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Abstract

This research sought to provide a better understanding of the psychometric multidimensionality of workers' responses to the Utrecht Work Engagement Scale (UWES; Studies 1 and 3) and the Dutch Work Addiction Scale (DUWAS; Studies 2 and 3). This research also aimed to document the relations between the components of work engagement and workaholism and workers' functioning (i.e., job satisfaction, work performance, work-family conflict, and sleeping problems). Three studies (N = 273, N = 241, N = 304) were conducted to reach these objectives. Results from these three studies indicated that a bifactor-exploratory structural equation modeling (bifactor-ESEM) representation of workaholism and work engagement ratings was superior to alternative representations. Specifically, employees' assessments of work engagement concurrently reflected a global work engagement factor which co-existed with specific vigor, dedication, and absorption components. Similarly, employees' ratings of workaholism revealed a global workaholism factor and simultaneous specific working excessively and working compulsively facets. Our findings also shed light on the criterion-related validity of these workaholism and work engagement components by documenting their differentiated associations with measures of job satisfaction, work performance, work-family conflict, and sleeping problems. Precisely, results from Studies 1 to 3 consistently showed the key role of global workaholism, global work engagement, and the specific vigor facet in predicting outcomes.

Keywords: Workaholism; work engagement; bifactor exploratory structural equation modeling; job satisfaction; work performance; work-family conflict; sleeping problems.

Workaholism and work engagement have drawn considerable attention from researchers (Di Stefano & Gaudiino, 2019). Although both constructs share similarities, as engaged and workaholic employees are both active and hard workers, these two states differ in terms of valence and quality. Indeed, work engagement is defined as "a positive, fulfilling, work-related state of mind" that is characterized by three main facets: vigor, dedication, and absorption (Schaufeli et al., 2002, p. 74). Conversely, workaholism refers to a negative experience and encompasses two distinct, yet complementary, components (Schaufeli et al., 2009b): Working compulsively, which constitutes the cognitive facet of workaholism (i.e., compulsively thinking about work and being obsessed with it), and working excessively, which represents the behavioral facet of workaholism (i.e., expending lots of resources such as time or effort at work, at the expense of other life areas). These two dimensions of workaholism and the three facets of work engagement are generally respectively assumed to yield similar effects, and yet to be relatively independent from one another (Eldor & Vigoda-Gadot, 2017; Gillet et al., 2017). However, research has shown that the two workaholism facets on the one hand, and the three work engagement dimensions on the other hand, tend to be moderately to highly inter-correlated (Hakanen & Peeters, 2015; Huyghebaert et al., 2018a), thus calling into question their relative independence. Recently, scholars have thus further explored the multidimensionality of these two constructs (e.g., Gillet et al., 2018b, 2019), and called for future research to assess the generalizability of their findings. In a context where studies on the psychometric dimensionality of work engagement and workaholism remain scant, more research is certainly needed. Therefore, in this paper, we offer to contribute to meet this need.

Indeed, recent studies have revealed that work engagement (Schaufeli et al., 2019) and workaholism (Birkeland & Buch, 2015) ratings could be disaggregated into two independent (i.e., uncorrelated) components. The first of those components reflects employees' global levels of workaholism or work engagement covering their respective dimensions. The second component reflects specific levels of absorption, dedication, and vigor, which are left unexplained by their respective first component (i.e., global levels of work engagement); or specific levels of working compulsively and excessively, which are left unaccounted for by their respective first component (i.e., global levels of workaholism). Importantly, when neglecting this global/specific nature of employees' ratings of work engagement or workaholism, one is likely to erroneously conclude that each of their respective facets plays a similar role in the prediction of criterion variables, which would in fact mainly reflect the role played by the unmodeled global components (Morin et al., 2016b, 2017). It would therefore be impossible to assess the unique effect of each facet of both constructs beyond the contribution of the global component underlying each construct (e.g., Gillet et al., 2020). However, the criterion-related validity associated with these constructs' global and specific factors is barely examined and more research is thus needed. As such, our research offers to further document the relations between the components of work engagement and workaholism and workers' functioning (i.e., job satisfaction, work performance, work-family conflict, and sleeping problems). In doing so, we pursue a critical research avenue because uncovering a construct's nomological validity allows to attribute specific meaning to latent constructs and provides essential information to practitioners (Wefald et al., 2012).

Following on from the above rationale, in the following section, we detail some psychometric considerations that are of particular importance when studying the dimensionality of work engagement and workaholism ratings. We then further examine the psychometric dimensionality of work engagement (Studies 1 and 3) and workaholism (Studies 2 and 3), and investigate how these constructs' global and specific components relate to important consequences for employees' functioning. Finally, we discuss theoretical and practical implications stemming from this research.

Psychometric Considerations

Psychometric Multidimensionality

The notion of psychometric multidimensionality is based on the observation that specific items may tap into more than their a priori corresponding construct (Morin et al., 2016a, 2016b, 2017). Specifically, two types of construct-relevant multidimensionality are inherent to multidimensional instruments like those designed to assess work engagement and workaholism. The first type of multidimensionality implies the above-mentioned evaluation of coinciding global (G-factor: Global levels of workaholism or work engagement) and specific (S-factors: Unique levels of absorption, vigor, and dedication; or working excessively and compulsively) facets of a construct. This limitation

can be overcome with bifactor models which properly disaggregate S-factors from the G-factor (Morin et al., 2016; Myers et al., 2014).

The second form of multidimensionality involves cross-loadings, depicting relations between items and more than a single specific facet of a multidimensional construct. For instance, employees' degree of vigor could affect their ratings of items originally conceived to appraise absorption or dedication. Such cross-loadings could be present because ratings are inherently imperfect, but also because vigor, dedication, and absorption are conceptually intertwined (Hakanen & Peeters, 2015; Schaufeli et al., 2006). Yet, in typical confirmatory factor analyses (CFA), these two kinds of psychometric multidimensionality are neglected because items are commonly assumed to reflect only their a priori corresponding factor (Morin et al., 2013). This limitation can be overcome through exploratory factor structural equation modeling (ESEM), which provides a way to assess cross-loadings between items and other conceptually-related constructs, while still being able to specify the factors in a confirmatory manner (Morin et al., 2020).

In sum, bifactor-ESEM combines both the bifactor approach and ESEM, and thus offers the possibility to jointly take into consideration both types of construct-relevant multidimensionality. Yet, so far, research on the workaholism and work engagement constructs has very rarely relied upon this framework (e.g., Gillet et al., 2018b; Gillet et al., 2019; Perera et al., 2018). Mainstream research on work engagement and workaholism may thus entail important theoretical and practical shortcomings, which we further delineate below and which we offer to overcome in the present research.

Psychometric Multidimensionality: Theoretical and Practical Implications

Overlooking either of the above-mentioned forms of multidimensionality may have practical consequences. First, as briefly mentioned previously, neglecting the possibility that work engagement and workaholism ratings may concurrently draw from latent constructs of two different natures (global and specific) may drive to the mistaken conclusion that vigor, dedication, and absorption, or working excessively and compulsively have comparable effects. Yet, these similar effects would mostly reflect the hidden effects of the unmodeled work engagement or workaholism global component, and eclipse the potential predictive complementarity of the meaningful specificities remaining in each of the specific facets of these constructs (i.e., work engagement or workaholism imbalance: Gillet et al., 2017, 2019). Second, evidence has shown that neglecting cross-loadings may yield to an erroneous assessment of the relations between a construct's dimensions (Asparouhov et al., 2015), but also of this construct's associations with other variables (Mai et al., 2018). Ignoring cross-loadings may also result, in bifactor models, in an inflated estimate of the G-factor (Morin et al., 2016a) -making it harder to identify work engagement or workaholism imbalance- or, in CFA, in an inflated estimate of factor correlations. However, including unneeded cross-loadings does not yield such estimation biases.

In sum, overlooking construct-related multidimensionality is likely to result in an inaccurate assessment of the psychometric properties of the measure under investigation, and of the reality underpinning the constructs assessed via this measure. This is important as it implies that work engagement's and workaholism's associations with outcome variables could be biased, which may result in biased practical recommendations. However, most studies on work engagement (e.g., Eldor & Shoshani, 2017; Hakanen et al., 2008) and workaholism (e.g., Salanova et al., 2016; Taris et al., 2005) have overlooked such construct-related multidimensionality and may thus have produced bias conclusions. Our research offers to address these limitations.

The Present Research

Exploring the Psychometric Multidimensionality of Workaholism and Work Engagement

Bifactor-ESEM offers the possibility to jointly take into consideration both of the above-mentioned types of construct-relevant multidimensionality. This framework thus appears particularly well-suited to the examination of the dimensionality of workaholism and work engagement. Bifactor-ESEM models have recently been relied upon to investigate the multidimensional structure of various employee outcomes such as psychological need states (Huyghebaert-Zouaghi et al., 2020a, 2020b) or well-being (Morin et al., 2016b, 2017), but also work engagement (Gillet et al., 2019; Perera et al., 2018) and workaholism (Gillet et al., 2018b).

More specifically, in the three studies conducted by Gillet et al. (2018b), the measurement models, for both work engagement and workaholism, were estimated using a bifactor representation, allowing them to assess workaholism's and work engagement's global levels, and to simultaneously consider subdimensions' specificity. The results supported the adequacy of the work engagement and

workaholism G-factors, which appeared to be well-defined and reliable. However, they showed that the S-factors (working excessively, working compulsively, vigor, dedication, and absorption) were much more weakly defined. Based on these findings, Gillet et al. (2018b) decided to only focus on the global components of workaholism and work engagement in their research. Gillet et al.'s (2019) results also showed the bifactor-ESEM representation of employees' responses to the UWES-17 (Schaufeli et al., 2002) to be superior. However, the variance associated with absorption ratings was left with little meaningful specificity once work engagement's global levels were accounted for, and authors suggested that "future research [was] needed to document whether this result [was] sample specific, or intimately related to the nature of absorption ratings" (Gillet et al., 2019, p. 255). However, subsequent research has not yet addressed this call.

Therefore, the first goal of the present research was to further explore the generalizability of these findings, using the UWES-9 (Schaufeli et al., 2006; Studies 1 and 3) and DUWAS (Schaufeli et al., 2009; Studies 2 and 3). The DUWAS and the UWES-9 are, seemingly, the most utilized questionnaires to measure employees' workaholism and work engagement, respectively (Clark et al., 2016; Schaufeli et al., 2019).

Global and Specific Work Engagement and Workaholism, and Employees' Functioning

Gillet et al. (2019) showed that global levels of work engagement related positively to job satisfaction and health, and negatively to turnover intentions and stress. Moreover, they demonstrated that specific levels of absorption, dedication, and vigor significantly and differentially related to the various outcomes considered. However, this research did not rely on regression analyses and did not consider the joint effects of work engagement's global and specific factors. Thus, we do not know whether the specific levels of work engagement are significantly related to criterion variables when work engagement's global levels are simultaneously taken into consideration.

Our second objective was to further explore the criterion-related validity of work engagement ratings by assessing how workers' global and specific levels of work engagement relate not only to their attitudes (i.e., job satisfaction), but also to their self-reported behaviors (i.e., work performance) and to work-life issues (i.e., work-family conflict and sleeping problems). These outcomes are of particular relevance as they were shown to associate with work engagement and workaholism ratings (Clark et al., 2016; Halbesleben, 2010). Based on prior research, we expected global levels of work engagement to be negatively related to work-family conflict (Babic et al., 2017) and impaired sleep quality (Kubota et al., 2011), and positively related to job satisfaction (Eldor & Shoshani, 2017) and work performance (Xanthopoulou et al., 2009). Indeed, engaged employees are passionate about their work but they still feel free to enjoy other activities (Bakker et al., 2011). As such, work engagement is driven by autonomous motivation (i.e., employees engage in their work out of volition and/or pleasure) and thus leads to positive outcomes (Ryan & Deci, 2017).

We also expect work engagement's specific facets to be positively related to the outcomes under study as theoretical postulates underline that vigor, dedication, and absorption are associated with optimal human functioning (Schaufeli et al., 2002). Indeed, engaged employees work hard (dedication), possess high levels of energy (vigor), and are involved and happily absorbed in their work (absorption; Schaufeli et al., 2019). Therefore, they are more likely to assess their job in a positive light (job satisfaction), to get their work done effectively (job performance) and may thus come home free of extra work and of negative emotions (work-family conflict) and less prone to altered recovery (sleeping problems). Thus, we expected that, specific levels of absorption, vigor, and dedication would also display direct associations with the outcomes, over and above work engagement's global levels (Gillet et al., 2019).

Similarly, our third objective was to examine how global and specific workaholism factors relate to the various outcomes considered. To our knowledge, no research has examined the effects of global and specific levels of workaholism on work outcomes. However, prior studies suggest that global levels of workaholism should be positively related to work-family conflict (Taris et al., 2005) and sleeping problems (Caesens et al., 2014; Salanova et al., 2016), and associated with lower levels of job satisfaction (Caesens et al., 2014) and work performance (Clark et al., 2016). Indeed, workaholism occurs to be driven by controlled motivation (i.e., employees engage in their work because of external or internal pressures), thus leading to negative outcomes (Ryan & Deci, 2017). In essence, workaholic employees invest a lot of effort, cognitive energy, and time in their work. Yet, these resources are finite (Edwards & Rothbard, 2000) and can thus no longer be devoted to employees' personal lives

(work-family conflict). Moreover, workaholics may feel restless and have difficulties to withdraw from work even at night (sleeping problems). Finally, they tend to create more work for themselves and thus have a hard time completing it (performance), and logically, they frequently experience disappointment and frustration (lower job satisfaction; van Wijhe et al., 2014). Due to the absence of studies relying on a bifactor approach to examine employees' workaholism ratings' consequences, we left as an open research question whether specific working excessively and compulsively will have significant effects on the various outcomes, once the variance explained by global workaholism is accounted for.

In sum, this research (see Figure 1) seeks to extend the knowledge associated with work engagement's (Studies 1 and 3) and workaholism's (Studies 2 and 3) multidimensionality and criterion-related validity. Specifically, in Study 1, we relied on the variable-centered bifactor-ESEM framework to refine our understanding of the multidimensionality of work engagement ratings. In addition, we explored the effects of work engagement's global and specific facets on job satisfaction. In Study 2, we also relied on the bifactor-ESEM approach to shed more light on workaholism's multidimensionality and to examine the effects of workaholism's global and specific components on a diversified set of outcomes (i.e., job satisfaction, work performance, work-family conflict, and sleeping problems). Finally, in Study 3, our aim was to replicate our results on the multidimensionality of both constructs and to examine the joint effects of work engagement and workaholism on the same outcomes as those considered in Study 2.

Study 1

The purpose of this study was twofold. First, in line with prior research (Gillet et al., 2018b, 2019), we aimed to examine whether bifactor-ESEM representation would prove to be superior to alternative solutions (i.e., CFA, ESEM, and bifactor-CFA solutions) and, if so, whether the well-defined global work engagement factor and the limited levels of specific variance associated with some facets of work engagement (after accounting for global levels of work engagement) identified in prior studies would replicate in our sample. Second, we sought to deepen Gillet et al.'s (2019) findings on the consequences associated with a bifactor representation of work engagement ratings through the UWES-17 (Schaufeli et al., 2002) not only by exploring the criterion-related validity associated with the UWES-9 (Schaufeli et al., 2006) but also by doing so while considering the joint effects of work engagement' global and specific (absorption, vigor, and dedication) factors.

Method

Participants and procedure. The third author handed out paper questionnaires to a convenience sample of 273 employees (167 women; 106 men) working in various French organizations. Along with the questionnaire, participants were given a cover letter stating the study's general purpose, as well as a consent form stressing the voluntary and anonymous nature of their participation. Approximately five minutes were needed to complete the questionnaire. Completed questionnaires were returned to the researcher. Respondents' age ranged from 18 and 65 years (M = 38.86, SD = 10.64) and they had a 11.37 years average organizational tenure (SD = 10.03). In this sample, 90.5% of the participants had a full-time job, and 90.1% had a permanent contract. Over half of the participants (51.3%) completed university, while 28.8% completed high school, 18.5% completed vocational training, and 1.5% had no diploma.

Measures. Work engagement was assessed using the UWES-9 (Schaufeli et al., 2006). Three three-item subscales measured vigor (α = .79; e.g., "At my work, I feel strong and vigorous"), dedication (α = .85; e.g., "I am proud of the work that I do"), and absorption (α = .74; e.g., "I am immersed in my work"). These items were rated on a scale ranging from 0 (*Never*) to 6 (*Always*).

Job satisfaction was measured with five items (α = .90; e.g., "So far I have gotten the important things I want in my work") from the Satisfaction with Life Scale (Diener et al., 1985), which was adapted to the work context by several authors (e.g., Gillet et al., 2018a). Responses were given on a seven-point Likert scale.

Analyses

We used the Mplus 8 (Muthén & Muthén, 2017) MLR estimator to estimate all models. CFA, bifactor-CFA, ESEM, and bifactor-ESEM representations of responses to the work engagement measure were separately estimated following Morin et al.'s (Morin et al., 2016a, 2016b, 2017) recommendations. Details on the analyses conducted can be found in the Electronic Supplementary Material.

Results

Model fit is reported in Table 1. The alternative CFA and ESEM solutions all achieved acceptable levels of model fit, yet the fit of the ESEM solutions was considerably higher. Moreover, the fit of the ESEM and bifactor-ESEM solutions was substantially higher than that of their CFA counterparts (ESEM: ΔTLI = +.002, ΔCFI = +.006; bifactor-ESEM: ΔTLI = +.001, ΔCFI = +.011). Therefore, it appeared that both solutions (i.e., the ESEM representation and the bifactor-ESEM model) could be selected to pursue our analyses. In order to further guide model selection, we thus conducted a thorough inspection of theoretical conformity and of parameter estimates, which showed the bifactor-ESEM representation to be superior (see Electronic Supplementary Material). As in the Gillet et al.'s (2019) study, this solution was therefore selected for subsequent analyses.

A predictive model including work engagement represented as a bifactor-ESEM solution and job satisfaction as a CFA solution was then tested. The job satisfaction factor was specified as regressed on work engagement's global and specific factors. This model reached an adequate level of fit to the data (see Table 1). Table S1 of the Electronic Supplementary Material displays parameter estimates (, uniquenesses, composite reliability, and factor loadings), while Table 2 reports the predictive results. Job satisfaction was significantly predicted by the work engagement G-factor ($\beta = .691$, $p < .001$) and by the vigor S-factor ($\beta = .317$, $p < .01$), but not significantly by the dedication and absorption S-factors.

Discussion

Results showed the bifactor-ESEM representation of workers' responses to the UWES-9 to be superior to alternative solutions. This representation displayed co-existing global and specific (vigor, dedication, and absorption) work engagement factors, which were all well-defined. However, once global levels of work engagement were accounted for, the vigor, absorption, and dedication factors were left with little meaningful specificity. In other words, in this study's sample, responses to the nine items designed to assess vigor, dedication, and absorption better reflected workers' global levels of work engagement than their specific vigor, dedication, and absorption. These findings thus offered preliminary replication of Gillet et al.'s (2019) results, while using a distinct measure of work engagement (UWES-9).

Results also provided support for our hypotheses built upon the existing literature (Eldor & Shoshani, 2017; Schaufeli et al., 2002) by stressing the importance of workers' global levels of work engagement in predicting job satisfaction. Precisely, higher levels of global work engagement were linked to higher levels of job satisfaction. These results thus confirm that one's general "positive, fulfilling, work-related state of mind" (Schaufeli et al., 2002, p. 74) has the power to spread out in the form of a more positive evaluation of one's work experience as a whole. Our results also showed that specific levels of vigor, relative to the other work engagement facets, explained unique variability in job satisfaction, over and above global levels of work engagement. These results not only confirm vigor to be a core dimension of work engagement (Mäkikangas et al., 2014; Shirom, 2010) but also show that this energetic component of work engagement is key in predicting workers' cognitions and affect (i.e., job satisfaction).

Study 2

This study aimed to verify whether the results found in Study 1 with regards to work engagement ratings would apply to workaholism measures, and to go beyond the sole consideration of job satisfaction in Study 1 by extending the array of consequences examined. Specifically, the first purpose of Study 2 was to explore whether, like in prior research conducted within the bifactor-ESEM framework (Gillet et al., 2018), we would reveal a superior bifactor-ESEM representation (compared to CFA, ESEM, and bifactor-CFA solutions), and if so, whether the well-defined global workaholism factor and the limited levels of specific variance associated with the specific workaholism components (after accounting for workaholism's global levels) found in prior studies would also show in our sample. Second, to the best of our knowledge, no research has yet investigated how global and specific levels of workaholism relate to key work outcome variables. In other words, to this day, no research has explored whether the specific workaholism components (i.e., working excessively and working compulsively) are significantly associated with outcomes when the global level of workaholism is simultaneously considered. We therefore aimed to offer a first examination of how a bifactor representation of workaholism relates with diverse consequences (i.e., job satisfaction, work performance, work-family conflict, and sleeping problems).

Method

Participants and procedure. A research assistant collected completed paper questionnaires from a convenience sample of 241 healthcare employees (8 men; 233 women). Respondents' age ranged from 19 to 63 years (M = 40.98, SD = 11.07) and they had a 8.95 years average organizational tenure (SD = 8.27). In addition, 86.3% of the participants were employed full-time and 77.2% had a permanent employment contract. Finally, 41.9% of respondents completed university, 27.8% completed high school, 28.6% completed vocational training, and 1.7% had no diploma.

Measures. Workaholism was assessed using the 10-item DUWAS (Schaufeli et al., 2009b). Five items assessed the working excessively dimension (α = .79; e.g., "I find myself continuing to work after my co-workers have called it quits") and five items measured the working compulsively facet (α = .79; e.g., "I feel that there is something inside me that drives me to work hard"). These items were rated on a seven-point scale ranging from 1 ("Never") to 7 ("Always").

Job satisfaction was assessed with a one-item measure (Shimazu et al., 2015; i.e., "Are you satisfied with your job?"). Responses were indicated on a scale ranging from 1 ("Dissatisfied") to 4 ("Totally satisfied").

Three items were used to assess work-family conflict (α = .86; e.g., "My work schedule makes it difficult for me to fulfill my domestic obligations"; Huyghebaert et al., 2018a). Responses were indicated on a scale ranging from 1 ("totally disagree") to 7 ("totally agree").

One item ("During the past month, how would you rate your sleep quality overall?") was used to assess impaired sleep quality (Buysse et al., 1989). It was rated on a four-point scale ranging from very good (1) to very poor (4).

Performance was measured with one item. Precisely, employees were asked to appraise their job performance during the four weeks prior to their completion of the questionnaire (Kessler et al., 2003). They indicated their responses on a scale from 0 (worst work performance) to 10 (best work performance).

Analyses and Results

We conducted the same analyses as those conducted in Study 1. More details on these analyses can be found in the Electronic Supplementary Material. Results from these analyses indicated that the CFA and ESEM models were not able to achieve acceptable levels of fit to the data. Fit indices are detailed in Table 1. In contrast, across all indicators, the bifactor-CFA and bifactor-ESEM models reached excellent levels of fit. As in Study 1, a thorough inspection of theoretical conformity and of parameter estimates further guided model selection and showed the bifactor-ESEM solution to be superior (see Electronic Supplementary Material), which was thus retained for further analyses.

A predictive model including workaholism represented as a bifactor-ESEM solution, work-family conflict as a CFA solution, and job satisfaction, work performance, and sleeping problems respectively as single items was then tested. Job satisfaction, work performance, work-family conflict, and sleeping problems were specified as regressed on the global and specific workaholism components. This model reached an adequate level of fit to the data (see Table 1). Table S2 of the Electronic Supplementary Material displays parameter estimates (composite reliability, uniquenesses, and factor loadings), and Table 2 reports the predictive results. Job satisfaction (β = -.393, p < .001), work performance (β = -.194, p < .01), work-family conflict (β = .551, p < .001), and sleeping problems (β = .418, p < .001) were significantly predicted by the workaholism G-factor. In addition, work-family conflict (β = .336, p < .01) and sleeping problems (β = .266, p < .01) were significantly predicted by the working compulsively S-factor.

Discussion

Results supported the superiority of a bifactor-ESEM representation of employees' ratings of workaholism, when compared to alternative solutions. This representation displayed co-existing global and specific (working excessively and compulsively) workaholism factors, which were all well-defined. These results thus overcome the limitations of Gillet et al.'s study (2018b) where the specific factors (working excessively and compulsively) were so weakly defined that researchers decided to only focus on the global component of workaholism in their research. It should still be noted that in our study, the working excessively and compulsively factors were left with little meaningful specificity after accounting for global levels of workaholism. This means that, in this sample, employees' responses to the ten items designed to measure working excessively and compulsively better reflected workers' global levels of workaholism than specific levels of working excessively and

working compulsively.

Our results also provided support for our hypotheses built upon prior research (Clark et al., 2016; Schaufeli et al., 2009b) by showing the importance of workers' global levels of workaholism in predicting job satisfaction, work performance, work-family conflict, and sleeping problems. More precisely, levels of global workaholism were negatively associated with job satisfaction and work performance, and positively related to work-family conflict and sleeping problems. These results thus confirm that it is what is shared by both dimensions of workaholism that matters in producing unfavorable outcomes (Schaufeli et al., 2009c). Our results show that this general dysfunctional pattern of heavy work investment is not only detrimental for individuals work-related well-being (i.e., lower job satisfaction) but also has the power to spillover to their personal life (i.e., work-family conflict and sleeping problems), and to result in lower job performance. This result is of importance as workaholism may be a valued addiction in some organizations, based on the very idea that it yields higher job performance (e.g., Baruch, 2011). Our results contradict this assumption. Moreover, this study's findings also indicated that specific levels of working compulsively, unlike specific levels of working excessively, explained unique variability in work-family conflict and sleeping problems over and above global levels of workaholism. This result, by contradicting prior research that did not rely on the B-ESEM framework (Huyghebaert et al., 2018a), shows the importance of properly disentangling the different components of workaholism in order to precisely assess the unique effect of each facet –beyond the contribution of the global component– on related variables (Mai et al., 2018).

Study 3

The aim of Study 3 was to replicate the results on the multidimensionality of work engagement (Study 1) and workaholism (Study 2), and to explore how the set of outcomes considered in Study 2 would be predicted by these bifactor representations of work engagement and workaholism taken together. Indeed, although workaholism and work engagement both imply high levels of activation, workaholism and work engagement differ in nature and are thus expected to relate differently to outcomes. More specifically, engaged and workaholic workers work hard for different reasons: For engaged workers, it is because they draw pleasure and interest from their job, while for workaholics, it is caused by self-imposed pressure, guilt, and ego-involvement (Schaufeli, 2016). Therefore, in the case of work engagement activation is underpinned by pleasure, while in the case of workaholism activation is underlain by displeasure (Schaufeli et al., 2019). Prior research has proven these two constructs to be distinct from each other by demonstrating their well-differentiated relations with various consequences (e.g., Caesens et al., 2014; Schaufeli et al., 2008).

As previously argued, we thus hypothesized that, contrary to workaholism's global levels, work engagement's global levels would positively relate to job satisfaction and work performance, and negatively to work-family conflict and sleeping problems. Additionally, based on Study 1 and on prior research (Gillet et al., 2019), we expected that some facets of work engagement would display direct associations with the criterion variables, over and above global levels of work engagement. Regarding workaholism, because of the absence of studies exploring the consequences associated with a bifactor representation of workaholism, and based on the limited specificity associated with the specific facets of workaholism once the variance explained by global workaholism was taken into account in Study 2, we left as an open question whether specific working excessively and compulsively would have significant effects on the various outcomes considered in this sample.

Method

Participants and procedure. Two research assistants collected completed paper questionnaires from a convenience sample of 304 employees (97 men; 207 women) working in the retailing and banking industries. Participants' age ranged from 18 to 68 years (M = 37.68, SD = 12.06) and their average organizational tenure was of 11.84 years on average (SD = 10.81). Moreover, 78.9% of respondents were full-time workers and 95.7% had a permanent contract. Finally, 65.5% of participants completed university, 20.7% completed high school, 13.2% completed vocational training, and 0.7% had no diploma.

Measures. As in Study 1, work engagement was assessed using UWES-9 (Schaufeli et al., 2006). Three items assessed vigor (α = .82), three items measured dedication (α = .92), and three items assessed absorption (α = .83). As in Study 2, workaholism was assessed using the 10-item DUWAS (Schaufeli et al., 2009b). Five items measured the working excessively dimension (α = .76) and five items assessed the working compulsively facet (α = .80). Work-family conflict (α = .88), job

satisfaction, and work performance were assessed with the same single item measures as in Study 2. Finally, sleeping problems were measured through four items (α = .88; Jenkins et al., 1988) introduced by the stem sentence "How often in the past month did you…" (e.g., "…have trouble staying asleep (including waking up far too early)"). Responses were indicated on a scale ranging from "not at all" (1) to "22 to 31 days" (6).

Analyses and Results

Analyses were conducted using the same procedure as in Studies 1 and 2. The CFA model was not able to achieve an acceptable level of fit to the data. In contrast, across all indicators, the ESEM, bifactor-CFA, and bifactor-ESEM solutions reached acceptable levels of fit (see Table 1). Like in Studies 1 and 2, a thorough inspection of theoretical conformity and of parameter estimates further guided model selection and demonstrated the bifactor-ESEM representations to be superior for both work engagement (as in Study 1) and workaholism (as in Study 2) (see Electronic Supplementary Material). These solutions were thus retained for further analyses.

A predictive model was then tested, including work engagement and workaholism represented as bifactor-ESEM solutions, work-family conflict and sleeping problems as CFA solutions, and job satisfaction and work performance as single items, respectively. Job satisfaction, work performance, work-family conflict, and sleeping problems were specified as regressed on work engagement's and workaholism's respective global and specific components. This model reached an adequate level of fit to the data (see Table 1). Table S3 of the Electronic Supplementary Material displays parameter estimates (uniquenesses, composite reliability, and factor loadings), and Table 2 reports the predictive results. Job satisfaction was significantly predicted by the work engagement G-factor (β = .607, p < .001) and was marginally predicted by the workaholism G-factor (β = -.234, p = .059). Work performance was predicted by the work engagement G-factor (β = .299, p < .05) and by the vigor S-factor (β = .212, p < .01). Work-family conflict was predicted by the workaholism G-factor (β = .631, p < .001). Finally, sleeping problems were predicted by the work engagement G-factor (β = -.273, p < .05) and by the workaholism G-factor (β = .418, p < .001).

Discussion

As in Studies 1 and 2, results indicated that employees' ratings of work engagement and workaholism were best represented as a bifactor-ESEM representation than as alternative solutions. This representation displayed well-defined and co-existing global and specific (vigor, absorption, and dedication) work engagement factors. This result thus confirmed our replication of Gillet et al.'s (2019) results, while using a distinct and shorter measure of work engagement (UWES-9). Similarly, this solution showed well-defined and co-existing global and specific (working excessively and compulsively) workaholism factors, thus going beyond prior work on the multidimensionality of workaholism ratings (Gillet et al., 2018b). Still, the working excessively and compulsively specific factors were left with little meaningful specificity once the global workaholism factor was accounted for. In other words, in this sample, as in Study 2, responses to the ten items designed to assess working excessively and compulsively better reflected workers' global levels of workaholism than their specific working excessively and working compulsively facets.

Results also provided support for our hypotheses based on prior research (Clark et al., 2016; Eldor & Shoshani, 2017; Schaufeli et al., 2002, 2009b), by showing the importance of workers' global levels of workaholism and work engagement in predicting job satisfaction, work performance, work-family conflict, and sleeping problems. Precisely, global work engagement was positively associated with job satisfaction and work performance, and negatively related to sleeping problems. In line with Study 2's results, these results confirm that one's general positive work-related state of mind not only has the power to spread out in the form of more positive cognitions and affect (i.e., higher job satisfaction) but may also be beneficial for one's behaviors (i.e., higher work performance) and recovery from work-related efforts (i.e., less sleeping problems). This general fulfilling work-related state of mind may thus fuel a beneficial cycle of complete adaptive functioning. Study 3's findings also indicated that specific levels of vigor, unlike specific absorption and dedication, explained unique variability in work performance, over and above the variance explained by global work engagement, and thus confirm the importance of this core energetic component of work engagement (Mäkikangas et al., 2014; Shirom, 2010) in predicting behavioral consequences in employees. Finally, as in Study 2, global workaholism was positively associated with work-family conflict and sleeping problems, thus providing support for Schaufeli and colleagues' (2009c) assertion that it is the combination of working excessively and

working compulsively that counts.

General Discussion

This research aimed to extend upon prior studies exploring bifactor representations of work engagement (Gillet et al., 2019) and workaholism (Gillet et al., 2018b) by gaining a better understanding of these constructs' multidimensionality. In other words, we examined whether bifactor-ESEM representations of these constructs would prove to be superior to alternative solutions (CFA, ESEM, and bifactor-CFA) and, if so, whether analyses would reveal well-defined global and specific facets of work engagement and of workaholism, and whether the specific facets (i.e., vigor, dedication, absorption, and working excessively, working compulsively) would retain some meaningful specificity when simultaneously considered with their respective global work engagement and workaholism constructs. Based on these bifactor representations, this research also sought to address a gap in the existing literature on the criterion-related validity of the global and specific work engagement and workaholism components, which remains insufficiently explored. As such, this research offered to examine how work engagement's and workaholism's global and specific components would relate to a different set of outcomes (i.e., job satisfaction, work-performance, work-family conflict, and sleeping problems).

Theoretical Implications

First, regarding the representation of work engagement and workaholism ratings, our findings offered a replication of prior research (Gillet et al., 2018b, 2019) as bifactor-ESEM representations of these ratings proved to be superior to alternative solutions in all three studies. These results imply that work engagement and workaholism ratings are respectively underpinned by a global encompassing construct (Clark et al., 2016; Schaufeli et al., 2019) which co-exists with specific dimensions reflecting what is unique to workers' levels of absorption, dedication, vigor, working excessively, and working compulsively, and remains unaccounted for by their respective global constructs. This fine-grained representation of work engagement and workaholism ratings' multidimensionality indicates that considering the possibility that these constructs could be best represented through a bifactor-ESEM framework could be an important step at the onset of research on these constructs (Gillet et al., 2019).

More specifically, with regards to work engagement ratings, results from Studies 1 and 3 are, to the best of our knowledge, the first to demonstrate that, once global levels of work engagement are accounted for, all specific factors (vigor, dedication, and absorption) retained at least some specificity over and above that of the global factor. Indeed, prior research did show the work engagement G-factor to be well-defined and reliable, but found much more weakly defined S-factors (vigor, dedication, and absorption), which led researchers to only focus on the global construct of work engagement in their research (Gillet et al., 2018b). Similarly, Gillet et al. (2019) observed that the absorption factor retained a limited level of specific variance after accounting for global levels of work engagement. This contribution of our research also holds for workaholism ratings as results from Studies 2 and 3 are the first to demonstrate that specific workaholism facets (working excessively and working compulsively) retain at least some specificity even when the global level of workaholism is simultaneously considered. In prior research (Gillet et al., 2018b) scholars were not able to find enough specificity associated with the workaholism S-factors once the well-defined and reliable workaholism G-factor was considered, which led them to only focus on the global construct of workaholism in their research.

In our research, although enough specificity remained associated with the specific factors to consider them in further analyses, it should be noted that, in all three studies, these specific factors (vigor, dedication, absorption, working excessively, working compulsively) were still left with limited specificity once the variance explained by their respective work engagement and workaholism global factors was taken into account. These results therefore emphasize that ratings on the nine items used to assess work engagement's facets (vigor, dedication, and absorption) through the UWES-9 (Schaufeli et al., 2006) and the 10 items used to measure workaholism's dimensions (working excessively and working compulsively) through the DUWAS (Schaufeli et al., 2009b) better reflect workers' global levels of work engagement and workaholism than their specific dimensions.

Second, our research is the first to offer an investigation of the criterion-related validity associated with these bifactor representations of work engagement and workaholism ratings. In Study 1, results showed that job satisfaction was significantly predicted by global work engagement, and by the

specific vigor facet over and above the global work engagement factor. These results not only confirm the importance of studying work engagement as a global factor but they also provide support for prior research proposing vigor to be a central component of work engagement (Mäkikangas et al., 2014; Shirom, 2010). Similarly, Study 2 emphasized the importance of the global factor of workaholism in predicting decreased job satisfaction and work performance, and increased work-family conflict and sleeping problems. However, it should be noted that Study 2 also showed that work-family conflict and sleeping problems were significantly predicted by the specific working compulsively facet over and above the global workaholism factor. These results emphasize the importance of this cognitive dimension of workaholism when it comes to understand the apparition of adverse consequences at the work-home interface (i.e., work-family conflict and sleeping problems) and more generally provide support for prior studies encouraging to examine how each of these dimensions of workaholism relates to other constructs (Huyghebaert et al., 2018a; Schaufeli et al., 2009a).

We also offered the first examination of the criterion-related validity associated with bifactor representations of work engagement and workaholism ratings by jointly considering these closely related, yet distinct, constructs (Schaufeli et al., 2019). It should first be noted that, in Study 3, once global workaholism and work engagement components were accounted for, their specific facets (working excessively, working compulsively, vigor, dedication, and absorption) did not significantly explain any unique variability in the considered outcomes, with the exception of the relation between vigor and work performance. Indeed, the specific vigor facet predicted work performance over and above the global work engagement factor, which is in line with results from Study 1 emphasizing vigor to be an essential component of work engagement (Mäkikangas et al., 2014; Shirom, 2010). More generally, results from Study 3 confirmed work engagement and workaholism to have clearly contrasted relations with outcomes. The consequences reflecting optimal functioning (i.e., job satisfaction and work performance) were significantly predicted by global work engagement only (and, for work performance, by specific vigor as well), thus confirming work engagement to be a pleasurable and satisfying state of arousal yielding beneficial outcomes (Schaufeli, 2016). Conversely, workaholism did not significantly predict job performance, confirming this dysfunctional pattern of overachievement to have no relation to actual achievement (i.e., performance), and only marginally negatively related to job satisfaction. Although they did not significantly relate to pleasurable adaptive consequences, global levels of workaholism did predict unpleasurable states of arousal (i.e., work-family conflict and sleeping problems). Precisely, work-family conflict was solely predicted by global levels of workaholism, and sleeping problems were also predicted by global levels of workaholism, and to a lesser extent by global work engagement. In other words, the indicators of suboptimal functioning in Study 3 were mainly predicted by global levels of workaholism, thus confirming workaholism to involve arousal and displeasure (Schaufeli et al., 2019).

In sum, results from Study 3 provide support, within the bifactor ESEM framework, for prior research showing work engagement to be a healthy form of heavy work investment leading to positive outcomes and workaholism to be the dark side of heavy work investment leading to negative outcomes (Schaufeli & Salanova, 2014).

Limitations and Research Perspectives

Even though it offers a joint consideration of bifactor representations of employees' work engagement and workaholism ratings and their relations to outcomes, this research is not without limitations. First, the self-report measures we used could have been tinted by self-report biases and by social desirability. Relying on other-rated (e.g., supervisor, spouse) assessments of work engagement and workaholism could be an avenue for future research to overcome this limitation. Second, research could extend the generalizability of the bifactor representations of work engagement and workaholism, and of their associations with outcomes, in different cultures and countries. Indeed, we relied on three samples of highly educated French workers, thus questioning whether our findings could be replicated in different socio-economic, linguistic, or cultural samples. Moreover, we were not able to collect race, ethnicity, and socioeconomic status of the samples. Some caution is thus warranted when interpreting our results, until more evidence of invariance across distinct racial, ethnic, and socioeconomic groups can be provided. Third, future research would benefit from longitudinal designs allowing for a more precise investigation of the temporal effects of work engagement and workaholism components. Indeed, in this research we used the terms "consequences" to refer to variables that have been conceptualized as such in the literature, but it should be noted that these variables, over time, could be

outcomes and antecedents, respectively, of workaholism and work engagement. Fourth, in this research we focused on the dark side of employees' off-job experiences (i.e., work-family conflict and sleeping problems) and on the bright side of their work experiences (i.e., job performance and work performance). In order to provide a more complete and balanced understanding of the consequences associated with the components of work engagement and workaholism, future research could, for instance, simultaneously explore how these components relate to positive off-job experiences such as work-home facilitation or psychological detachment from work (e.g., Sonnentag et al., 2008) and to adverse work experiences such as exhaustion or counterproductive work behaviors (e.g., Balducci et al., 2012). Finally, in this research, we solely considered outcomes of bifactor representations of work engagement and workaholism. Yet, it would be interesting to explore individual (e.g., performance-based self-esteem, self-regulation; Bakker & Oerlemans, 2019; van Wijhe et al., 2014) and organizational (e.g., support, psychosocial safety climate; Caesens et al., 2014; Huyghebaert, Gillet et al., 2018) antecedents of workaholism's and work engagement's global and specific facets. For instance, in line with the *Job Demands-Resources* model, future studies could examine how job demands and resources relate to the components of work engagement and workaholism (e.g., Hakanen et al., 2008). Research could jointly investigate the mediating role of psychological mechanisms (e.g., psychological needs; Huyghebaert-Zouaghi, et al. 2020) in the relation between such antecedents and bifactor representations of work engagement and workaholism (e.g., Garn et al., 2019).

Practical Implications

This research emphasizes some practical implications for both researchers and practitioners. By demonstrating that bifactor ESEM representations of work engagement and workaholism are superior to alternative solutions, our results first suggest that it is fundamental to consider the possibility that the items used to assess work engagement (UWES-9) and workaholism (DUWAS-10) may tap into both a global component (global work engagement and workaholism factors) and into specific facets (specific vigor, absorption, dedication, working excessively, and working compulsively factors). Indeed, failing to take into consideration the multidimensionality underlying ratings of work engagement and workaholism may erroneously lead researchers to observe comparable effects of these constructs' specific facets on related outcomes (Morin et al., 2016a). Yet, such similar effects would merely express the hidden effect of the unmodeled global construct and conceal the possible complementary effects of work engagement or workaholism imbalance (i.e., the meaningful specificities remaining in each of the specific facets of these constructs). Second, our results showing the superiority of bifactor ESEM representations of work engagement and workaholism should raise awareness in researchers on the risk of ignoring cross-loadings (i.e., relations between items and more than a single specific facet of a multidimensional construct). For instance, employees' levels of working compulsively could affect their ratings of items originally conceived to appraise their tendency to work excessively. Indeed, not considering such cross-loadings may result in overrating the importance of work engagement's and workaholism's respective global factors (Asparouhov et al., 2015). In sum, not considering the multidimensionality underlying workaholism and work engagement ratings may lead to an inaccurate understanding of the studied reality and to erroneous recommendations for practice.

Our results also have implications for organizations. Indeed, modern society, organizations and individuals tend to value heavy work investment altogether (Schaufeli et al., 2009b). Yet, our results emphasize the importance of being more selective and solely encouraging healthy forms of heavy work investment (i.e., work engagement) to enhance employees' job satisfaction and performance. Creating the conditions for employee work engagement may include providing workers with job resources such as participative management, social support, and feedback (Shimazu & Schaufeli, 2009). Our results, by showing vigor to be a key component in the prediction of employees' adaptive functioning, also point to the necessity to create the conditions to particularly reinforce this energetic component of work engagement (see Shirom, 2010). Our research also emphasizes the importance of preventing unhealthy forms of heavy work investment and point to workaholism reduction as a key aspect to prevent negative manifestations at the work-home interface (i.e., work-family conflict and sleeping problems). Workaholism prevention could be encouraged at the organizational level (e.g., stating clear segmentation norms and encouraging balanced and healthier lifestyles; Burke, 2001; Kreiner et al., 2006), but also at the individual level (e.g., seeking counseling to develop new habits and replace one's old malfunctioning behaviors; Van Gordon et al., 2017).

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Table 1

Goodness-of-Fit Statistics and Information Criteria for the Measurement Models

Model	χ^2	df	CFI	TLI	RMSEA	RMSEA 90% CI
Study 1						
Work Engagement						
CFA	54.577*	24	.962	.943	.068	[.044; .092]
Bifactor-CFA	30.755*	18	.984	.968	.051	[.016; .081]
ESEM	19.880	12	.990	.970	.049	[.000; .086]
Bifactor-ESEM	10.076	6	.995	.969	.050	[.000; .102]
Predictive model	133.059*	52	.950	.912	.076	[.060; .092]
Study 2						
Workaholism						
CFA	87.544*	34	.921	.895	.081	[.060; .102]
Bifactor-CFA	40.931*	25	.976	.958	.051	[.019; .079]
ESEM	71.955*	26	.932	.882	.086	[.062; .110]
Bifactor-ESEM	30.649*	18	.981	.953	.054	[.016; .086]
Predictive model	126.652*	72	.951	.918	.056	[.040; .072]
Study 3						
Work Engagement and Workaholism						
CFA	494.333*	142	.872	.846	.090	[.082; .099]
Bifactor-CFA	262.090*	121	.949	.928	.062	[.052; .072]
ESEM	318.140*	122	.929	.900	.073	[.063; .083]
Bifactor-ESEM	229.961*	102	.954	.922	.064	[.053; .075]
Predictive model	547.486*	268	.937	.911	.059	[.052; .066]

Note. * $p < .05$; df: Degrees of freedom; CFI: Comparative fit index; TLI: Tucker-Lewis index; RMSEA: Root mean square error of approximation; CI = Confidence interval.

Table 2

Associations between Work Engagement and Workaholism Components and the Outcomes

Predictors	Job satisfaction β	Work performance β	Work-family conflict β	Sleeping problems β
Study 1				
Work engagement G-Factor	.691***			
Vigor S-Factor	.317**			
Dedication S-Factor	.173			
Absorption S-Factor	-.106			
Study 2				
Workaholism G-Factor	-.393***	-.194**	.551***	.418***
Working Excessively S-Factor	-.030	.064	.051	-.064
Working Compulsively S-Factor	-.024	-.018	.336**	.266**
Study 3				
Work engagement G-Factor	.607***	.299*	-.148	-.273*
Vigor S-Factor	-.070	.212**	.007	-.129
Dedication S-Factor	.345	.073	-.023	-.122
Absorption S-Factor	.021	.056	-.140	-.037
Workaholism G-Factor	-.234	-.059	.631***	.418***
Working Excessively S-Factor	-.142	-.033	.338	-.007
Working Compulsively S-Factor	.236	.149	-.367	-.149

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

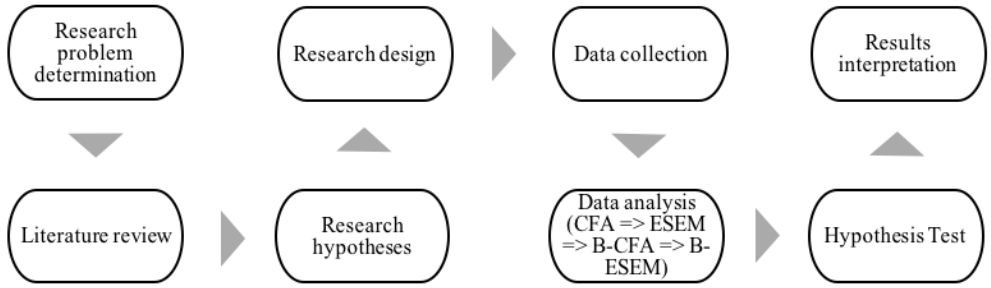

Figure 1

Research Methodology Flowchart