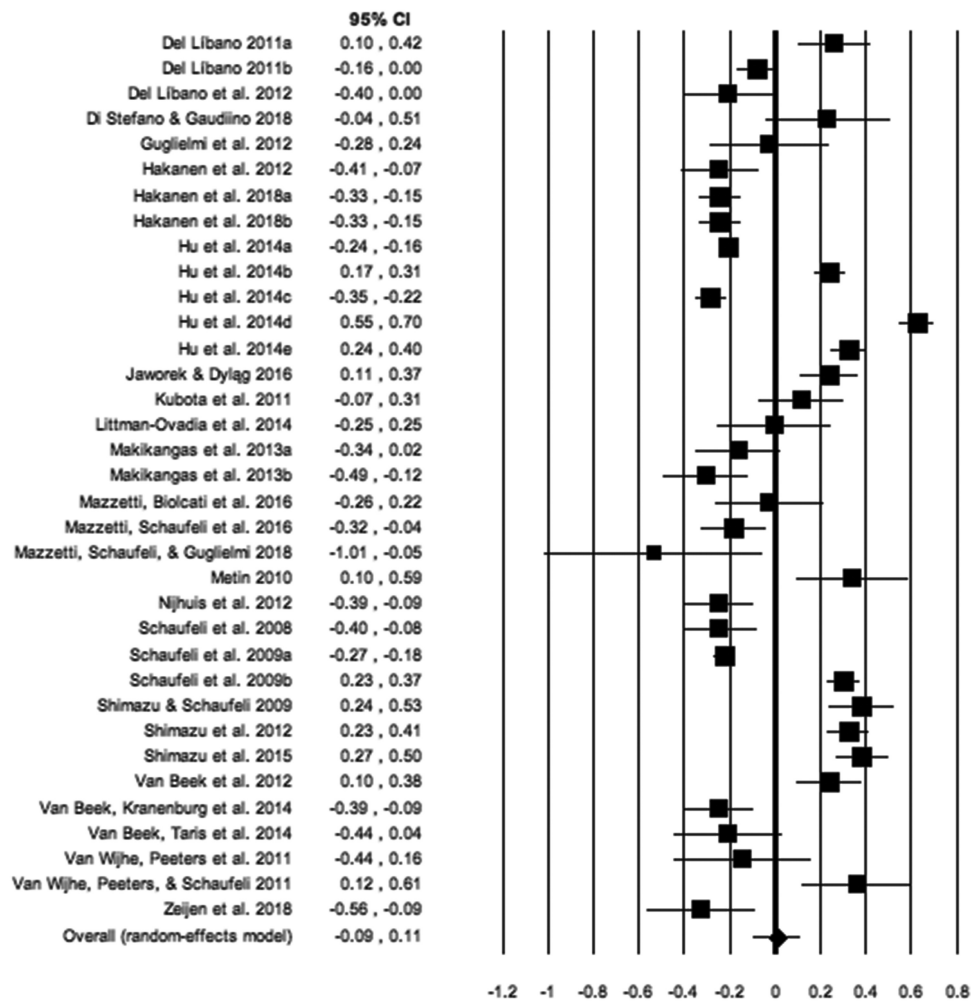


Figure 5. Forest plot of meta-analysis of correlations between working compulsively and dedication.

Table 3. Working compulsively and dedication correlations in different nationality samples.

Sample	<i>k</i>	<i>N</i>	Random-effects model		Heterogeneity		Test of difference
			<i>g</i>	[95% CI]	<i>Q</i>	<i>I</i> ²	<i>Q</i>
Chinese	2	3,737	.44	[.06, .82]*	21.97	95.45**	329.18**
Dutch	10	22,872	-.17	[-.24, -.11]**	31.20	71.15**	
Finnish	6	8,702	-.26	[-.30, -.21]**	2.12	.00	
Israeli	1	251	.00	[-.25, .25]			
Italian	5	1,569	-.07	[-.25, .12]	10.95	63.47**	
Japanese	5	9,441	.31	[.26, .37]**	5.90	32.23	
Polish	1	967	.24	[.11, .37]**			
Spanish	3	4,478	.50	[.18, .81]**	29.63	93.25**	
Turkish	1	266	.34	[.10, .59]*			

Note. *k* = number of samples; *N* = number of participants; ES = Hedges' *g* effect size; CI = confidence interval; *Q*, *I*² = heterogeneity statistics. *Q* = contrast between subgroups.

* *p* < .01; ** *p* < .001.

associations between WE and AB, and between WC and AB. However, the findings also showed a weak but significant correlation between WE and DE. Furthermore, a moderating effect was found for nationality.

Specifically, according to our hypothesis (H_{1a}), WC and AB were positively correlated, with an effect size medium in magnitude. This supports the idea that the very definition of

AB may point to an effect (i.e., difficulty in stopping working) in common with the compulsive side of workaholism, thus confounding the basic positive connotation of work engagement.

The relation expected between WC and DE (H_{1b}) was confirmed by the analyses. Feeling dedicated, proud, and enthusiastic when doing one's job is a clearly different experience from feeling pushed to work, as we hypothesized. Thus, DE helps to draw a line between an engaged worker and a work addict whose attitude towards his or her job is linked to a sense of obligation, obsession, and drive (Schaufeli et al., 2006, 2008; Spence & Robbins, 1992).

Furthermore, findings concerning correlations between WC and VI align with our initial hypothesis (H_{1c}), in that they confirm a lack of significance for this association. Accordingly, we can conclude there are no overlaps between the concepts relating to the obsessive-compulsive dimension of overwork and to a sense of vitality, strength, and energy in the workplace.

WE and AB were positively correlated, thus confirming our hypothesis (H_{2a}). Far from being surprising, this result was predictable because being absorbed in a specific activity can cause more intense time investment. Specifically, some authors have found similarities between AB and the concept of flow (Csikszentmihalyi, 1990), given that both states are

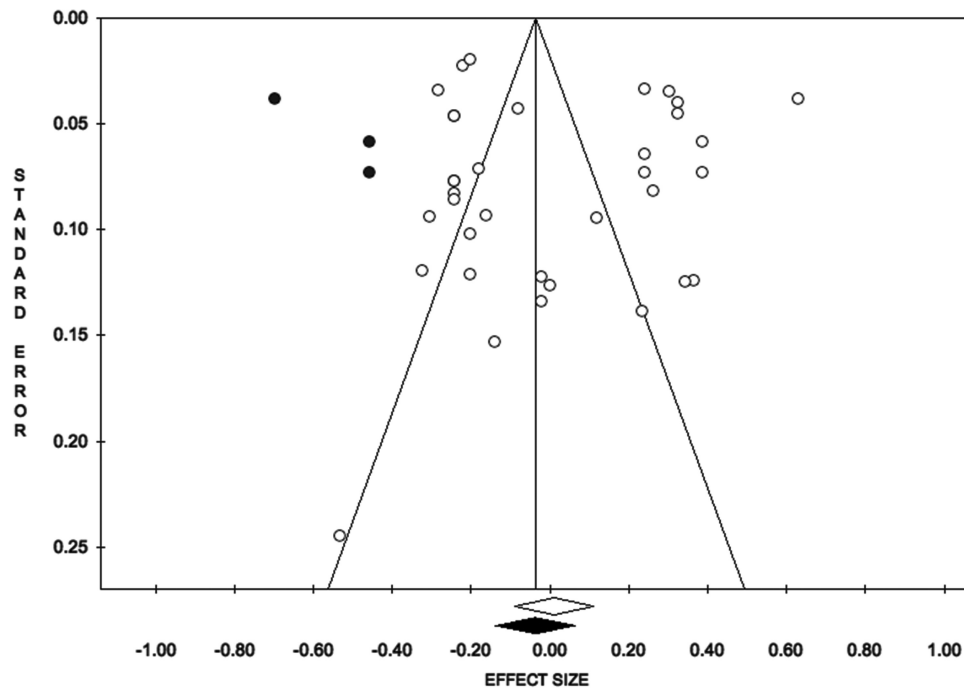


Figure 6. Funnel plot of meta-analysis of correlations between working compulsively and dedication.

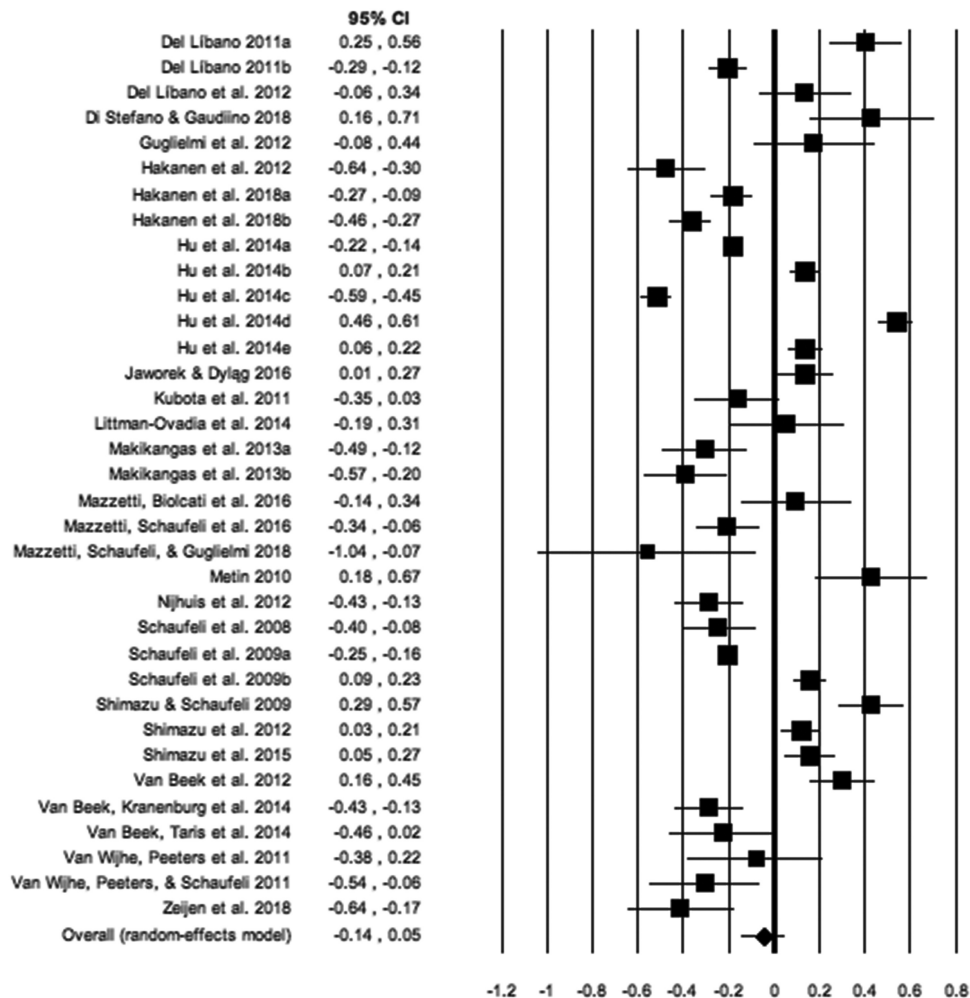


Figure 7. Forest plot of meta-analysis of correlations between working compulsively and vigour.

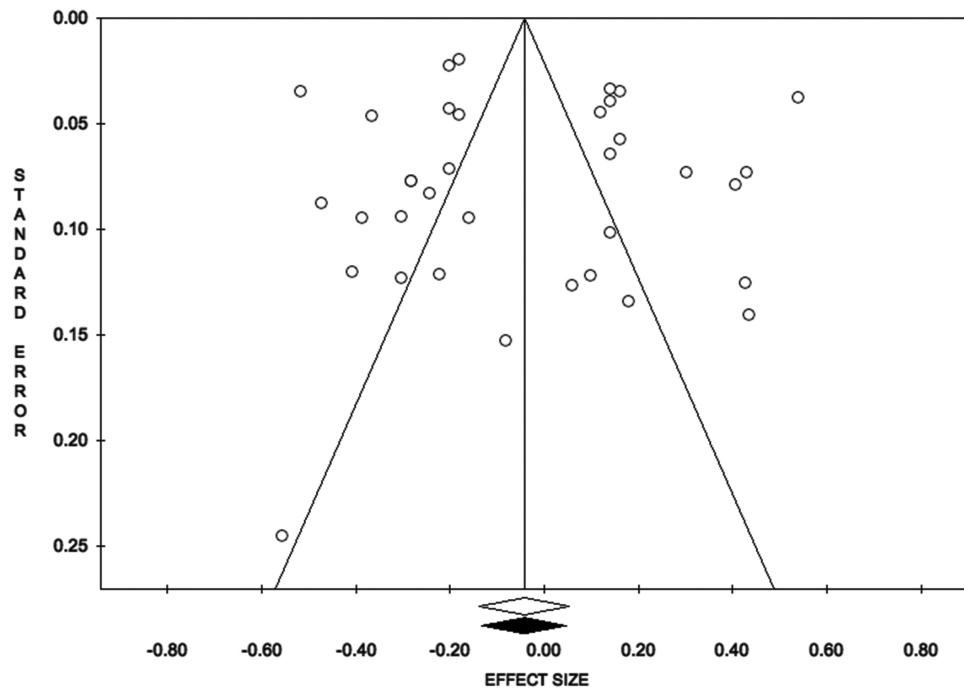


Figure 8. Funnel plot of meta-analysis of correlations between working compulsively and vigour.

Table 4. Working compulsively and vigour correlations in different nationality samples.

Sample	<i>k</i>	<i>N</i>	Random-effects model	Heterogeneity		Test of difference
			<i>g</i> [95% CI]	<i>Q</i>	<i>I</i> ²	<i>Q</i>
Chinese	2	37,37	.43 [.20, .66]***	8.10	87.65**	168.33***
Dutch	10	22,872	-.20 [-.23, -.17]***	7.73	.00	
Finnish	6	8,702	-.37 [-.50, -.25]***	35.34	85.85***	
Israeli	1	251	.06 [-.19, .31]			
Italian	5	1,569	.02 [-.26, .30]	24.66	83.78**	
Japanese	5	9,441	.11 [.04, .18]**	10.47	61.79*	
Polish	1	967	.14 [.01, .27]*			
Spanish	3	4,478	.23 [.05, .40]*	9.72	79.43**	
Turkish	1	266	.43 [.18, .67]**			

Note. *k* = number of samples; *N* = number of participants; ES = Hedges' *g* effect size; CI = confidence interval; *Q*, *I*² = heterogeneity statistics. *Q* = contrast between subgroups.

* *p* < .05; ** *p* < .01; *** *p* < .001.

concerned with forgetting the time because of intensely concentrating on an action (Salanova & Schaufeli, 2008; Schaufeli et al., 2002). Consequently, such immersion in work may be logically linked to the fact that engaged workers are more likely than nonengaged colleagues to continue working beyond the normal working day (e.g., Taris et al., 2010).

Our prediction of a positive correlation between WE and DE (*H*_{2b}) was supported by the data, but the effect size we found was only small. The weak magnitude of the association prevents us from drawing any definitive conclusion; hence, we can only speculate that this result suggests that the sense of pride engaged workers feel towards their job possibly functions as a further psychological resource, which can in turn sustain intense effort in a work activity.

Finally, with regard to the relation between WE and VI, our hypothesis of a positive relation (*H*_{2c}) was not confirmed. This could mean that the energy felt at work by some individuals

does not in fact strongly correspond to considerable investment of such energy in their work; or, in other words, people who work excessively do not always behave this way when feeling energized. Hence, from this second point of view, excessive effort in the workplace—hard working—might be seen as being independent of the status of an individual's mental or physical resources.

In summary, the current study makes an original and relevant contribution to the literature on differences between workaholism and work engagement, since it presents the first meta-analysis on this topic. Although work engagement is defined in terms of a positive work-related state that encompasses feelings of energy and fun in engaged workers (Schaufeli et al., 2006, 2002), we found that its AB component may be problematic when trying to compare and definitively distinguish work engagement from workaholism. Specifically, it appears that confusion about the overlapping conceptual zone of these two work attitudes is mainly the result of AB, since—we believe—this subdimension encompasses a mix of behavioural and cognitive features associated with a feeling that is neither necessarily positive nor neutral in nature ("being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulty detaching oneself from work"; Schaufeli et al., 2002, p. 75). AB appeared to be related to both factors of the two-dimensional model of workaholism, that is, WE and WC. These results are in accordance with previous findings, suggesting that AB contributes less than vigour and DE to work engagement, due to its double loading on workaholism (Salanova, Llorens, Cifre, Martínez, & Schaufeli, 2003; Schaufeli, 2016; Schaufeli & Salanova, 2011; Schaufeli et al., 2008).

With regard to the control variables, subjects' age was found to play a significant role in associations between workaholism and work engagement sub-dimensions in only two cases (WC–DE and WC–VI). The other possible moderators

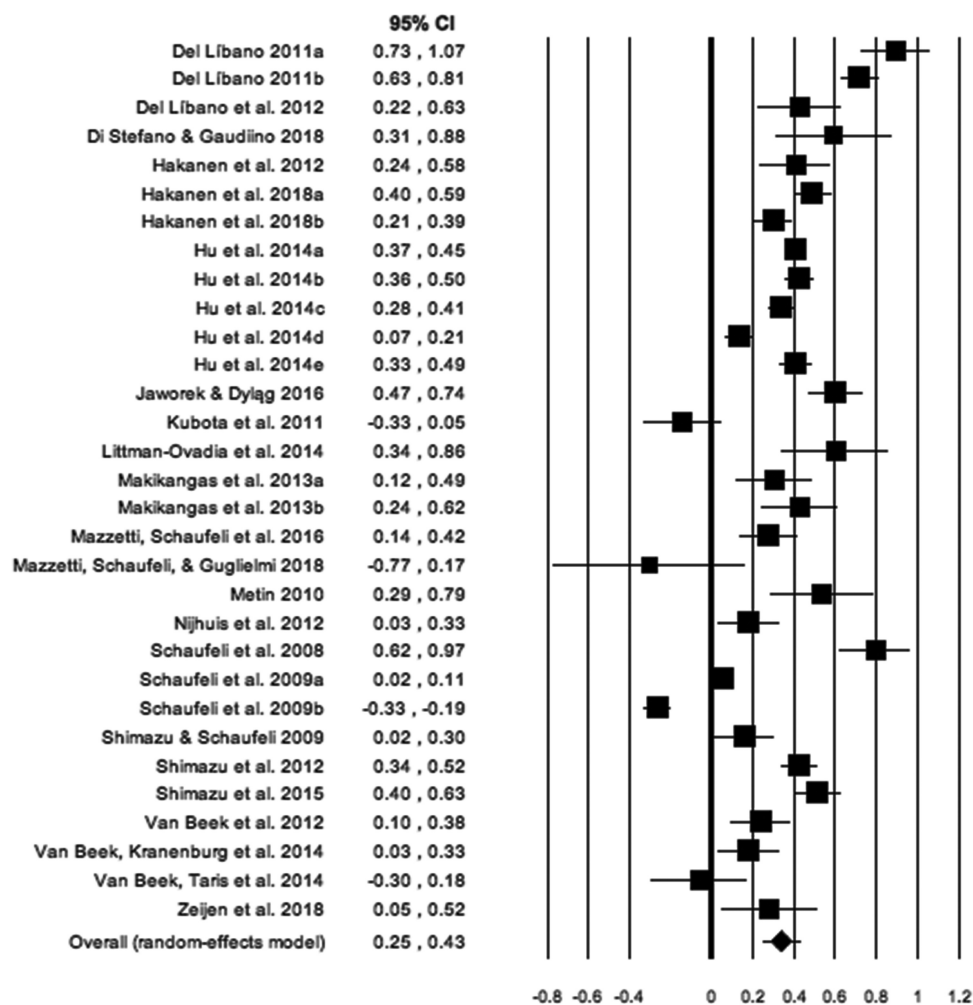


Figure 9. Forest plot of meta-analysis of correlations between working excessively and absorption.

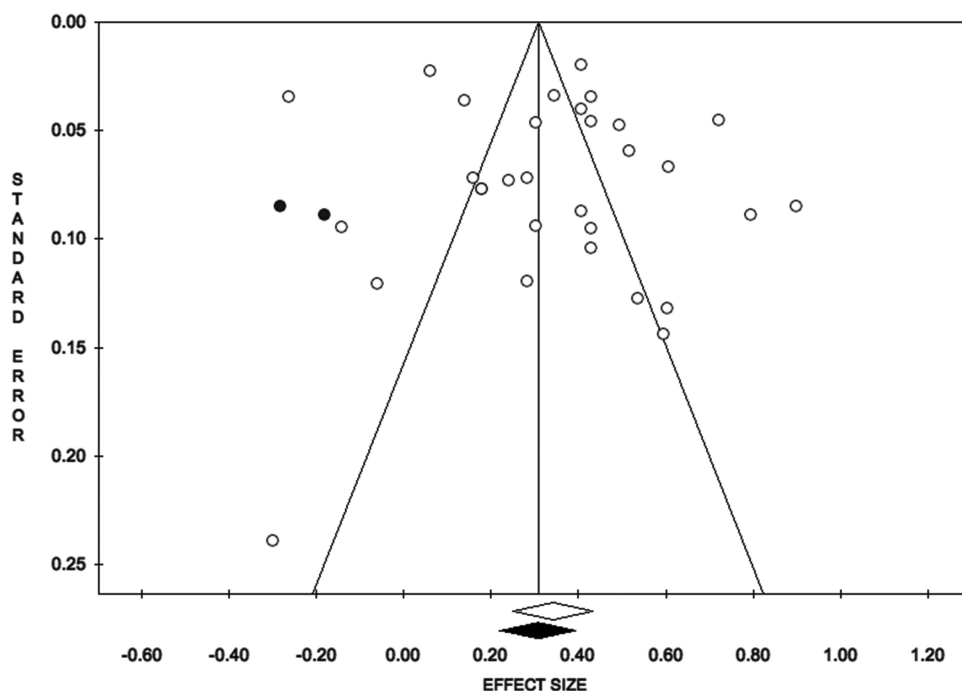


Figure 10. Funnel plot of meta-analysis of correlations between working excessively and absorption.

Table 5. Working excessively and absorption correlations in different nationality samples.

Sample	<i>k</i>	<i>N</i>	Random-effects model	Heterogeneity		Test of difference
			<i>g</i> [95% CI]	<i>Q</i>	<i>I</i> ²	<i>Q</i>
Chinese	2	3,737	.17 [.08, .26]***	1.53	34.56	38.95***
Dutch	8	22,429	.33 [.13, .52]**	267.93	97.39***	
Finnish	6	8,702	.38 [.31, .45]***	10.44	52.11 ^a	
Israeli	1	251	.60 [.34, .86]***			
Italian	3	1,076	.24 [-.12, .61]	10.55	81.05**	
Japanese	5	9,441	.19 [-.15, .54]*	261.75	98.47***	
Polish	1	967	.61 [.47, .74]***			
Spanish	3	4,528	.58 [.28, .88]***	26.22	92.37***	
Turkish	1	266	.65 [.40, .90]*			

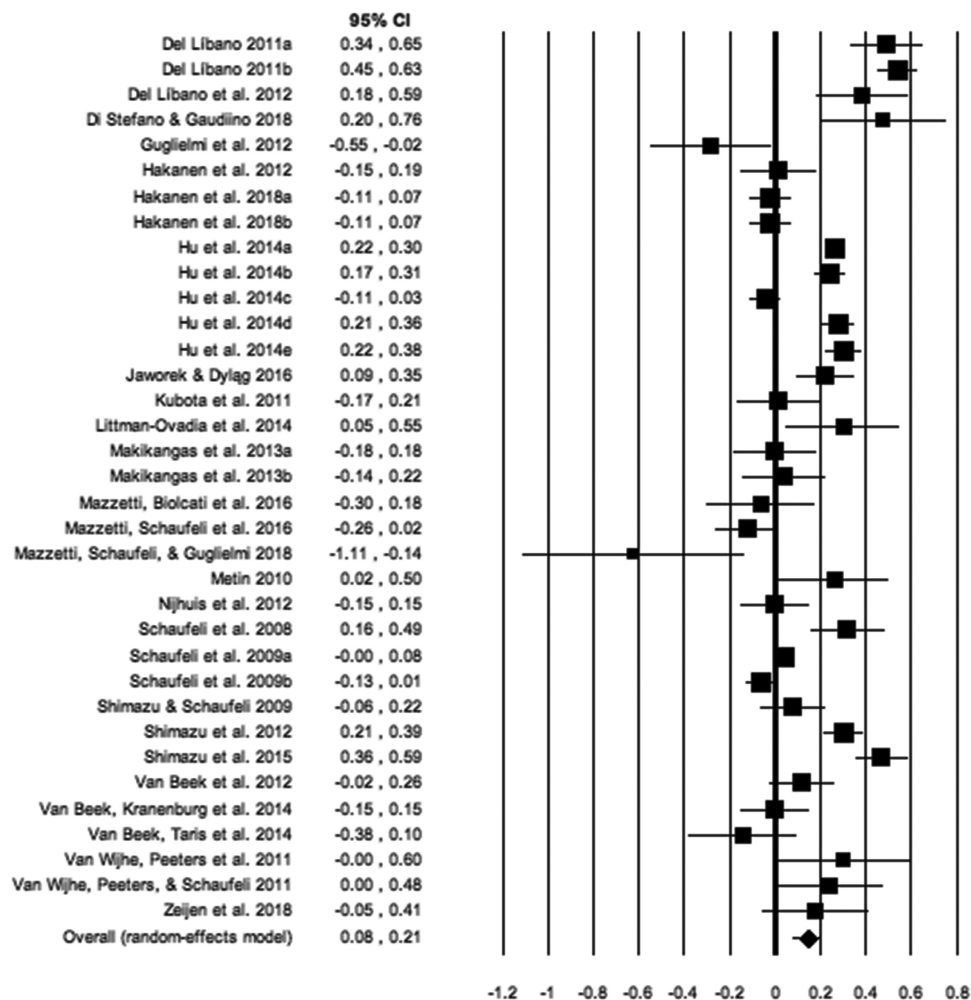
Note. *k* = number of samples; *N* = number of participants; ES = Hedges' *g* effect size; CI = confidence interval; *Q*, *I*² = heterogeneity statistics. *Q* = contrast between subgroups.

* *p* < .05; ** *p* < .01; *** *p* < .001; ^a *p* < .10.

examined, gender and tenure, did not significantly affect any relation between the components of the main constructs.

As for nationality, a significant moderating effect on correlations was found for all nine countries in our samples: China, Finland, Israel, Italy, Japan, the Netherlands, Poland, Spain, and Turkey. Every association observed was moderated by nationality; this meant that there were many differences in both the direction and magnitude of the correlations as a result of the different nationalities of the samples. Unfortunately, this made

it impossible to reach any single, coherent conclusion about the way in which nationality modifies such correlations. However, we did notice that the correlations observed in the Finnish and Italian samples differed most often from the overall correlations. There are examples from previous empirical studies of patterns of results being different between countries when workaholism and work engagement are examined together. For instance, Schaufeli, Shimazu, Hakanen, Salanova, and De Witte (2017) found that the WC dimension and work engagement were positively correlated in a Japanese sample but negatively correlated in samples from Finland and the Netherlands. In another study, Hu et al. (2014) reported differences in levels of work engagement and workaholism between samples from Western and Eastern countries. These authors considered their findings in the context of possible national differences—with reference to social, economic and cultural issues relating to a work ethic—but failed to establish a systematic, global explanation of how national culture affected their results (Hu et al., 2014; Schaufeli et al., 2017). As regards our results, for now we can only conclude that further research is needed in order to clarify the moderating role of nationality. Furthermore, these findings may also encourage the exploration of other contextual factors, such as organizational culture (Baruch, 2011; Frasnukiewicz, 2007;

**Figure 11.** Forest plot of meta-analysis of correlations between working excessively and dedication.

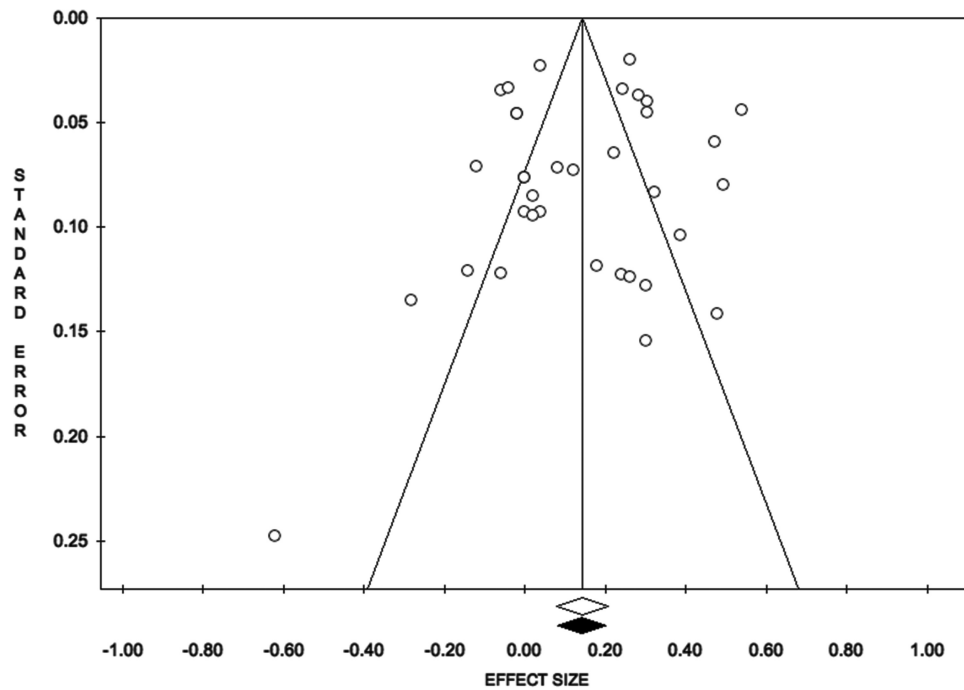


Figure 12. Funnel plot of meta-analysis of correlations between working excessively and dedication.

Table 6. Working excessively and dedication correlations in different nationality samples.

Sample	Random-effects model			Heterogeneity		Test of difference
	<i>k</i>	<i>N</i>	<i>g</i> [95% CI]	<i>Q</i>	<i>I</i> ²	<i>Q</i>
Chinese	2	3,737	.21 [.06, .37]**	3.97	74.80**	48.65***
Dutch	10	22,872	.18 [.05, .31]**	139.76	93.56***	
Finnish	6	8,702	−.02 [−.06, .02]	1.02	.00	
Israeli	1	251	.30 [.05, .55]*			
Italian	5	1,569	−.09 [−.36, .18]	22.92	82.55***	
Japanese	5	9,441	.21 [.01, .41]*	91.31	95.62***	
Polish	1	967	.22 [.09, .35]**			
Spanish	3	4,478	.36 [.19, .53]***	9.32	78.54**	
Turkish	1	266	.26 [.02, .50]*			

Note. *k* = number of samples; *N* = number of participants; ES = Hedges' *g* effect size; CI = confidence interval; *Q*, *I*² = heterogeneity statistics. *Q* = contrast between subgroups.

* *p* < .05; ** *p* < .01; *** *p* < .001.

Heslin, 2010; Inceoglu & Fleck, 2010), also using dimensional or typological models (e.g., Cameron & Quinn, 2011; Di Stefano & Scrima, 2016; Di Stefano, Scrima, & Perry, 2017; Hofstede et al., 2010; Hofstede, Neuijen, Ohayv, & Sanders, 1990; Yoo, Donthu, & Lenartowicz, 2011).

8. Limitations and directions for future research

This meta-analytical study has several limitations. First, it did not include any samples from countries outside of Europe and East Asia. As discussed previously, research from other countries is extremely limited. It would be interesting to expand the scope of this meta-analysis to cover as much of the world as possible, so that investigations on the relation between workaholism and work engagement could be supported by a larger, worldwide set of data. Accordingly, we would encourage US researchers in particular to carry out studies in this area using the scales

developed by Schaufeli and colleagues (Schaufeli et al., 2002, 2006); this would start to fill this gap in the literature and allow the study—perhaps, even simultaneously—of what goes on in samples of American employees compared with European and Asiatic samples. Such efforts may help to answer queries raised by the well-known framework established by Hofstede et al. (2010) regarding the distinctive contribution of the cultural contexts of countries.

Second, there are probably several other important moderators that we did not take into account, such as work status, organizational level, or job type, which are important correlates of dimensions of work intensity (e.g., Burke, Singh, & Fiksenbaum, 2010). Subjects' job type and job role were not examined as moderators because the necessary data are lacking; other, previous, studies have either taken a cross-occupational perspective or focused on a specific group of workers (Andreassen et al., 2011; Gorgievski et al., 2010; Kubota et al., 2010; Mäkikangas, Schaufeli, Tolvanen, & Feldt, 2013; Schaufeli et al., 2008). It is reasonable to expect that different levels of responsibility or salary, as well as other characteristics of one's job, could entail a different degree of pressure, enjoyment, or investment in people's work experience. Future research should examine these influences further. It is also worth recommending that comprehensive information on the demographic, occupational, and social characteristics of samples be recorded, because this type of information is fundamental to expanding, reinforcing or even limiting research findings (e.g., Karasek et al., 1998), as our meta-analysis demonstrates.

Third, we focused on workaholism as "the tendency to work excessively hard in a compulsive way" (Schaufeli et al., 2008, p. 204) and work engagement as "a positive, fulfilling, work-related state of mind that is characterized by vigour, DE and AB" (Schaufeli et al., 2002, p. 74). Therefore, our

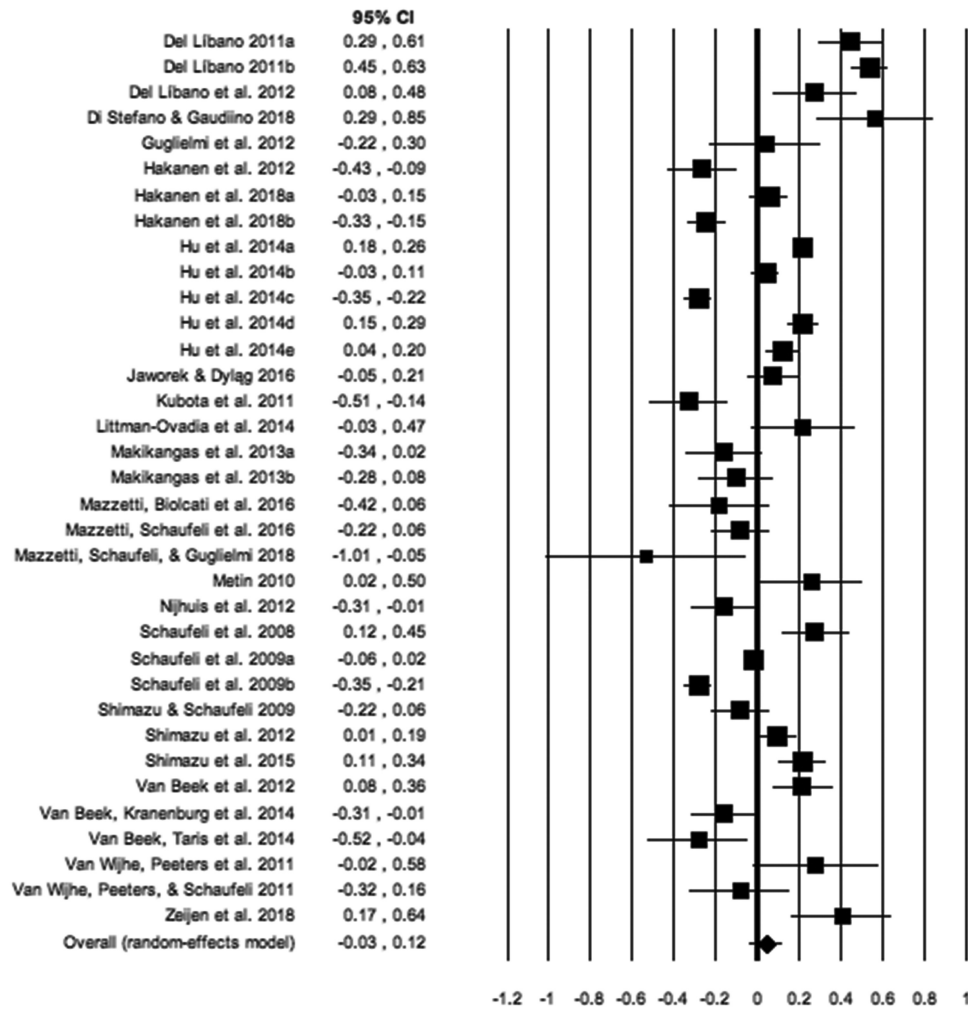


Figure 13. Forest plot of meta-analysis of correlations between working excessively and vigour.

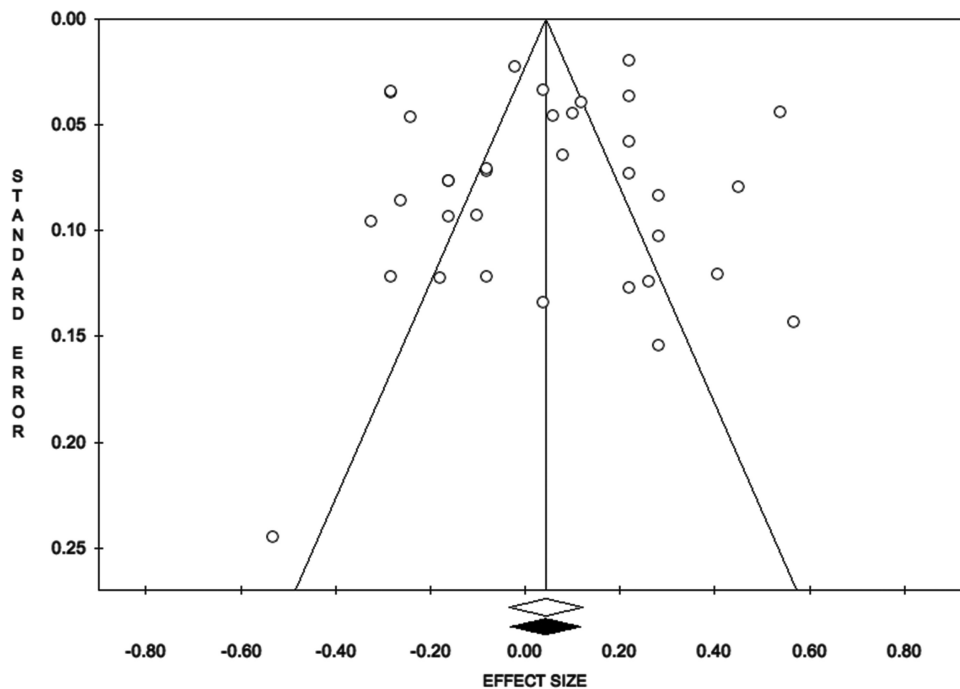


Figure 14. Funnel plot of meta-analysis of correlations between working excessively and vigour.

Table 7. Working excessively and vigour correlations in different nationality samples.

Sample	Random-effects model			Heterogeneity		Test of difference
	<i>k</i>	<i>N</i>	<i>g</i> [95% CI]	<i>Q</i>	<i>I</i> ²	<i>Q</i>
Chinese	2	3,737	.22 [.16, .29]***	.00	.00	33.63***
Dutch	10	22,872	.11 [−.04, .25]	199.39	95.49***	
Finnish	6	8,702	−.16 [−.29, −.03]**	39.40	87.31***	
Israeli	1	251	.22 [−.03, .47] ^a			
Italian	5	1,569	−.12 [−.29, .26]	23.81	83.20***	
Japanese	5	9,441	−.03 [−.24, .19]	102.21	96.09***	
Polish	1	967	.08 [−.05, .21]			
Spanish	3	4,478	.25 [−.03, .53] ^a	25.18	92.06***	
Turkish	1	266	.26 [.02, .50]*			

Note. *k* = number of studies; *N* = number of participants; ES = Hedges' *g* effect size; CI = confidence interval; *Q*, *I*² = heterogeneity statistics. *Q* = contrast between subgroups.

* *p* < .05; ** *p* < .01; *** *p* < .001 ^a *p* < .10.

findings may not be generalizable to related concepts. In other words, the point of view taken in this paper was based on a strict definition of these two types of work investment, and as such we applied a rigid exclusion criterion when deciding which studies to include in our meta-analysis. For example, we did not include studies in which workaholism was assessed by scales other than the DUWAS (Schaufeli et al., 2009), even though other researchers have investigated this construct using instruments, such as Spence and Robbins (1992) Workaholism Battery (WorkBat; e.g., Bonebright et al., 2000; Burke et al., 2009; McMillan & O'Driscoll, 2004), or the Bergen Work Addiction Scale (BWAS; e.g., Andreassen et al., 2012; Atroszko, Pallesen, Griffiths, & Andreassen, 2017).

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix A.

Studies included in the meta-analysis