







How work engagement relates to performance and absenteeism: a meta-analysis

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ABSTRACT

Both researchers and practitioners agree that having highly engaged employees results in individuals and organizations reaping various positive consequences related to performance and absenteeism. However, available research syntheses date from the early years of this line of research, thus cover only a small fraction (under 10%) of the available studies. The present meta-analysis updates the results of work engagement and its three facets (vigour, dedication, and absorption) on task performance and includes a substantial number of studies on absenteeism with separate analyses of longitudinal studies. A total of 179 unique correlations representing an overall sample size of $N = 139,182$ was examined, confirming and enhancing a positive association between work engagement and task performance ($\rho = .483$) and a negative association between work engagement and absenteeism ($\rho = -.171$). The three facets of engagement had similar effects on performance, but only vigour and dedication correlated significantly negatively with absenteeism. Work engagement is linked positively to future task performance and negatively to future absenteeism. The influence of several methodical moderators is examined. Finally, we discuss how these findings can inform research and practice in order to contribute to a more effective and healthy work environment for employees.

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Introduction

Practitioners and researchers are convinced that work engagement is the key to high performance (Bakker & Demerouti, 2017). Although these links are showcased in almost every article on engagement, we know that this is not true in all cases. In fact, results across studies are rather inconsistent, as different studies have obtained strong (e.g., Buil et al., 2019) to weak relationships (including null findings; e.g., Caesens & Stinglhamber, 2014). Hence, when considering all published studies, the question emerges of whether employees' engagement is truly linked to task performance, and, if so, to what extent.

Aside from task performance, another important employee-related determinant of a company's success is the absenteeism rate (Kocakulah et al., 2016). Similar to performance, absenteeism has also been closely linked to work engagement, in that they are both related to employees' motivation, well-being, and health (Maricuțoiu et al., 2017). Indeed, work engagement was shown to serve as a predictor for the absenteeism rate (Schaufeli et al., 2009), indicating that the higher an employee's engagement, the higher their attendance at work. However, findings from different studies show varying relationships between engagement and absenteeism, from positive (Rongen et al., 2014) to negative (Schaufeli et al., 2009), making it difficult to generalize the true impact of engagement. From a theoretical perspective, both positive and negative associations are possible, as engaged employees may be highly motivated to be present at the workplace (Bakker, 2011) but might also be at risk for stress-related diseases (Maricuțoiu et al., 2017).

Previous meta-analyses confirmed the positive effect that work engagement has on task performance in general (Christian et al., 2011) and other-rated task performance (Mackay et al., 2017). However, these analyses were based on 16 effect sizes each. Given that a great extent of relevant research has been published in recent years, many of the currently available studies are not covered. Importantly, while Mackay et al. (2017) found a negative correlation between engagement and absenteeism, their analysis was based on only three studies; this further emphasizes the need for an update that includes all available empirical evidence. In general, updating the existing meta-analyses based on all newly available cumulative evidence is an integral part of psychological science.

This paper contributes to the existing research on the relationship between work engagement and task performance in four different aspects. The first is providing a comprehensive and up-to-date overview of the relationship of work engagement with task performance as well as with absenteeism and to identify the methodological variables that moderate these relationships. Secondly, it allows to examine how the three facets of engagement separately affect task performance and absenteeism. Thirdly, by building on 179 effect sizes from five different continents, it allows for an estimation of the generalizability across different geographic contexts. Finally, as another specific contribution of this work, we examined the relationship between work engagement and future performance and future absenteeism by analysing longitudinal studies. Therefore, this paper will be of interest to practitioners, as it clarifies whether companies should

encourage employees' engagement in order to strengthen work performance and attendance. Through meta-analytical procedures, the relationships between engagement and both performance and absenteeism will be integrated, allowing us to formulate a generic proposition.

Work engagement

The concept of work engagement was first addressed by Kahn (1990), who described engaged employees as being completely connected to their respective work roles on a physical, cognitive and emotional level. In a systematic review, Simpson (2009) described four approaches to engagement at work, starting with the concept of personal engagement, which is based on Kahn's (1990) definition. The second concept refers to a construct characterized by energy, contribution and effectiveness, representing the exact opposite of burnout (Maslach & Leiter, 1997). Another approach to engagement at work refers to the concept of employee engagement (Harter et al., 2002), which is based on an employee's involvement in, satisfaction with and enthusiasm for their work. In the fourth contribution on the topic, Schaufeli et al. (2002) specified work engagement as "a positive, fulfilling, work-related state of mind characterized by vigor, dedication and absorption" (p. 74). *Vigour* is expressed through high levels of energy and mental resilience at work, as well as the will to put extra effort into one's work and to persist in the face of obstacles (Bakker, Schaufeli et al., 2008). *Dedication* refers to a strong commitment to one's own work and infusing it with importance, enthusiasm, inspiration, pride and challenge (Bakker, Schaufeli et al., 2008). The third facet, *absorption*, is defined as being fully concentrated on and happily immersed in one's work, whereby time passes quickly and it is difficult to detach from the work (Bakker, Schaufeli et al., 2008). These three facets are reflected in the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003).

Although the various definitions of engagement in the workplace differ in several respects, a high correlation ($r = .70$) exists between Kahn's description of personal engagement and Schaufeli and colleagues' description of work engagement (Rich et al., 2006). One reason may be that the concept of absorption as described by Schaufeli and colleagues is reflected in Kahn's definition. Furthermore, vigour is highly negatively correlated with exhaustion during burnout, and, even though vigour and exhaustion have not been found to be on opposite ends of a continuum (Demerouti et al., 2010), the different concepts can be assumed to be closely connected. To take into account the varying conceptualizations of work engagement in this work, we consider test conceptions based on one of these different theoretical models as a moderator (see below).

Task performance

Task performance includes all contractually obligated activities that employees are expected to perform (Borman & Motowidlo, 1997); it can also be understood as how employees' individual performances are instrumentalized to benefit the company's objectives (Demerouti & Cropanzano, 2010).

Borman and Motowidlo (1997) suggest that task performance can be described in two ways: One refers to activities that directly transform raw materials into goods or services that the company distributes; these include selling products, teaching in a school or operating in a hospital (Motowidlo & Kell, 2012). They are referred to as the technical core activities of the organization or the company. The second type of task performance includes all activities that serve to maintain, foster, and promote the company's core activities; these include activities such as planning, coordination, supervision, or provision of materials (Motowidlo & Kell, 2012).

Beyond task performance, contextual performance is a relevant and important variable for companies to map their overall success (Borman & Motowidlo, 1997). However, contextual performance is rather broadly defined (Borman & Motowidlo, 1993; Motowidlo & Kell, 2012). For example, the distinction between contextual performance and the areas of adaptive (i.e., the ability to adapt to new and varied work situations; Pulakos et al., 2000), innovative and creative performance as well as voice behaviour is floating (Johnson, 2001; LePine & Van Dyne, 2001; Macey & Schneider, 2008). Hence, we decided to focus more narrowly on task performance in the current work.

Work engagement and task performance

Previous research suggests that the more employees are engaged in their work, the higher their level of job performance (e.g., Rich et al., 2010; Schaufeli et al., 2002). For example, work engagement has been positively correlated with organizational commitment (Hakanen et al., 2006), task performance (Halbesleben & Wheeler, 2008), contextual performance (Bakker et al., 2004), financial income (Xanthopoulou et al., 2009), and innovativeness (Hakanen et al., 2008). In addition, work engagement has been found to be negatively associated with the intention to leave a company (Halbesleben, 2010) and the number of mistakes performed at work (Prins et al., 2009). As outlined by Bakker (2009), engaged employees have a better job performance compared to less engaged employees for four main reasons: (a) They experience positive emotions at work, which facilitates the creation of new ideas and resources; (b) they are healthier and can focus all their energy on work; (c) they actively seek feedback and support, which in turn builds new resources; and (d) they can transfer their energy to their team, which leads to increased team performance. These reasons have been put into two processes built on the Job Demands Resources model (JD-R model, Bakker & Demerouti, 2017) that explain why engaged employees can show better performance.¹ The health-related process refers to what employees can do, which relates to reason (b). The motivation-related process refers to what employees will do (Demerouti & Cropanzano, 2010) which relates to reasons (a), (c) and (d).

These reasons result in a variety of behavioural patterns that enable engaged employees to perform better at work: engaged employees make more use of job crafting (Tims et al., 2015), taking initiatives and pursuing learning goals (Sonnentag, 2003), and create a positive working climate (Bakker et al., 2006). These behaviours contribute to the formation of new resources or constitute resources themselves. According to the

conservation of resources theory (COR theory; Hobfoll & Shirom, 2000), employees use their resources (i.e., their dedication, improved work environment, new skills) to invest in acquiring additional resources (i.e., supervisor and peer support, job control). These resource gain spirals lead to the preservation of health and ultimately increase performance, especially among highly motivated (or committed) employees. Moreover, engaged employees also contribute to increased organizational performance (e.g., financial returns; Xanthopoulou et al., 2009).

Results from a previous meta-analysis show that engagement has an incremental influence on task performance above job satisfaction and organizational commitment and is positively related to other-rated ($\rho = .39$)² and self-rated task performance ($\rho = .43$; Christian et al., 2011). Regarding these findings the following first hypothesis emerges:

Hypothesis 1: There is a positive relationship with a medium effect between work engagement and task performance.

Associations on facet level

Regarding the influence of the individual facets of work engagement (i.e., vigour, dedication, and absorption), on task performance, the literature draws a heterogeneous picture. Most of the theoretical mechanisms behind the relationship between work engagement and task performance are discussed based on work engagement as an overall construct (Bakker, 2011), and therefore, it remains unknown which specific psychological mechanisms actually account for the effects. It has been shown that vigour and dedication might be representing the core dimensions of work engagement (Lisbona et al., 2018), while absorption might be more related to a prolonged state of flow (Nakamura & Csikszentmihalyi, 2014; Schaufeli et al., 2009). Therefore, some studies only relate vigour and dedication to performance (Bakker & Demerouti, 2009; Lorente et al., 2014) assuming they might be the main reasons for the positive link to task performance. Vigour and dedication were proposed to promote an approach action tendency (i.e., an urge to carry out proactive behaviour; Bakker et al., 2012) which implies a more direct route to performance related behaviour. In contrast, absorption – as a state in which it becomes difficult to detach oneself from work – is understood as a more distal consequence of the other two subcomponents (e.g., De Bruin et al., 2013). Therefore, it could be assumed that vigour and dedication are more likely to result in proactively taking initiatives and could thus be more strongly related to task performance. Nevertheless, a positive correlation between absorption and task performance has been identified in numerous cases (Ohemeng et al., 2019; Reis et al., 2016).

Furthermore, there is a debate in the literature about the factorial validity of the UWES and – as a consequence – about the dimensionality of work engagement as a construct (Kulikowski, 2017). The different facets are highly correlated with each other (Christian & Slaughter, 2007), which may even argue for a unidimensional model. Different associations of the three facets with task performance would demonstrate that the

distinction between three facets is meaningful and practically useful. If all three facets were associated with task performance in the same way, this would on the one hand underline the relevance of the contents of all three facets, but at the same time it would increase the pressure to empirically justify the distinction between the facets for practical purposes (e.g., using a differentiated engagement profile for diagnosing employee engagement). Based on this debate, it is interesting to see how work engagement is related to different outcomes, such as task performance. Based on this heterogeneous picture, we pose the following research question:

(1) Do the work engagement facets (vigour, dedication, and absorption) relate differently to task performance?

The direction of effect

The extent to which work engagement is able to predict future task performance has so far been addressed primarily theoretically on the basis of the JD-R model. It stands to reason that dedicated work and the will to put extra effort into one's tasks is the cause for better performance. At the empirical level, a positive correlation has been found in some longitudinal studies (Carter et al., 2018; Tims et al., 2015). Moreover, work engagement is considered to be a quite stable variable (Seppälä et al., 2015). Nevertheless, it must be noted that longitudinal effects may be smaller than cross-sectional ones (Rindfleisch et al., 2008). Summarizing all these findings, the following hypothesis results:

Hypothesis 1a: There is a positive relationship with a small to medium effect between work engagement and future task performance.

The impact of how performance and engagement are measured

The various conceptualizations of work engagement lead to different possibilities of assessing and measuring this construct. Simpson (2009) integrated multiple measurement methods into four different approaches; a list of these instruments and the results of the two previous meta-analyses (Christian et al., 2011; Mackay et al., 2017) are presented in Table 1. We removed the *Disengagement* subscale of the Oldenburg Burnout Inventory, since so far no definitive empirical evidence shows that disengagement is the exact opposite of work engagement (Mackay et al., 2017; Schaufeli et al., 2008). Previous meta-analyses removed studies that used the Gallup Workplace Audit (Harter et al., 2002) because it assesses employees' perceptions of work characteristics.

In our analysis, we include the measures based Schaufeli and colleagues' definition of work engagement (i.e., the variants of the UWES; Schaufeli & Bakker, 2003; Schaufeli et al., 2009) because their underlying definition covers engagement in a detailed and comprehensive way. Based on the same argument, we included the following measures in accordance with Kahn's (1990) definition: the job engagement scale (JES; Rich et al., 2010); the employee engagement scale (EES; Saks, 2006);

Table 1. Constructs, Definitions and Measures of Work Engagement.

| Construct | Definition | Measure |
|------------------------------------|--|--|
| Personal Engagement/Job Engagement | Employees' expression in and connection to their respective work roles on a physical, cognitive and emotional level (Kahn, 1990) | <ul style="list-style-type: none"> • Job Engagement Scale (Rich et al., 2010) • Psychological Engagement Scale (May et al., 2004) • Job Engagement Scale (Saks, 2006) • Shirom-Melamed Vigour Measure (Shirom, 2004) • Intellectual, Social and Affective Engagement Scale (Soane, Truss, Shantz, Alfes, Rees, & Gatenby, 2013) • Job Engagement Scale (Lee, Kim, & Kim, 2014) |
| Work Engagement | "A positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002) | <ul style="list-style-type: none"> • Utrecht Work Engagement Scale (Schaufeli et al., 2002) |
| Engagement/burnout ^a | Engagement is characterized by energy, contribution and effectiveness, therefore as the antipole to burnout's exhaustion, cynicism and inefficacy (Maslach & Leiter, 1997; Leiter & Maslach, 2004) | <ul style="list-style-type: none"> • Disengagement Scale of the Oldenburg Burnout Inventory (Demerouti, Bakker, Vardakou, & Kantas, 2003) |
| Employee Engagement ^a | Employee's involvement in, satisfaction of and enthusiasm for their work (Harter et al., 2002) | <ul style="list-style-type: none"> • Gallup Workplace Audit (Harter et al., 2002) |

Note: ^a Definitions and measures are not included in the present analysis. Adapted from "Engagement at work: A review of the literature", by M. Simson, 2009, *International Journal of Nursing Studies*, 46, p. 1014.

the ISA engagement scale (Soane et al., 2012); and the psychological engagement scale (PES; May et al., 2004). In a previous analysis (Christian et al., 2011) that used slightly different scales, no moderating effect could be obtained. However, the scales for measuring work engagement are based on two different definitions; thus, the following research question is stated:

(2) How does the type of work engagement measure (UWES vs. other) moderate the effect between engagement and task performance?

The measurement of job performance is generally divided into objective and subjective assessments (Viswesvaran, 2001). When comparing these two types of assessments, a moderate (Bommer et al., 1995) to high (Dawes, 1999) relationship can be observed, but they are by no means completely identical. Objective assessments, which are based on quantifiable work results, reflect an employee's productivity and the quality of products or services they provide. Despite the supposed benefits of objective data, this form of measurement often describes only one part of job performance, such as financial success (Zulkiffli & Perera, 2011). For this reason, a subjective measurement of job performance can provide a more accurate and holistic view, although it is subject to bias given the varying qualifications for assessment (Muckler & Seven, 1992). Only few studies have analysed the effect of work engagement on objective performance (e.g., Carter et al., 2018), and the degree of this effect has not yet been compared to the effect of work engagement on subjective performance evaluations. Therefore, the following research question emerges:

(3) How does the type of performance measure (objective vs. subjective) influence the relationship between work engagement and task performance?

Subjective measurement methods differ depending on who evaluates job performance, whereby evaluations are provided either by supervisors, colleagues, customers or the person themselves (Viswesvaran, 2001). Employee assessments given by supervisors or colleagues are only moderately related to employee self-assessments, but assessments by supervisors are highly consistent with assessments given by colleagues (Harris & Schaubroeck, 1988). In addition, self-ratings are often less accurate than other-ratings (Atkins & Wood, 2002).

However, instruments for measuring work engagement are only based on self-assessments (Christian et al., 2011), and using the same assessment method leads to higher correlations between different constructs due to common method variance (Podsakoff et al., 2003; Rindfleisch et al., 2008). Hence, higher correlations between self-rated task performance and self-assessed work engagement are expected. This argumentation coincides with the results of Christian et al. (2011), who found that the correlation between other-rated task performance and work engagement was lower than that between self-rated task performance and work engagement. Therefore, we offer the moderator hypothesis:

Hypothesis 1b: Self-rated task performance is associated more strongly with work engagement than other-rated task performance.

Absenteeism

Regarding employee absenteeism, a distinction exists between the frequency and duration of absence (Hensing et al., 1998). Frequency refers to how often an employee calls in sick, regardless of the length of the absences; thus, frequency is often used to indicate voluntary absence due to a lack of motivation (Bakker, Demerouti, De Boer et al., 2003). Conversely, the duration of absence refers to the length of the individual absences, without considering the frequency of sick leave notifications. As such, duration is taken to indicate sickness-related absences and, thus, involuntary absence (Steel, 2003).

Two hypotheses prevail on the reasons for absenteeism (Schaufeli et al., 2009): (a) The withdrawal hypothesis refers to absence from work due to aversive working conditions, whereas (b) the stress-reaction hypothesis explains involuntary and prolonged periods of absence, as employees who are exposed to severe and frequent work stressors tend to call in sick for longer (Bakker, Demerouti, De Boer et al., 2003). Notably though, the main reason for absenteeism is sickness (Kocakulah et al., 2016). Thus, not all diseases are caused by stress and work-related issues. Harrison and Martocchio (1998) discuss further reasons behind short-, mid-, and long-term

absenteeism, such as age, low job satisfaction or the absence of acute stressors respectively. These reasons can in turn be assigned to the two hypotheses of absence: low job satisfaction as a form of an aversive working condition can be explained by the withdrawal hypothesis, while the absence of acute stressors can be attributed to the stress-reaction hypothesis. Johns (1997) explains and compares different theories that may underlie employee absenteeism that include different causes for absenteeism. Examples are the medical model that attributes absenteeism to several physical or mental diseases or the economic model that includes employees' wages, the economic circumstances and the value of work versus non-work time (Johns, 1997). A recent model of the social and relational causes of absenteeism (Miraglia & Johns, 2021) focuses on work and non-work social factors (e.g., organization or family) and proposes six different paths (e.g., attitudes or resources) that lead to individual absence.

Work engagement and absenteeism

Researchers have suggested that high levels of work engagement will lead to fewer absences, because highly engaged employees (vs. hardly engaged employees) may be more motivated to attend work and are healthier (Schaufeli et al., 2009; Shantz & Alfes, 2015). Accordingly, some (albeit few) studies reported negative correlations between work engagement and absenteeism (e.g., Schaufeli et al., 2009; Soane et al., 2013; Ten Brummelhuis et al., 2010). Further, one meta-analysis, although only based on $k = 3$ correlations (Mackay et al., 2017), reported a small but significant negative correlation ($\rho = -.10$). Findings indicate that according to the withdrawal hypothesis, engaged employees have a higher overall motivation to work (Schaufeli et al., 2009), and, according to the stress-reaction hypothesis, engaged employees report overall better health (Halbesleben, 2010). Considering the results of the meta-analysis by Mackay et al. (2017), our second main hypothesis is as follows:

Hypothesis 2: A small negative correlation exists between work engagement and absenteeism.

Previous studies have suggested similar results for both the frequency and duration of absenteeism. Regarding frequency, studies have identified negative correlations between work engagement and the frequency of absence (Schaufeli et al., 2009; Shantz & Alfes, 2015). Engaged employees might be voluntarily absent less often because they may aim to perform their tasks in a self-determined manner, even under adverse working conditions. Moreover, engaged workers consider their work stimulating, such that they generally enjoy spending time at work. Further, regarding absorption, engaged employees tend to lose track of time while working and are intrinsically motivated to perform their tasks, resulting in lower absence rates (Shantz & Alfes, 2015).

Regarding duration, a study by Schaufeli et al. (2009) described a negative correlation between the duration of absence and work engagement. Where sickness is the primary cause for absenteeism (Kocakulah et al., 2016), one must consider the correlation between work engagement and employees' overall health. Engaged employees report fewer

psychosomatic complaints, such as headaches or chest pain (Schaufeli et al., 2008), fewer cardiovascular complaints (Langelaan et al., 2007) and less burnout-related fatigue (Maricuțoiu et al., 2017). In addition, engaged persons rate both their overall health status and their ability to work more positively (Hakanen et al., 2006) and are seen as mentally healthier than the less engaged (Shirom, 2003). Good health can be regarded as a condition for engaged work and, thus, may function as a personal resource and predictor of work engagement; more resources can be invested in work when one is healthy (Bakker & Demerouti, 2007). On the other hand, engaged employees do not perceive work as exhausting and stressful but rather as positively challenging; thus, they may be less sensitive to stress-related health problems (Bakker, 2009). Moreover, Johns and Al Hajj (2016) did not find any significant distinction between the duration and the frequency of absences in their meta-analysis on how these two forms of absenteeism are associated with different degrees of voluntariness.

Since previous studies have found negative correlations between work engagement and both the duration and frequency of absenteeism, and theoretical accounts can explain both the motivational and disease-related process or question the distinction between these two processes altogether, we offer the following moderation hypothesis:

Hypothesis 2a: The type of absenteeism (frequency vs. duration) does not moderate the relationship between work engagement and absenteeism.

Associations on facet level

There has been limited research on the relationship of individual engagement facets to absenteeism. Since vigour and dedication could imply a stronger path to behaviour (Bakker et al., 2012) stronger negative effects in relation to absenteeism could be possible compared to absorption. Bakker (2011), on the other hand, focuses on the aspect of high activation in the case of vigour and absorption and on motivation and work pleasure in the case of dedication. Therefore, dedication could be assumed to be more related to a motivational process, while vigour and absorption could be based more on a health-related process. Notably, previous studies do not provide a clear picture of differences of the engagement-absenteeism correlation across engagement facets (Rongen et al., 2014; Ten Brummelhuis et al., 2010). Again, regarding the theoretical mechanisms underlying the relation of engagement to absenteeism, the argumentation is mainly based on work engagement as an overall construct. Therefore, the following research question is posed:

(4) Do the work engagement facets (vigour, dedication, and absorption) relate differently to absenteeism?

The direction of effect

Very few studies have investigated the direction of the relationship between work engagement and absenteeism. Schaufeli

et al. (2009) found a significantly negative correlation between work engagement and the absence duration and frequency across the following one-year period. Following the withdrawal and the stress-reaction hypothesis (Schaufeli et al., 2009), engaged employees reporting a higher motivation as well as better health, may be less likely to be absent in the future. Therefore, the following hypothesis is formulated:

Hypothesis 2b: There is a negative relation with a small effect between work engagement and future absenteeism.

The impact of how absenteeism is measured

Regarding the way, data on absenteeism is collected, differences exist analogously to task performance (Hypothesis 1a), in that there are differences between self-reported (i.e., employee) and other-rated (i.e., organizational) data. Employees tend to underestimate their absence times, which might be caused by selective recall, memory bias, or socially desirable responding (Johns, 1994). This leads to the following moderator hypothesis:

Hypothesis 2c: Self-indicated absenteeism leads to a weaker negative relationship with work engagement than other-reported absenteeism.

Method

Literature research

Between April 2019 and May 2020, an extensive literature search was conducted to obtain all studies that report relations between work engagement and task performance or absenteeism indicators. For this purpose, the databases PsycInfo, Web of Science, ABI/Inform, Google Scholar, JSTOR, Social Sciences Citation Index, MEDLINE, ProQuest Business, Business Source Complete, PSYINDEX and Scopus were examined. In addition, the literature references from the websites of the key authors Wilmar Schaufeli and Arnold Bakker were used, as well as data from previously published meta-analyses (Christian et al., 2011; Mackay et al., 2017). The research was carried out using the following keywords in an exhaustive combination: *Engagement* with the additions *Work, Employee or Job, Performance* in combination with *In-Role, Task, Job or Work, Absenteeism, Absence, Absence Frequency, Absence Duration* as well as with the respective German translations *Arbeits-, Mitarbeiter- or Jobenagement* in combination with *Arbeitsleistung, Aufgabenleistung, Absentismus, Abwesenheit, Abwesenheitsdauer* and *Abwesenheitsfrequenz*. According to Christian et al. (2011), the period in which the studies were published was limited to 1990 to May 2020, as the term *work engagement* was first used by Kahn in 1990.

Inclusion criteria

To be included in the meta-analysis, the studies had to report original data and sample sizes, provide sufficient information to

calculate a correlation coefficient and capture task performance or absenteeism related to work engagement. Studies that measured disengagement were not included because disengagement, as a facet of burnout, has not been conclusively determined to be the opposite of work engagement (Mackay et al., 2017). Also, we excluded studies that measured work engagement using the Gallup Workplace Audit or the Employee Engagement Instrument (Pati & Kumar, 2015), as these instruments tend to capture the perception of work characteristics from the employee's perspective (Harter et al., 2002) or have defined engagement based solely on performance (Pati, 2012) rather than addressing work engagement at the affective level. English and German studies were included; studies published in other languages were not. Studies were excluded if they examined a population not in full-time employment (e.g., students), or if they took place in a non-work context. One study only reported standardized regression coefficients. Therefore, the correlation was estimated by direct imputation, as this method offers acceptable accuracy (Peterson & Brown, 2005). In 20 cases where studies did not report sufficient information to be included, the studies' corresponding authors were contacted. Six authors responded with detailed information as well as correlation coefficients. The process of selecting studies for the meta-analysis is shown in Figure 1. In total, we included 163 studies in the meta-analysis, in which 10 studies reported 11 correlations regarding the relationship between work engagement and absenteeism, and 154 studies reported 179 correlations between work engagement and task performance.

Coding process

The coded variables included the authors, journal, year of publication (which was centred around its mean in the subsequent analysis) and publication status as well as the continent, country and industry in which the study was conducted. The number of participants, their mean age and the percentage of female participants were included. Regarding work engagement, the measurement (UWES vs. other) and the reliability (estimated by means of Cronbach's alpha) of the scales and subscales as reported in the primary study were included. Considering absenteeism, the source of the absenteeism measure (self-reported vs. other-reported) and the type of absenteeism (duration, frequency, mixed) were included. Absenteeism measures are often skewed and, hence, sometimes transformed through log transformations, but previous meta-analyses have not reveal any issues calculating with transformed data (Darr & Johns, 2008). To assess absenteeism we used only a single indicator, such that no Cronbach's alpha estimates were available for coding. Regarding task performance, we coded the type of performance measurement (subjective vs. objective), the performance evaluator (self, manager, colleague, customer) and, if a scale was used to assess task performance, the Cronbach's alpha estimates. Finally, the correlations between the variables were included in the coding sheet. If correlations between task performance and the three facets of work engagement were reported separately, we included a mean as well as the individual correlations. Given that some studies with a longitudinal design reported more than one coefficient

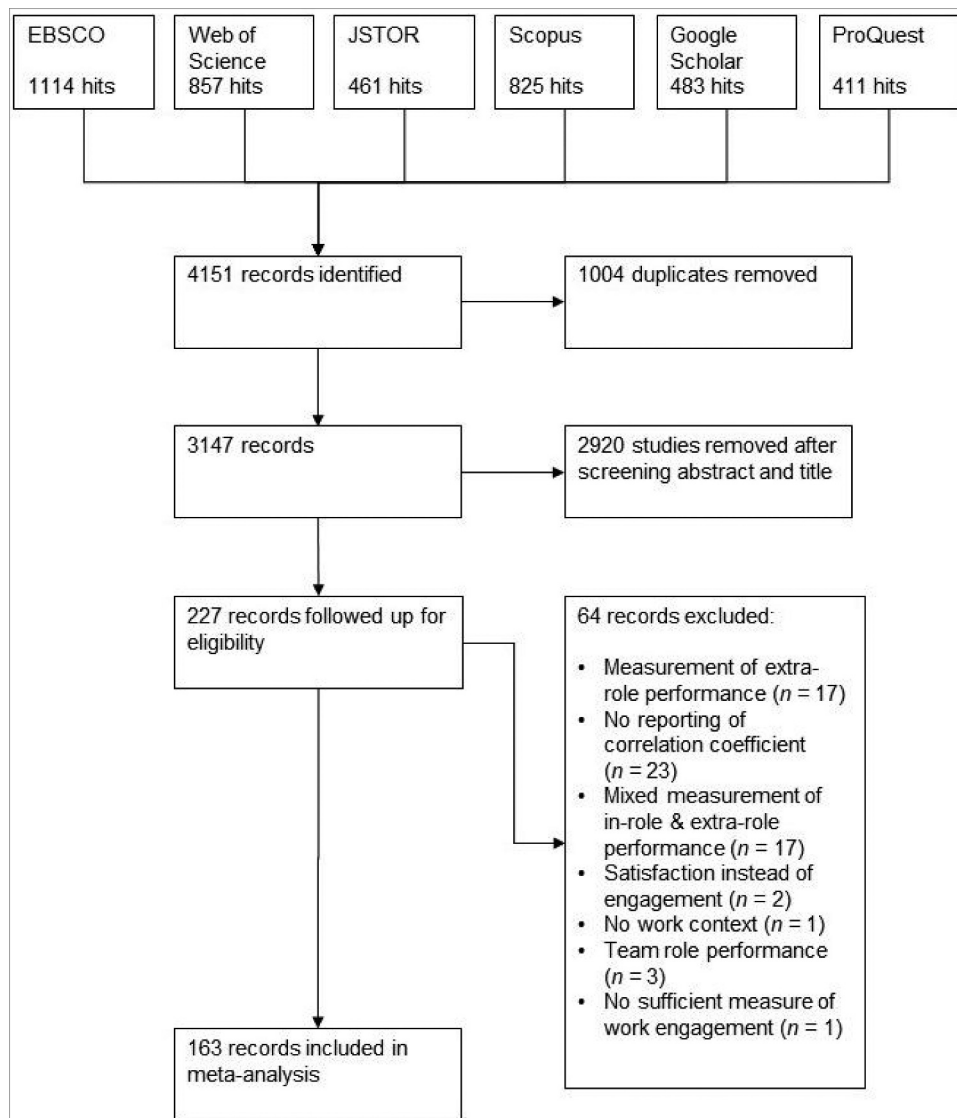


Figure 1. Flowchart showing how the studies for the analyses were selected.

due to repeated measurement, we included the effects of the first measurement point into our analysis to ensure better comparability to effects from cross-sectional studies. Additionally, the longitudinal relationship between engagement at t_1 and task performance and absenteeism at t_2 was coded as well as the time period in terms of months that elapsed between the two survey periods. Two research assistants carefully coded the included studies, and interrater reliability was excellent (Cohen's $\kappa = .95$). The remaining differences were discussed until a consensus was reached.

Meta-analytic calculations

The *metafor* package for the statistical software R (R Core Team, 2020) was used for calculations (Viechtbauer, 2010). First, the reported coefficients were transformed, if needed, allowing the following two meta-analyses to be based on product-moment correlations.

Correlations between work engagement and absenteeism were adjusted by correcting for attenuation (Hunter &

Schmidt, 2004). As the measurement of absenteeism is not affected by a special reliability coefficient, only the reliability of the work engagement measure was used to correct for attenuation. Correlations between work engagement and performance were corrected using the same formula (Spearman, 1904), but using the reliabilities of both the work engagement and the task performance measure. Missing reliability coefficients only had to be imputed for correlations between engagement and performance, because reliabilities for work engagement in studies on its relationship with absenteeism were fully available. Missing reliability estimates were estimated conservatively at a value of .80 for subjective performance data, whereas for objective performance data reliability was considered to be perfect. Sensitivity analyses were calculated to ensure that this imputation strategy for reliability coefficients would not essentially change the results of the meta-analyses; they did not show significant differences between the estimated correlation coefficients, and, hence, the imputation strategy appeared to be a reasonable approach. Moreover, if correction for attenuation resulted in

correlation coefficients that exceeded 1, the original attenuated correlation was used, which was only the case in the study by Farooq et al. (2018). After correcting for attenuation, all coefficients were transformed into Fisher's-z metric to achieve an approximate normal distribution. No corrections for range restriction were made because the required data was not available.

The Cochran's *Q* homogeneity test (Cochran, 1954) was applied to assess the heterogeneity of the effect sizes. In addition, we calculated the I^2 statistic (Higgins & Thompson, 2002), indicating the percentage of total variance that can be attributed to between-study variance. Since heterogeneous samples and measurement differences were present, we decided a priori to calculate random effects analyses. As is recommended for heterogeneous variance (Langan et al., 2019), we used Restricted Maximum Likelihood (REML) estimation. Meta-analytic calculations provided an estimated correlation coefficient with a 95% confidence interval as well as an 80% credibility interval.

Furthermore, we also considered any data dependency arising from several studies by the same or similar groups of authors (Konstantopoulos, 2011). Thus, a multilevel analysis was calculated where studies were nested in groups of authors. For the multilevel analyses, we again used the REML estimator. Since fewer studies analysed the relationship between work engagement and absenteeism, we did not apply the cluster structure to these studies; at a minimum, 30 units should be used in multilevel modelling (Maas & Hox, 2005).

For studies reporting separate correlations between the three facets of work engagement and task performance, different meta-analyses were conducted to examine the robustness of the respective correlation estimates. The same applies to the studies reporting longitudinal data, for which another separate analysis was calculated.

One study on the relationship between work engagement and absenteeism (Ogbonnaya & Valizade, 2018) contained the majority of the total sample size of the meta-analysis. To examine the sensitivity of the results, we conducted a separate analysis without the data from this study. To control further for the influence of directly imputed estimates, we calculated another sensitivity analysis without the respective study (Zahrah et al., 2017) for which we used this method.

Moderator analyses

The influence of different categorical moderators was investigated. The first moderator considered was the method used to measure performance. Here, we analysed the difference between subjective and objective assessment of performance. Subsequently, for subjective assessments, the ratings by supervisors, colleagues, customers, and the person themselves were compared with each other. In the analysis of the correlation between work engagement and absenteeism, we examined the moderating effect of the type of absenteeism (frequency vs. duration). We also analysed whether the assessment type of absenteeism data (self-reported vs. other-reported) had a moderating effect. A further potential moderator was the measurement method of engagement (UWES vs. others) which could only be examined in the analysis of work

engagement and task performance, as the studies on the engagement correlations with absenteeism exclusively relied on the UWES. The following moderators were included in the analyses on both performance and absenteeism. As the studies were published across five different continents, we considered the continent as an additional moderator. The last categorical moderator was the country of publication. Because most studies were published in the Netherlands and the USA, we calculated a moderation with three categories (i.e., Netherlands, USA, other). Age, gender (i.e., female ratio) and publication year were included as continuous moderators. For the longitudinal data, we included the number of months passed between both measurement points as a continuous moderator into the analysis.

Publication bias

Publication bias (Rosenthal, 1979) was analysed using funnel plots and the trim-and-fill method (Duval & Tweedie, 2000). The Egger-Test was performed to check the asymmetry of the funnel plots (Egger et al., 1997). If the test reaches statistical significance at the .05 level, the funnel plot is asymmetrical, and the results might be affected by publication bias.

Results

Descriptive information

Table 2 provides a summary illustrating the descriptive information of the studies we included, presenting the respective numbers of correlation coefficients and sample sizes. It also includes information on all assessed moderators. Of the 163 studies considered, 154 ($N = 70,144$) investigated links between work engagement and task performance, with sample sizes ranging from $N = 19$ (Coo & Salanova, 2018) to $N = 3,296$ (Inamizu & Makishima, 2018). In total, 10 studies ($N = 69,038$) investigated links between work engagement and absenteeism, with sample sizes of $N = 55$ (Shimmin, 2010) to $N = 64,505$ (Ogbonnaya & Valizade, 2018).

The overall sample size was $N = 139,182$. The mean age in the overall sample was 36.93 (for the studies that provided this data); the age was 36.82 in the performance sample and 38.75 in the absenteeism sample. Gender distribution ranged from 0% to 100% female in the performance sample and 9% to 88.40% in the absenteeism sample. Of the 163 studies, 152 were published in reviewed journals, 7 were doctoral dissertations or masters' theses and 4 were non-published grey literature. 117 studies (72%) were published between 2015 and 2020 and thus had not yet been included in a previous meta-analysis. Only one study was published in German, all others in English.

Meta-analysis regarding work engagement and performance

As expected, we observed substantial heterogeneity in the data ($Q_E(178) = 5491.743$, $p < .001$), which was supported by high variances between ($\tau = 0.212$; $I^2_b = 67.40\%$) and within ($\tau = 0.314$; $I^2_w = 30.82\%$) clusters.

Table 2. Descriptive Information on the Studies Included in the Meta-Analysis.

| Category Construct | <i>k</i> | <i>N</i> | mean estimated reliability |
|-----------------------------|----------|----------|----------------------------|
| Country | | | |
| Netherlands | 34 | 13,727 | – |
| USA | 29 | 9,581 | – |
| Other | 127 | 115,874 | – |
| Continent | | | |
| Africa | 8 | 3,819 | – |
| America | 32 | 9,612 | – |
| Asia | 58 | 26,675 | – |
| Europe | 86 | 95,838 | – |
| Australia | 2 | 128 | – |
| International | 4 | 3,110 | – |
| Industry | | | |
| Banking/Financial Sector | 17 | 4,797 | – |
| Consulting/Services | 11 | 6,457 | – |
| Health Care System | 24 | 70,528 | – |
| Hotel/Restaurant | 12 | 3,103 | – |
| Industry/Manufactory | 14 | 7,319 | – |
| Sales/Retail | 5 | 2,307 | – |
| University/Education | 14 | 2,425 | – |
| Mixed | 57 | 31,694 | – |
| Other | 13 | 4,145 | – |
| Measurement Work Engagement | | | |
| UWES | 162 | 130,635 | .890 |
| UWES-9 | 108 | 39,194 | .897 |
| UWES-17 | 29 | 13,146 | .883 |
| UWES-modified | 25 | 78,295 | .872 |
| Other | 28 | 3,934 | .931 |
| Measurement Performance | | | |
| Subjective | 171 | 68,146 | .844 |
| Objective | 8 | 1,998 | – |
| Rater Performance | | | |
| Self-rated | 101 | 47,450 | .830 |
| Other-rated | 70 | 18,023 | .864 |
| Manager | 62 | 18,757 | .865 |
| Colleague | 6 | 1,404 | .857 |
| Mixed | 2 | 535 | .835 |
| Measurement Absenteeism | | | |
| Self-rated | 7 | 67,686 | – |
| Company records | 4 | 1,352 | – |
| Type Absenteeism | | | |
| Frequency | 3 | 783 | – |
| Duration | 8 | 68,255 | – |

Notes. *k* = number of coefficients; *N* = total sample size; international = samples recruited in multiple continents; Industry Mixed = sample consisting of employees of multiple industries; Industry Other = sample consisting of homogeneous workplaces that could not be categorized into the prior groups; UWES = Utrecht Work Engagement Scale; UWES-9 = Utrecht Work Engagement Scale with 9 items; UWES-17 = Utrecht Work Engagement Scale with 17 items; UWES-modified = modified version of the Utrecht Work Engagement Scale; JES = Job Engagement Scale; Rater Performance Mixed = rating consisted of mixed ratings of managers, colleagues and/or customers.

To better understand and interpret the calculations, the estimated Fisher's *z*-correlations were back-transformed into Pearson correlations. Table 3 shows the results of the meta-analytic calculations on the relationship between work engagement and task performance. An estimated corrected correlation coefficient of $\rho = .483$; CI [.424; .538]; $p < .001$ indicated a medium to large correlation between work engagement and task performance supporting Hypothesis 1. To ensure that the direct imputation of the correlation on the basis of standardized regression coefficients does not cause a systematic bias, an analysis was calculated without the respective study by Zahrah et al. (2017). Without this study, an estimated effect of $\rho = .480$ (CI [.421; .535]; $p < .001$) was found. Due to the strong overlap of the confidence intervals, the study was included in further calculations. Table 3 also shows the meta-analysis results for the correlations between

work engagement's three UWES facets and task performance, addressed with the first research question. Data was heterogenous for the analysis with *vigour* ($Q_E(25) = 180.824$, $p < .001$; $\tau = 0.173$; $I^2 = 92.63\%$), *dedication* ($Q_E(24) = 129.524$, $p < .001$; $\tau = 0.140$; $I^2 = 89.47\%$) and *absorption* ($Q_E(22) = 158.010$, $p < .001$; $\tau = 0.156$; $I^2 = 90.94\%$). The estimated correlation coefficients for task performance with *vigour* ($\rho = .386$; CI [.322; .446]; $p < .001$), *dedication* ($\rho = .358$; CI [.303; .411]; $p < .001$) and *absorption* ($\rho = .346$; CI [.282; .408]; $p < .001$) did not differ significantly, as their confidence intervals largely overlapped. Hypothesis 1a states a positive effect between work engagement and future task performance which is supported by an estimated correlation coefficient of $\rho = .373$; CI [.289; .451]; $p < .001$ for the longitudinal studies (see Table 3), indicating that a high level of work engagement might predict future high task performance. Data was heterogenous with $Q_E(44) = 197.072$, $p < .001$; $\tau = 0.151$; $I^2 = 82.89\%$). Because the confidence interval of the effect size in longitudinal studies overlapped with that of the overall effect, no significant differences between cross-sectional and longitudinal studies can be assumed.

Meta-analysis regarding work engagement and absenteeism

For the relationship between absenteeism and work engagement, the data was also heterogenous ($Q_E(10) = 120.842$, $p < .001$), and a high variance was found between the different studies, $\tau = 0.134$ ($I^2 = 93.92\%$).

The results of the random effects meta-analysis of the correlation between work engagement and absenteeism are shown in Table 4, where the estimated corrected correlation is $\rho = -.171$; CI [–.254; –.087]; $p < .001$, confirming Hypothesis 2. To control for the sensitivity of the results, we calculated a separate analysis without the data from Ogbonnaya and Valizade (2018), since their study was extremely influential due to its large sample size. Without this study, an estimated effect of $\rho = -.185$ (CI [–.273; –.095]; $p < .001$) was found. Hence, Ogbonnaya and Valizade's study had a negligible influence on the meta-analysis results because the confidence intervals of the analysis with and without these data greatly overlapped.³ Therefore, the analysis of moderators was pursued with $k = 11$ studies.

The results for the three facets of work engagement, addressed by the fourth research question, are presented in Table 4. Data was heterogenous for the analysis with *vigour* ($Q_E(4) = 65.483$, $p < .001$; $\tau = .157$; $I^2 = 92.45\%$), *dedication* ($Q_E(4) = 36.450$, $p < .001$; $\tau = 0.124$; $I^2 = 88.50\%$) and *absorption* ($Q_E(2) = 25.212$, $p < .001$; $\tau = 0.124$; $I^2 = 91.90\%$). We found significantly negative correlations between *vigour* and absenteeism ($\rho = -.161$; CI [–.298; –.018]; $p < .05$) and between *dedication* and absenteeism ($\rho = -.138$; CI [–.252; –.021]; $p < .05$), but the confidence interval of the estimated effect between *absorption* and absenteeism ($\rho = -.076$; CI [–.219; .070]; $p = .307$) included zero, thus it was not significant. The estimated corrected correlation coefficient between work engagement and future absenteeism was $\rho = -.197$; CI [–.337; –.047]; $p < .05$, supporting Hypothesis 2b. Results were heterogenous with $Q_E(5) = 77.883$, $p < .001$; $\tau = 0.181$; $I^2 = 92.26\%$). See Table 4 for full results.

Table 3. Results of the Multilevel Meta-Analysis of the Relation between Work Engagement and Task Performance and of the Meta-Analysis of Vigour, Dedication and Absorption with Task Performance as well as future Task Performance.

| Effects | <i>r</i> | ρ | SE_{ρ} | 95% CI | | <i>p</i> | 80% CR | | <i>k</i> | <i>N</i> |
|--------------------------|----------|--------|-------------|--------|------|----------|--------|------|----------|----------|
| | | | | LB | UB | | LB | UB | | |
| Fixed effect | | | | | | | | | | |
| Overall effect | .402 | .483 | .038 | .424 | .538 | ***<.001 | .039 | .768 | 179 | 70,144 |
| Random effects | | | | | | | | | | |
| Within-cluster variance | .098 | | | | | | | | | |
| Between-cluster variance | .045 | | | | | | | | | |
| Random effects | | | | | | | | | | |
| Vigour | .321 | .386 | .037 | .322 | .446 | ***<.001 | .178 | .560 | 26 | 11,565 |
| Random effects | | | | | | | | | | |
| Dedication | .305 | .358 | .031 | .303 | .411 | ***<.001 | .189 | .507 | 25 | 11,513 |
| Random effects | | | | | | | | | | |
| Absorption | .283 | .346 | .037 | .282 | .408 | ***<.001 | .153 | .514 | 23 | 9,954 |
| Random effects | | | | | | | | | | |
| longitudinal | .303 | .373 | .048 | .289 | .451 | ***<.001 | -.011 | .661 | 45 | 10,030 |

Notes. 95% CI = 95% Confidence interval of corrected estimated correlation coefficients; 80% CR = 80% credibility interval of corrected estimated correlation coefficients; *r* = uncorrected estimated correlation coefficient; ρ = estimated correlation coefficient corrected for attenuation; SE_{ρ} = standard error of corrected correlation coefficient; LB = lower bound; UB = upper bound; *k* = number of coefficients; *N* = total sample size.

Table 4. Results of the Meta-Analysis of the Relation between Work Engagement, its three Facets and Absenteeism as well as Future Absenteeism.

| Effects | <i>r</i> | ρ | SE_{ρ} | 95% CI | | <i>p</i> | 80% CR | | <i>k</i> | <i>N</i> |
|----------------|----------|--------|-------------|--------|-------|----------|--------|-------|----------|----------|
| | | | | LB | UB | | LB | UB | | |
| Random effects | | | | | | | | | | |
| Overall effect | -.161 | -.171 | .044 | -.254 | -.087 | ***<.001 | -.339 | .007 | 11 | 69,038 |
| Random effects | | | | | | | | | | |
| Vigour | -.146 | -.161 | .074 | -.298 | -.018 | *<.05 | -.367 | .059 | 5 | 2,962 |
| Random effects | | | | | | | | | | |
| Dedication | -.131 | -.138 | .060 | -.252 | -.021 | *<.05 | -.306 | .038 | 5 | 2,962 |
| Random effects | | | | | | | | | | |
| Absorption | -.070 | -.076 | .075 | -.219 | .070 | .307 | -.256 | .108 | 3 | 2,560 |
| Random effects | | | | | | | | | | |
| longitudinal | -.186 | -.197 | .077 | -.337 | -.047 | *<.05 | -.423 | -.053 | 6 | 2,342 |

Notes. 95% CI = 95% Confidence interval of corrected estimated correlation coefficients; 80% CR = 80% credibility interval of corrected estimated correlation coefficients; *r* = uncorrected estimated correlation coefficient; ρ = estimated correlation coefficient corrected for attenuation; SE_{ρ} = standard error of corrected correlation coefficient; LB = lower bound; UB = upper bound; *k* = number of coefficients; *N* = total sample size.

Moderator analysis of the correlation between work engagement and task performance

Analyses of the moderators on the relationship between work engagement and task performance are presented in Table 5. Results showed that the type of assessment (subjective vs. objective; research question three) had no moderating effect ($Q_M(1) = 0.015$; $p = .903$), whereas the rating type (self-report vs. other-rated) did moderate the relationship between work engagement and task performance ($Q_M(1) = 15.143$; $p < .001$). As put forth in Hypothesis 1b, self-ratings of performance led to higher correlations ($\rho = .522$, 95% CI = [.465; .574], $p < .001$), whereas the correlation between engagement and other-rated task performance was significantly lower ($r = .431$, 95% CI = [.365; .493], $p < .001$). Taking a closer look at the person who rated performance, results indicated that the correlation between engagement and performance as rated by supervisors was significantly lower ($\rho = .428$, 95% CI = [.360; .492], $p < .001$) than the correlation between engagement and self-rated performance. Also, the correlation between engagement and self-reported performance was higher than the correlation between engagement and performance as rated by colleagues ($\rho = .459$, 95% CI = [.371; .539], $p < .05$). These individual results were confirmed in the overall analysis of the rating source as a potential moderator ($Q_M(3) = 16.728$; $p < .001$). In regards to

the second research question we also found that the measurement method for work engagement did not influence the relationship between engagement and task performance ($Q_M(1) = 0.027$; $p = .869$), and this effect was found to be fairly robust across different continents ($Q_M(5) = 5.034$; $p = .412$) and countries ($Q_M(2) = 2.984$, $p = .225$).

The analysis of continuous moderators is presented in Table 6. Neither age ($Q_M(1) = 0.020$; $p = .965$) nor year of publication ($Q_M(1) = 2.225$; $p = .136$) nor gender ratio ($Q_M(1) = 1.796$; $p = .180$) had a significant influence on the effects. The time passed between the two measurement points had a significant effect on the longitudinal relationship between work engagement and task performance with $Q_M(1) = 7.002$; $p < .01$.

Moderator analysis of the correlation between work engagement and absenteeism

Results from the analysis of categorial moderators on the relationship between engagement and absenteeism appear in Table 7. Contrary to Hypothesis 2a, the type of absence does influence the relationship between engagement and absenteeism ($Q_M(1) = 4.387$; $p < .05$); $\rho = -.123$ (95% CI = [-.207; -.037], $p < .01$) is the estimated correlation for the duration of absence, and $\rho = -.282$ (95% CI = [-.423; -.158], $p < .05$) is the estimated

Table 5. Analysis of Categorical Moderators on the Relationship between Work Engagement and Task Performance.

| Effects | <i>r</i> | ρ | SE_{ρ} | 95% CI | | <i>p</i> | 80% CR | | <i>k</i> | <i>N</i> |
|--------------------------|----------|--------|-------------|--------|------|----------|--------|------|----------|----------|
| | | | | LB | UB | | LB | UB | | |
| Fixed effects | | | | | | | | | | |
| Measurement type | | | | | | | | | | |
| subjective | .402 | .483 | .038 | .424 | .538 | ***<.001 | .039 | .767 | 171 | 68,146 |
| objective | .410 | .488 | .052 | .388 | .576 | .903 | .041 | .772 | 8 | 1,998 |
| Random effects | | | | | | | | | | |
| Within-cluster variance | .098 | | | | | | | | | |
| Between-cluster variance | .045 | | | | | | | | | |
| Fixed effects | | | | | | | | | | |
| Rating type | | | | | | | | | | |
| self-rated | .441 | .522 | .038 | .466 | .574 | ***<.001 | .120 | .777 | 101 | 47,450 |
| other-rated | .346 | .431 | .030 | .365 | .493 | ***<.001 | .003 | .726 | 70 | 20,696 |
| Random effects | | | | | | | | | | |
| Within-cluster variance | .080 | | | | | | | | | |
| Between-cluster variance | .046 | | | | | | | | | |
| Fixed effects | | | | | | | | | | |
| Rater | | | | | | | | | | |
| self | .444 | .525 | .038 | .469 | .578 | ***<.001 | .125 | .779 | 101 | 47,450 |
| colleague | .375 | .459 | .044 | .371 | .539 | *<.05 | .035 | .743 | 6 | 1,404 |
| manager | .343 | .428 | .034 | .360 | .492 | ***<.001 | -.001 | .724 | 62 | 18,757 |
| mixed | .231 | .284 | .190 | -.086 | .586 | .129 | -.222 | .670 | 2 | 535 |
| Random effects | | | | | | | | | | |
| Within-cluster variance | .080 | | | | | | | | | |
| Between-cluster variance | .046 | | | | | | | | | |
| Fixed effects | | | | | | | | | | |
| Measure WE | | | | | | | | | | |
| UWES ^a | .402 | .485 | .042 | .420 | .545 | ***<.001 | .040 | .769 | 151 | 61,597 |
| other | .400 | .475 | .081 | .355 | .580 | .885 | .021 | .767 | 28 | 8,547 |
| Random effects | | | | | | | | | | |
| Within-cluster variance | .098 | | | | | | | | | |
| Between-cluster variance | .045 | | | | | | | | | |
| Fixed effects | | | | | | | | | | |
| Continent | | | | | | | | | | |
| Europe ^a | .344 | .419 | .058 | .321 | .508 | ***<.001 | -.041 | .733 | 78 | 27,421 |
| Africa | .315 | .387 | .126 | .148 | .584 | .764 | -.102 | .726 | 7 | 3,764 |
| America | .408 | .471 | .083 | .353 | .575 | .435 | .020 | .763 | 31 | 9,303 |
| Asia | .438 | .530 | .074 | .451 | .600 | .054 | .102 | .792 | 57 | 26,418 |
| Australia | .482 | .520 | .373 | -.181 | .870 | .739 | -.116 | .853 | 2 | 128 |
| international | .415 | .504 | .090 | .376 | .613 | .233 | .060 | .781 | 4 | 3,110 |
| Random effects | | | | | | | | | | |
| Within-cluster variance | .096 | | | | | | | | | |
| Between-cluster variance | .046 | | | | | | | | | |
| Fixed effects | | | | | | | | | | |
| Country | | | | | | | | | | |
| Netherlands ^a | .358 | .385 | .079 | .246 | .509 | ***<.001 | -.088 | .717 | 30 | 11,162 |
| USA | .388 | .491 | .082 | .413 | .561 | .100 | .048 | .772 | 29 | 9,581 |
| other | .408 | .487 | .073 | .427 | .542 | .072 | .045 | .769 | 120 | 49,401 |
| Random effects | | | | | | | | | | |
| Within-cluster variance | .099 | | | | | | | | | |
| Between-cluster variance | .044 | | | | | | | | | |

Notes. 95% CI = 95% Confidence interval of corrected estimated correlation coefficients; 80% CR = 80% credibility interval of corrected estimated correlation coefficients; *r* = uncorrected estimated correlation coefficient; ρ = estimated correlation coefficient corrected for attenuation; SE_{ρ} = standard error of corrected correlation coefficient; LB = lower bound; UB = upper bound; *k* = number of coefficients; *N* = total sample size.^a The moderator placed in the first row is acting as the reference category in the respective analyses.

correlation for absence frequency. Continent ($Q_M(1) = 1.856$; $p = .173$) and country ($Q_M(1) = 0.739$; $p = .390$) had no moderating effects on the correlations, neither did rating type ($Q_M(1) = 0.372$; $p = .542$), contradicting Hypothesis 2 c.

Again, we analysed the continuous moderators of mean age, gender distribution, publication year, and time passed between the measurement points. Results are displayed in Table 8. Similar to the results with task performance, the effects were robust across mean age ($Q_M(1) = 1.113$; $p = .291$), year of publication ($Q_M(1) = 0.193$; $p = .660$) and gender distribution ($Q_M(1) = 0.177$; $p = .674$). The time passed between the two different measurement points regarding the longitudinal correlation had no moderating effect ($Q_M(1) = 0.284$; $p = .594$).

Analysis of publication bias

The Egger test for the funnel plot asymmetry in studies investigating the link between work engagement and performance (see Figure 2) did not indicate asymmetry ($t(177) = 1.654$, $p = .100$), and the trim-and-fill method did not suggest the need to implement further artificial effect sizes to correct for a bias.

Figure 3 shows the funnel plot for studies investigating the engagement-absenteeism relationship. Here, the Egger test indicated funnel plot asymmetry ($t(9) = -2.499$, $p < .05$), but we note that the power of this test is limited when analysing a funnel plot based on a small number of studies (Egger et al., 1997). The trim-and-fill method recommended an additional

Table 6. Analysis of Continuous Moderators on the Relationship between Work Engagement and Task Performance.

| Moderator variable | b_0 | b_1 | 95% CI (b_1) | | $z(b_1)$ | p | k | N |
|--------------------------|-------|-------|------------------|-------|----------|--------|-----|--------|
| | | | LB | UB | | | | |
| Mean Age | .456 | .000 | -.006 | .007 | 0.044 | .965 | 161 | 65,612 |
| Percent female | .489 | -.001 | -.002 | .000 | -1.378 | .168 | 166 | 66,146 |
| Publication year | .483 | .000 | .000 | .000 | -1.492 | .136 | 179 | 70,144 |
| Time passed ^a | .451 | -.024 | -.042 | -.006 | -2.646 | <.01** | 45 | 10,030 |

Notes. 95% CI = 95% Confidence interval of slope; b_0 = intercept of the estimated correlation coefficient; b_1 = slope; LB = lower bound; UB = upper bound; $z(b_1)$ = z statistic of b_1 ; p = probability value for the continuous moderator r (significant p value indicating significant moderation effects); k = number of coefficients; N = total sample size.

^aTime passed refers to the time that has passed between the two different measurement points in longitudinal studies.

implementation of three studies on the right side of the plot to assess a potential bias. When calculating an analysis with the artificially implemented studies, the results showed that the effect might be slightly overestimated, since the reliability-corrected overall effect would be marginally lower, with $\rho = -.122$, 95% CI [-.210; -.032], $SE = .046$, $\tau = .162$, $p < .01$.

Discussion

This study aimed to determine the extent to which work engagement relates to task performance and absenteeism through two comprehensive meta-analyses. We found that work engagement is positively related to task performance with a medium to large effect size, and this effect is moderated by the rater of the employee’s performance, as other-rated performance led to lower effects. The other main finding was that work engagement is negatively related to absenteeism.

Work engagement and task performance

Our first Hypothesis proposed a medium-size effect between work engagement and task performance. Following the convention of Cohen (1988) for effect sizes in the area of psychology, the

obtained effect can be classified as medium to large. However, in line with the reasoning of Bosco et al. (2015), who systematically revised benchmarks for specific research fields in organizational behaviour, the obtained effect size can be categorized as large.

Additionally, upon analysing the heterogeneity of effects between task performance and work engagement across its three facets (vigour, dedication and absorption; first research question), no significant difference emerged between the three facets in their relation to task performance. Yet, compared to numerous studies calculating a general effect between engagement and performance, only few studies analysed effects between engagement’s three facets and performance. Since both the intercorrelations between the facets and their reliabilities can be classified as high (Schaufeli & Bakker, 2004), it can be assumed that their influence on task performance does not differ too much from each other. Some studies have focused only on the vigour and dedication facets of engagement and task performance (Bakker & Demerouti, 2009; Lorente et al., 2014), arguing that these are the core dimensions while absorption is merely a consequence of the first two facets (De Bruin et al., 2013). Our results do not confirm this assumption and suggest that absorption is just as relevant in the context of task

Table 8. Analysis of Continuous Moderators on the Relationship between Work Engagement and Absenteeism.

| Moderator variable | b_0 | b_1 | 95% CI (b_1) | | $z(b_1)$ | p | k | N |
|--------------------------|-------|-------|------------------|------|----------|------|-----|--------|
| | | | LB | UB | | | | |
| Mean Age | -.479 | .008 | -.007 | .024 | 1.055 | .291 | 10 | 4,533 |
| Percent female | -.156 | -.001 | -.005 | .003 | -0.421 | .674 | 10 | 4,533 |
| Publication year | -.170 | -.005 | -.026 | .017 | -0.440 | .660 | 11 | 69,038 |
| Time passed ^a | -.244 | .020 | -.053 | .092 | 0.533 | .594 | 6 | 2,342 |

Notes. 95% CI = 95% Confidence interval of slope; b_0 = intercept of the estimated correlation coefficient; b_1 = slope; LB = lower bound; UB = upper bound; $z(b_1)$ = z statistic of b_1 ; p = probability value for the continuous moderator (significant p value indicating significant moderation effects); k = number of coefficients; N = total sample size.

^aTime passed refers to the time that has passed between the two different measurement points in longitudinal studies.

Table 7. Analysis of Categorical Moderators on the Relationship between Work Engagement and Absenteeism.

| Effects | r | ρ | SE_ρ | 95% CI | | p | 80% CR | | k | N |
|--------------------------|-------|--------|-----------|--------|-------|--------|--------|-------|-----|--------|
| | | | | LB | UB | | LB | UB | | |
| Random effects | | | | | | | | | | |
| Absenteeism type | | | | | | | | | | |
| duration ^a | -.115 | -.123 | .044 | -.207 | -.037 | **<.01 | -.272 | .031 | 8 | 68,255 |
| frequency | -.282 | -.296 | .086 | -.423 | -.158 | *<.05 | -.444 | -.132 | 3 | 783 |
| Random effects | | | | | | | | | | |
| Rating type | | | | | | | | | | |
| self-rated ^a | -.142 | -.152 | .056 | -.258 | -.042 | **<.01 | -.331 | .038 | 7 | 67,686 |
| company records | -.195 | -.207 | .090 | -.343 | -.063 | .542 | -.390 | -.009 | 4 | 1,352 |
| Random effects | | | | | | | | | | |
| Continent | | | | | | | | | | |
| Europe ^a | -.132 | -.141 | .047 | -.230 | -.049 | **<.01 | -.303 | .030 | 8 | 68,417 |
| Other | -.256 | -.269 | .098 | -.369 | -.106 | .173 | -.439 | -.081 | 3 | 621 |
| Random effects | | | | | | | | | | |
| Country | | | | | | | | | | |
| Netherlands ^a | -.113 | -.123 | .072 | -.260 | .018 | .088 | -.310 | .072 | 4 | 2,565 |
| other | -.190 | -.200 | -.091 | -.303 | -.093 | .390 | -.371 | -.015 | 7 | 66,473 |

Notes. 95% CI = 95% Confidence interval of corrected estimated correlation coefficients; 80% CR = 80% credibility interval of corrected estimated correlation coefficients; r = uncorrected estimated correlation coefficient; ρ = estimated correlation coefficient corrected for attenuation; SE_ρ = standard error of corrected correlation coefficient; LB = lower bound; UB = upper bound; k = number of coefficients; N = total sample size.

^aThe moderator placed in the first row is acting as the reference category in the respective analyses.

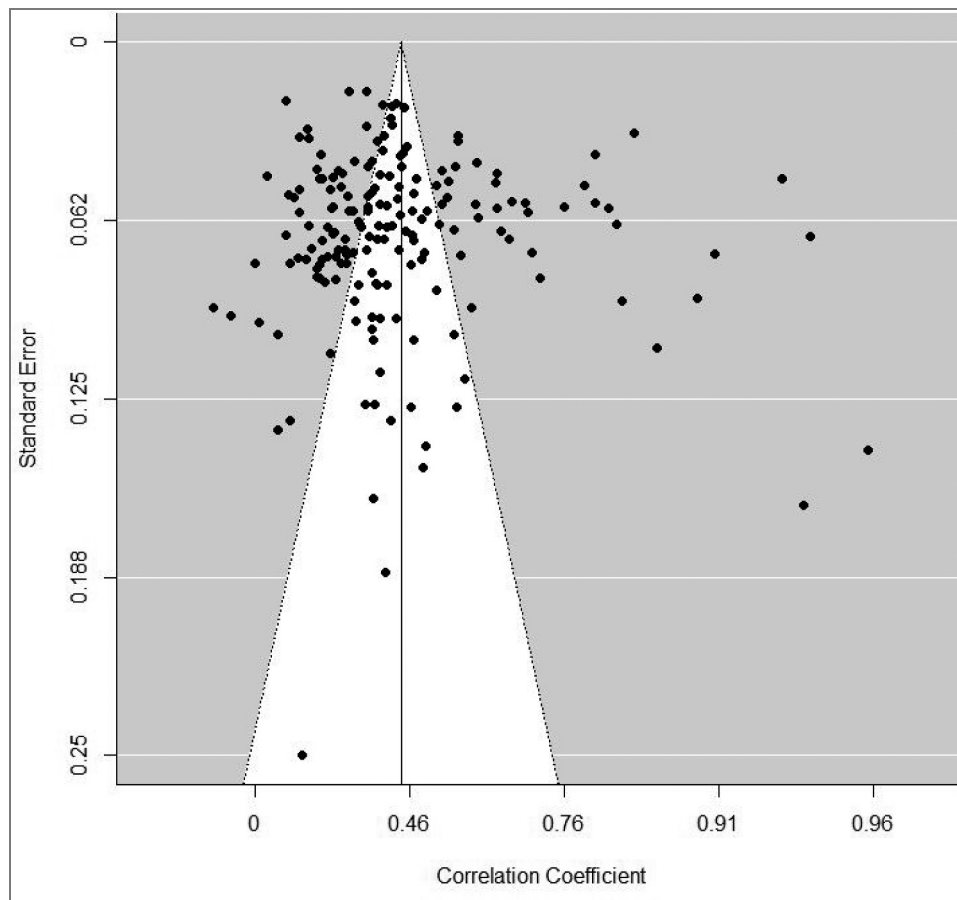


Figure 2. Funnel plot for publication bias in performance studies.

performance as the two assumed core dimensions vigour and dedication.

As assumed, the longitudinal effect found between work engagement and future task performance (Hypothesis 1a) is significant but surpassing the assumption, it can even be classified as medium (Cohen, 1988) to large (Bosco et al., 2015). Although definitive causal conclusions cannot be drawn based on non-experimental longitudinal data, results show that work engagement can predict future task performance. This supports the argumentation of the JD-R model, according to which high work engagement based on a motivational process leads to greater work performance (Bakker & Demerouti, 2017). The more time elapses between the measurement of engagement and task performance, the lower the effect. This may be due to less common method variance that is caused by the shared or similar measurement time (Podsakoff et al., 2003; Rindfleisch et al., 2008) or a reduced true association between both constructs over time (due to reduced causal effects of work engagement on task performance, reduced third-variable influences, or reduced within-person construct stability). However, recent research has also focused on the variability of the relationship between engagement and performance across different situations and time points and has found that this relationship depends, for example, on recovery processes (Bakker et al., 2010), negative affect (Gkorezis et al., 2016) or major life events that occurred between the measurements of engagement and performance (Bakker et al., 2019).

Several moderators were included into the analysis to explain effect size variation across the studies for the association of work engagement and task performance. Self-ratings led to significantly higher correlations than other-ratings (Hypothesis 1b), which is in line with the results from Christian et al. (2011), who also found higher correlations for self-assessed task performance than for other-rated or objective performance. This observation is likely explained by common method variance as well (Podsakoff et al., 2003; Rindfleisch et al., 2008).

Supervisor-rated performance measures yielded the smallest effect compared to self-ratings. This difference is most likely attributable to the influence of common method bias (Podsakoff et al., 2003) on the correlation based on self-ratings which is not operating when engagement and performance are measured by heterogeneous methods (i.e., engagement measured by self-report and performance measured by supervisor-ratings). Since work engagement has always been measured using self-ratings, the resulting correlation between work engagement and self-rated performance was higher than with supervisor-rated task performance, likely due to same-source common method variance. Further, the correlation based on peer-rated performance was also significantly lower than that of self-rated performance, which is in accordance with previous research claiming that peer ratings of performance correlate highly with supervisor ratings but not with self-ratings (Atkins & Wood, 2002). The previous meta-analysis by Christian et al. (2011) did not find a moderating effect of the

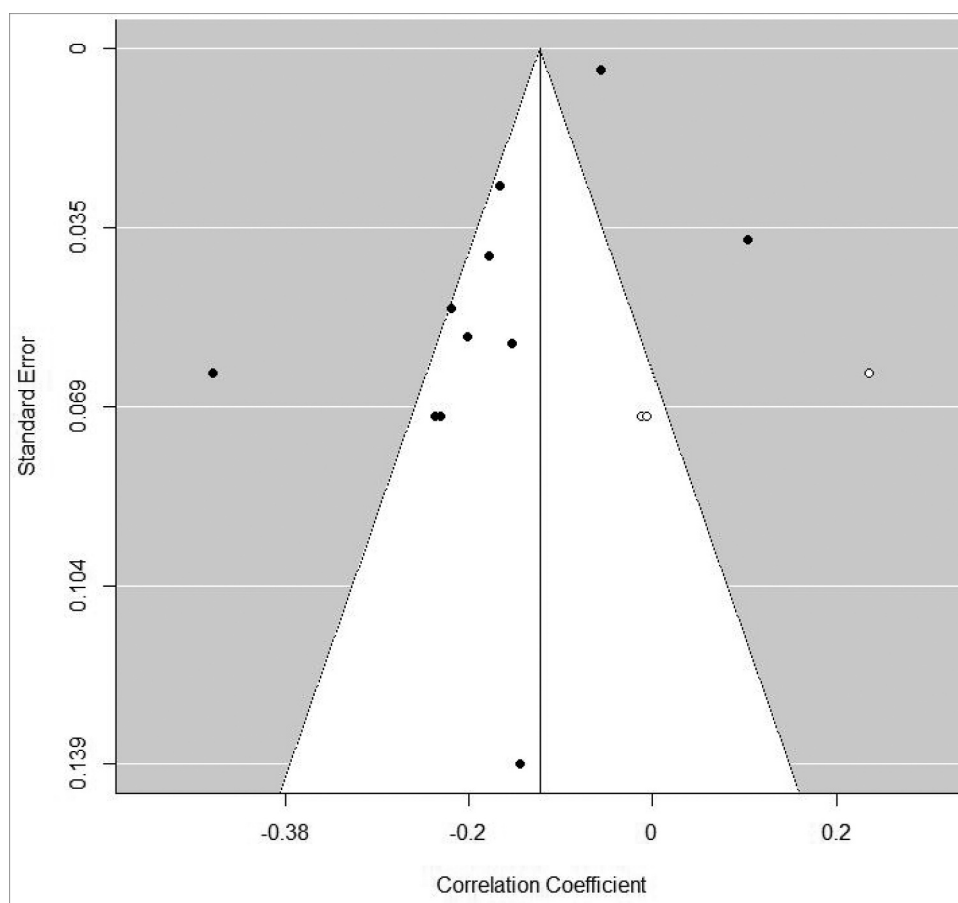


Figure 3. Funnel plot for publication bias in absenteeism studies.

performance rater, which may be due to the small number of studies on other-rated performance measures.

The type of measurement used to assess task performance (subjective vs. objective) was not included in the previous meta-analysis by Christian et al. (2011) as too few primary studies used had used objective measures. We were able to analyse this moderator and did not find a significant effect on the relationship between work engagement and task performance (research question three). Although objective measurements are assumed to be more reliable than subjective measures, since they do harbour systematic bias (Frederick, A & Seven, 1992), subjective measures may be able to offer a more comprehensive view of performance, since objective data often reflects only a small part of an employee's overall task performance (Zulkiffli & Perera, 2011). Yet, although our results show that the type of performance assessment does not influence the strength of the effect, only a few studies in the meta-analysis used objective performance data, thus limiting the test power and generalizability of this finding. When taking a closer look at the indicators used to assess objective performance most of the studies included a form of sales performance (i.e., the amount of money earned; e.g., Xanthopoulou et al., 2009; or products and services that have been sold; i.e.; Carter et al., 2018) supporting the assumption that often only a small area of performance is considered. However, some studies included more comprehensive indicators such as budgetary performance (Macinati et al., 2016) or an objective

performance score including independent quality ratings by experts, customers as well as objective indicators such as total calls per month and total number of problems resolved (Guo et al., 2017) showing that objective measurement methods can also cover many areas of performance. Consequently, some of the objective performance measures covered a similarly broad behavioural spectrum as the subjective ones, which might explain the on average indistinguishable results.

The observed effect was also consistent across the different scales used to assess work engagement, answering our second research question. Consequently, all the scales used here seem appropriate to assess performance-related aspects of work engagement, despite different underlying definitions. This is in line with previous results of Christian et al. (2011). Additional descriptive moderators were the continent and the country in which the study was conducted; as no significant effect was found for any of the analysed categories, the effect seems to be robust across a variety of geographical regions.

The publication year showed no moderating effect, although previous meta-analyses have obtained small effects (Christian et al., 2011; Mackay et al., 2017); this difference might be due to different calculation approaches or different coding and inclusion criteria. No moderating effect of age on the relationship between work engagement and task performance was found. Since the meta-analysis involved a wide age range, the relationship between work engagement and task performance exists regardless of age and its accompanying

professional experience. Previous findings showed no systematic gender differences in work engagement (Schaufeli et al., 2006) and our results indicate that the effect of engagement on task performance did not depend on gender.

Work engagement and absenteeism

Regarding Hypothesis 2, we confirmed a negative link between work engagement and absenteeism in analogy to the first results of Mackay et al. (2017). Following the conventions of Cohen (1988) the effect size would be categorized as rather small. However, when interpreting the effect based on the results of Bosco et al. (2015) regarding the overall correlations between job attitudes and absenteeism the obtained effect size can be classified as large. Thus, employees who are engaged in their work do not call in sick often, whereas less-engaged employees tend to stay home more frequently and for longer.

Regarding the effects of the different facets on absenteeism (research question four), vigour and dedication had a significantly negative relation to absenteeism, whereas the relation between absorption and absenteeism yielded no significance. However, especially the results on absorption have to be interpreted with caution, because despite a considerable total sample size, the number of primary studies these results are based on is very limited. Nevertheless, the stronger evidence for the effects of the two core dimensions vigour and dedication on absence, could be due to the fact that they are more likely to lead to action (Bakker et al., 2012). Combined with this, it could be argued that vigour and dedication might rather be invested in other resources (i.e. motivation, health), in line with the COR theory (Hobfoll & Shirom, 2000). These newly gained resources could then lead to improved attendance at work. The motivational and proactive components of engagement (i.e., vigour and dedication) could lead to a phenomenon called presenteeism, i.e., the willingness of employees to attend work while sick (Miraglia & Johns, 2016) or the “behaviour of working in the state of ill-health” (Ruhle et al., 2020, p. 346). A high level of engagement thus leads to a stronger urge to attend work, despite health conditions that may not allow it, and ultimately results in lower absenteeism.

The longitudinal studies on work engagement and future absenteeism (Hypothesis 2b) did show a significant correlation with a small (Cohen, 1988) to medium (Bosco et al., 2015) effect size. Our results indicate that work engagement might be a predictor of future absenteeism. Schaufeli et al. (2009) who were the first to examine the predictive influence of work engagement on future absenteeism, distinguished between the impact on frequency and duration of absence and found that engagement had an effect primarily on future frequency. Unfortunately, we were not able to examine this result on a meta-analytical level due to the limited data base.

Regarding the distinction between the frequency and the duration of absence in general (Hypothesis 2a), our findings suggest that absence frequency is more negatively associated with engagement. Because a motivational process underlies both work engagement and the frequency of absence (Schaufeli et al., 2009), an un-engaged employee lacks motivation to fulfil his or her work tasks, leading to more frequent

absence. Duration of absence also has a small negative correlation with engagement, which could be because engaged employees are healthier (Halbesleben, 2010), as absence duration is considered to reflect health-related absence (Steel, 2003) even though motivational processes cannot be ruled out. Nevertheless, since the effect is stronger with absence frequency, work engagement seems to more greatly influence the motivational form of absenteeism. This is particularly of interest regarding the results of a recent meta-analysis about the voluntariness distinction between absence frequency and duration which concludes that the frequency of absence is not an expression of voluntary non-attendance (Johns & Al Hajj, 2016). In combination with work engagement our results draw a slightly different pattern supposing two different processes that underlie either the engagement-frequency and the engagement-duration link. Nevertheless, due to the small effect size these results should be interpreted with caution.

Regarding the type of absenteeism assessment (Hypothesis 2c), four studies used company records, while the other five asked employees to report their absences directly. No significant effect between the two types was found, although self-reports of personal data often differ from objective records due to selective recall, memory bias or employees’ social desirability (Johns, 1994).

Neither the continent nor the country significantly moderated the relationship between task performance and absenteeism; but few studies were performed in non-European countries, so this moderator is difficult to interpret. The year of publication showed no moderating effect. This small difference in results compared to the analysis by Mackay et al. (2017) may arise from using different meta-analytical methods and a higher number of more recent studies included in the present analyses.

Age also had no moderating effect on the relationship between work engagement and absenteeism. Thus, the more employees are engaged, the more likely they will attend work, regardless of their age. To date, little is known on the effects of gender on the consequences of work engagement, but previous research pointed out that women reported more absences but also higher engagement scores (Hoxsey, 2010). In contrast, our meta-analysis indicates that gender does not moderate the relationship between work engagement and absenteeism on an aggregated level.

Together, our results are in line with Bosco et al. (2015) who found comparatively small I^2 values for the relationship between a variety of attitudes and absenteeism, suggesting that the proportion of total variation in absenteeism that is based on systematic differences between studies is low and consequently, the identification of moderators is rather difficult.

Limitations

When considering effect sizes from longitudinal studies, we only included correlations that considered engagement from the first data collection point with future task performance or absenteeism. This was chosen since we wanted to focus on the strongest effects in order to be able to clarify the existence of possible causal effects as conclusively as possible. In order to

obtain conclusive certainty about the direction of the effect, correlations between engagement and previous levels of task performance and absenteeism must also be included, though this has been less frequently carried out in the literature. To finally clarify the direction of the effect, more randomized control trials with interventions to increase work engagement would have to be conducted.

This meta-analysis focused on task performance as an important factor of performance, but another major area of performance research involves contextual performance. As contextual performance has been found to be positively associated with work engagement (Demerouti et al., 2015), the analyses by Christian et al. (2011) and Mackay et al. (2017) could also be updated to consider contextual performance.

Only a few studies were available for some of the moderator analyses such as those for the influence of the continent, absence frequency, objectively measured task performance and peer-rated task performance. Thus, these findings should be taken with caution. Further, comparatively few studies were available on the relationship between work engagement and absenteeism, resulting in a low power for the analysis of potential publication bias.

Theoretical implications

This study contributes to the existing literature by corroborating the positive correlation between work engagement and task performance integrating systematically the results of 179 studies from 5 different continents. Controlling for continent and country, this is the first study to show that the relationship between work engagement and task performance is generalizable across cultures. In addition, the contribution of the individual dimensions of engagement to performance is analysed and it is shown that all facets are equally positively related to task performance. Moreover, the contribution of the individual dimensions of engagement to performance is analysed to show that all facets are equally highly related to task performance, thus it can be assumed that absorption plays just as an important role in this context as the two supposed core dimensions of vigour and dedication. The high number of studies examined also allowed for robust moderator analyses on rating types and measurement methods. Indeed, most of the moderators did not alter the correlation between engagement and task performance, but this was not known prior to this study and should be understood as a demonstration of the robustness of the found positive relationship.

This study is also the first to thoroughly analyse the relation between work engagement and absenteeism. Overall, a negative correlation was found. In addition, we controlled for the different absence types, whereby a stronger correlation between engagement and absence frequency could be highlighted. Moreover, when examining the links between absenteeism and the different dimensions of engagement, vigour and dedication were shown to have significantly negative correlation, a link that could not be confirmed for absorption. This suggests that different processes may underlie the three subcomponents of engagement regarding the appearance at work.

Overall, the theoretical propositions based on the JD-R model as mentioned in the introduction could be confirmed: work engagement, through motivation and health-related processes, plays a decisive role in improved task performance and reduced absenteeism.

Implications for future research

To make a conclusion about the causal direction of effects, more experimental or longitudinal investigations are necessary, especially on the relation between work engagement and absenteeism. Thus, to include absenteeism into a well-validated theoretical model, the causality between work engagement and absenteeism should be clarified. To date, both directions are plausible, though high engagement was demonstrated to predict lower future rates of absence frequency (Schaufeli et al., 2009). However, health can also be considered a personal resource and a predictor for engagement; thus, a circular relationship between absenteeism and work engagement should be considered, too.

We found differences in the effect between the individual subcomponents of engagement in relation to absenteeism, yet this effect is based on a rather narrow data base. Further studies on the relationship of vigour, dedication and absorption with absenteeism are imperative to clarify underlying and possibly different mechanisms.

Future research might address alternative performance aspects such as contextual performance, innovative and creative behaviour, personal initiatives, adaptive performance, knowledge sharing or voice behaviour.

Research on interventions to enhance engagement is still quite new. Since some interventions have been found to be effective (Knight et al., 2017), it is important to keep investigating and updating different approaches for enhancing engagement, so that practitioners can be offered well-evaluated measures they can easily implement into their work.

Implications for practice

Work engagement should be considered when trying to enhance a company's performance. While a company's performance may be harmed by employees that are not attending work because of sickness, it may also be compromised by employees who are at work but are not engaged.

Consequently, as human resource departments try to lower absenteeism rates to enhance performance, companies could also invest in enhancing employees' engagement with work. In their systematic review, Knight et al. (2017) identify four different types of interventions that can lead to an increase in work engagement. Based on the JD-R model (Bakker & Demerouti, 2007), there are interventions to increase (a) job resources and (b) personal resources. The rationale for these types of interventions is that work engagement is enhanced by high levels of both personal and job-related resources, especially when job demands are high (Bakker, 2009). Therefore, since demands are often high in the work environment, companies should promote and maintain their employees' job and personal resources. Examples of approaches include offering individual

interventions to improve employee resilience, improving team support, and designing an adequate and comfortable workplace. In addition, interventions to enhance work engagement might include (c) leadership training and (d) health promotion interventions. It is assumed that building managers' knowledge and skills leads to an increase in employees' job resources and thus has an effect on work engagement (Rigotti et al., 2014). All these interventions have an indirect impact on work engagement by improving the conditions for high engagement at work (Knight et al., 2017). Leaders can also directly support followers' work engagement by transformational leadership techniques and contingent reward (Breevaart et al., 2014; Zhu et al., 2009). However, as the number of sufficiently evaluated interventions companies can use is small, researchers have ample opportunity to develop new interventions, and companies are encouraged to cooperate with scientists to ensure that new interventions are appropriate, feasible, accepted and sufficiently evaluated, leading to benefits all around.

Conclusion

As a motivational construct, work engagement has significant positive effects on employees' task performance, across different geographical regions and equally for all subcomponents of engagement. Further, work engagement is negatively related to the duration and frequency of absence. Therefore, companies should consider work engagement as a protective factor that promotes their employees' health and wellbeing and leads to a better performance and lower absence rates.

Notes

1. It is noteworthy that earlier versions of the JD-R model exist that do not include job performance as an integral part; however, the current version we are referring to explicitly incorporates job performance as a main dependent variable
2. To prevent any confusion with the used statistical symbols, we would like to note that we use the following notation throughout this work: r = uncorrected estimated correlation coefficient; ρ = estimated correlation coefficient corrected for attenuation.
3. Lacking a clean test procedure, we compared two meta-analyses with different numbers of included studies using the estimated confidence intervals. This does not allow any statement on the significance of the difference.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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References

- Atkins, P. W. B., & Wood, R. E. (2002). Self- versus others' ratings as predictors of assessment center ratings: validation evidence for 360-degree feedback programs. *Personnel Psychology, 55*(4), 871–904. <https://doi.org/10.1111/j.1744-6570.2002.tb00133.x>
- Bakker, A. B. (2009). Building Engagement in the Workplace. In R. J. Burke & C. L. Cooper (Eds.), *The peak performing organization* (pp. 50–72). Routledge.
- Bakker, A. B. (2011). An Evidence-Based Model of Work Engagement. *Current Directions in Psychological Science, 20*(4), 265–269. <https://doi.org/10.1177/0963721411414534>
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309–328. <https://doi.org/10.1108/02683940710733115>
- Bakker, A. B., & Demerouti, E. (2009). The crossover of work engagement between working couples: A closer look at the role of empathy. *Journal of Managerial Psychology, 24*(3), 220–236. <https://doi.org/10.1108/02683940910939313>
- Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273–285. <https://doi.org/10.1037/ocp0000056>
- Bakker, A. B., Demerouti, E., De Boer, E., & Schaufeli, W. B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior, 62*(2), 341–356. [https://doi.org/10.1016/S0001-8791\(02\)00030-1](https://doi.org/10.1016/S0001-8791(02)00030-1)
- Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management, 43*(1), 83–104. <https://doi.org/10.1002/hrm.20004>
- Bakker, A. B., Du, D., & Derks, D. (2019). Major life events in family life, work engagement, and performance: A test of the work-home resources model. *International Journal of Stress Management, 26*(3), 238–249. <https://doi.org/10.1037/str0000108>
- Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: an emerging concept in occupational health psychology. *Work & Stress, 22*(3), 187–200. <https://doi.org/10.1080/02678370802393649>
- Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: the role of job crafting and work engagement. *Human Relations, 65*(10), 1359–1378. <https://doi.org/10.1177/0018726712453471>
- Bakker, A. B., Van Emmerik, H., Geurts, S. A. E., & Demerouti, E. (2010). *Recovery turns job demands into challenges: A diary study on work engagement and performance* [Unpublished working paper].
- Bakker, A. B., Van Emmerik, H. V., & Euwema, M. C. (2006). Crossover of burnout and engagement in work teams. *Work and Occupations, 33*(4), 464–489. <https://doi.org/10.1177/0730888406291310>
- Bommer, W. H., Johnson, J. L., Rich, G. A., Podsakoff, P. M., & Mackenzie, S. B. (1995). On the interchangeability of objective and subjective measures of employee performance: A meta-analysis. *Personnel Psychology, 48*(3), 587–605. <https://doi.org/10.1111/j.1744-6570.1995.tb01772.x>
- Borman, W. C., & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt & W. C. Borman (Eds.), *Frontiers of industrial and organizational psychology. Personnel selection in organizations* (2nd ed., pp. 71–98). Jossey-Bass.
- Borman, W. C., & Motowidlo, S. J. (1997). Task performance and contextual performance: the meaning for personnel selection research. *Human Performance, 10*(2), 99–109. https://doi.org/10.1207/s15327043hup1002_3
- Bosco, F. A., Aguinis, H., Singh, K., Field, J. G., & Pierce, C. A. (2015). Correlational effect size benchmarks. *Journal of Applied Psychology, 100*(2), 431–449. <https://doi.org/10.1037/a0038047>
- Breevaart, K., Bakker, A. B., Hetland, J., Demerouti, E., Olsen, O. K., & Espevik, R. (2014). Daily transactional and transformational leadership and daily employee engagement. *Journal of Occupational and Organizational Psychology, 87*(1), 138–157. <https://doi.org/10.1111/joop.12041>

- Buil, I., Martínez, E., & Matute, J. (2019). Transformational leadership and employee performance: the role of identification, engagement and proactive personality. *International Journal of Hospitality Management*, 77, 64–75. <https://doi.org/10.1016/j.ijhm.2018.06.014>
- Caesens, G., & Stinglhamber, F. (2014). The relationship between perceived organizational support and work engagement: the role of self-efficacy and its outcomes. *Revue Européenne De Psychologie Appliquée/European Review of Applied Psychology*, 64(5), 259–267. <https://doi.org/10.1016/j.erap.2014.08.002>
- Carter, W. R., Nesbit, P. L., Badham, R. J., Parker, S. K., & Sung, L.-K. (2018). The effects of employee engagement and self-efficacy on job performance: A longitudinal field study. *The International Journal of Human Resource Management*, 29(17), 2483–2502. <https://doi.org/10.1080/09585192.2016.1244096>
- Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology*, 64(1), 89–136. <https://doi.org/10.1111/j.1744-6570.2010.01203.x>
- Christian, M. S., & Slaughter, J. E. (2007). Work engagement: A meta-analytic review and directions for research in an emerging area. *Academy of Management Proceedings*, (2007(1), 1–6. <https://doi.org/10.5465/ambpp.2007.26536346>
- Cochran, W. G. (1954). The combination of estimates from different experiments. *Biometrics*, 10, 101–129. <https://doi.org/10.2307/3001666>
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed. ed.). Routledge. <https://doi.org/10.4324/9780203771587>
- Coo, C., & Salanova, M. (2018). Mindfulness can make you happy-and-productive: A mindfulness controlled trial and its effects on happiness, work engagement and performance. *Journal of Happiness Studies*, 19(6), 1691–1711. <https://doi.org/10.1007/s10902-017-9892-8>
- Darr, W., & Johns, G. (2008). Work strain, health, and absenteeism: A meta-analysis. *Journal of Occupational Health Psychology*, 13(4), 293–318. <https://doi.org/10.1037/a0012639>
- Dawes, J. (1999). The relationship between subjective and objective company performance measures in market orientation research: further empirical evidence. *Marketing Bulletin*, 10, 65–75.
- De Bruin, D. P., Hill, C., Henn, C. M., & Muller, K.-P. (2013). Dimensionality of the UWES-17: an item response modelling analysis. *SA Journal of Industrial Psychology*, 39(2), 1–8. <https://doi.org/10.4102/sajip.v39i2.1148>
- Demerouti, E., & Cropanzano, R. (2010). From thought to action: Employee work engagement and job performance. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 147–163). Psychology Press.
- Demerouti, E., Bakker, A. B., & Gevers, J. M. P. (2015). Job crafting and extra-role behavior: the role of work engagement and flourishing. *Journal of Vocational Behavior*, 91, 87–96. <https://doi.org/10.1016/j.jvb.2015.09.001>
- Demerouti, E., Mostert, K., & Bakker, A. B. (2010). Burnout and work engagement: A thorough investigation of the independency of both constructs. *Journal of Occupational Health Psychology*, 15(3), 209–222. <https://doi.org/10.1037/a0019408>
- Duval, S., & Tweedie, R. (2000). Trim and fill: A simple funnel-plot-based method of testing and adjusting for publication bias in meta-analysis. *Biometrics*, 56(2), 455–463. <https://doi.org/10.1111/j.0006-341X.2000.00455.x>
- Egger, M., Davey Smith, G., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *BMJ: British Medical Journal*, 315(7109), 629–634. <https://doi.org/10.1136/bmj.315.7109.629>
- Farooq, F., Zia-ud-Din, M., Iram, B., & Nadeem, M. T. (2018). The effect of employee engagement on quality work task performance with the moderating role of employee relationship. *International Journal of Academic Research in Business and Social Sciences*, 8(8), 252–263. <https://doi.org/10.6007/IJARBS/v8-i8/4467>
- Gkorezis, P., Bellou, V., Xanthopoulou, D., Bakker, A. B., & Tsiftsis, A. (2016). Linking football team performance to fans' work engagement and job performance: Test of a spillover model. *Journal of Occupational and Organizational Psychology*, 89(4), 791–812. <https://doi.org/10.1111/joop.12155>
- Guo, Y., Hongfei, D., Baoguo, X., & Lei, M. (2017). Work engagement and job performance: the moderating role of perceived organizational support. *Anales De Psicología/Annals of Psychology*, 33(3), 708–713. <https://doi.org/10.6018/analesps.33.3.238571>
- Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, 43(6), 495–513. <https://doi.org/10.1016/j.jsp.2005.11.001>
- Hakanen, J. J., Perhoniemi, R., & Toppinen-Tanner, S. (2008). Positive gain spirals at work: from job resources to work engagement, personal initiative and work-unit innovativeness. *Journal of Vocational Behavior*, 73(1), 78–91. <https://doi.org/10.1016/j.jvb.2008.01.003>
- Halbesleben, J. R. B. (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources, and consequences. In A. B. Bakker (Ed.), *Work engagement: A handbook of essential theory and research* (pp. 102–117). Psychology Press.
- Halbesleben, J. R. B., & Wheeler, A. R. (2008). The relative roles of engagement and embeddedness in predicting job performance and intention to leave. *Work & Stress*, 22(3), 242–256. <https://doi.org/10.1080/02678370802383962>
- Harris, M. M., & Schaubroeck, J. (1988). A meta-analysis of self-supervisor, self-peer, and peer-supervisor ratings. *Personnel Psychology*, 41(1), 43–62. <https://doi.org/10.1111/j.1744-6570.1988.tb00631.x>
- Harrison, D. A., & Martocchio, J. J. (1998). Time for absenteeism: A 20-year review of origins, offshoots, and outcomes. *Journal of Management*, 24(3), 305–350. <https://doi.org/10.1177/014920639802400303>
- Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, 87(2), 268–279. <https://doi.org/10.1037//0021-9010.87.2.268>
- Hensing, G., Alexanderson, K., Allebeck, P., & Bjurulf, P. (1998). How to measure sickness absence? Literature review and suggestion of five basic measures. *Scandinavian Journal of Social Medicine*, 26(2), 133–144. <https://doi.org/10.1177/14034948980260020201>
- Higgins, J. P. T., & Thompson, S. G. (2002). Quantifying heterogeneity in a meta-analysis. *Statistics in Medicine*, 21(11), 1539–1558. <https://doi.org/10.1002/sim.1186>
- Hobfoll, S. E., & Shirom, A. (2000). Conservation of Resources Theory: Applications to Stress and Management in the Workplace. In R. T. Golembiewski (Ed.), *Handbook of Organization Behavior* (2nd ed., pp. 57–80). Marcel Dekker
- Hoxsey, D. (2010). Are happy employees healthy employees? researching the effects of employee engagement on absenteeism: effects of employee engagement on absenteeism. *Canadian Public Administration*, 53(4), 551–571. <https://doi.org/10.1111/j.1754-7121.2010.00148.x>
- Hunter, J. E., & Schmidt, F. L. (2004). *Methods of meta-analysis: Correcting error and bias in research findings* (2nd ed). Sage.
- Inamizu, N., & Makishima, M. (2018). Job performance explains work engagement: curvilinear relations between the two. *Annals of Business Administrative Science*, 17(4), 159–169. <https://doi.org/10.7880/abas.0180712a>
- Johns, G. (1994). Absenteeism estimates by employees and managers: divergent perspectives and self-serving perceptions. *Journal of Applied Psychology*, 79(2), 229–239. <https://doi.org/10.1037/0021-9010.79.2.229>
- Johns, G. (1997). Contemporary research on absence from work: correlates, causes and consequences. *International Review of Industrial and Organizational Psychology*, 12, 115–174.
- Johns, G., & Al Hajj, R. (2016). Frequency versus time lost measures of absenteeism: Is the voluntariness distinction an urban legend?: frequency-time lost measures of absenteeism. *Journal of Organizational Behavior*, 37(3), 456–479. <https://doi.org/10.1002/job.2055>
- Johns, G., & Al Hajj, R. (2016). Frequency versus time lost measures of absenteeism: Is the voluntariness distinction an urban legend?: Frequency-time lost measures of absenteeism. *Journal of Organizational Behavior*, 37(3), 456–479. <https://doi.org/10.1002/job.2055>
- Johnson, J. W. (2001). The relative importance of task and contextual performance dimensions to supervisor judgments of overall performance. *Journal of Applied Psychology*, 86(5), 984–996. <https://doi.org/10.1037//0021-9010.86.5.984>
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *The Academy of Management Journal*, 33(4), 692–724. <https://doi.org/10.5465/256287>

- Knight, C., Patterson, M., & Dawson, J. (2017). Building work engagement: A systematic review and meta-analysis investigating the effectiveness of work engagement interventions: effectiveness of work engagement interventions. *Journal of Organizational Behavior*, 38(6), 792–812. <https://doi.org/10.1002/job.2167>
- Kocakulah, M. C., Kelley, A. G., Mitchell, K. M., & Ruggieri, M. P. (2016). Absenteeism problems and costs: causes, effects and cures. *International Business & Economics Research Journal (IBER)*, 15(3), 89–96. <https://doi.org/10.19030/iber.v15i3.9673>
- Konstantopoulos, S. (2011). Fixed effects and variance components estimation in three-level meta-analysis. *Research Synthesis Methods*, 2(1), 61–76. <https://doi.org/10.1002/jrsm.35>
- Kulikowski, K. (2017). Do we all agree on how to measure work engagement? factorial validity of utrecht work engagement scale as a standard measurement tool – A literature review. *International Journal of Occupational Medicine and Environmental Health*, 30(2), 161–175. <https://doi.org/10.13075/ijom.1896.00947>
- Langan, D., Higgins, J. P. T., Jackson, D., Bowden, J., Veroniki, A. A., Kontopantelis, E., Viechtbauer, W., & Simmonds, M. (2019). A comparison of heterogeneity variance estimators in simulated random-effects meta-analyses. *Research Synthesis Methods*, 10(1), 83–98. <https://doi.org/10.1002/jrsm.1316>
- Langelaan, S., Schaufeli, W. B., van Doornen, L. J. P., Bakker, A. B., & van Rhenen, W. (2007). Is burnout related to allostatic load?. *International Journal of Behavioral Medicine*, 14(4), 213–221. <https://doi.org/10.1007/BF03002995>
- LePine, J., & Van Dyne, L. (2001). Voice and cooperative behavior as contrasting forms of contextual performance: evidence of differential relationships with big five personality characteristics and cognitive ability. *The Journal of Applied Psychology*, 86(2), 326–336. <https://doi.org/10.1037/0021-9010.86.2.326>
- Lisbona, A., Palaci, F., Salanova, M., & Frese, M. (2018). The effects of work engagement and self-efficacy on personal initiative and performance. *Psicothema*, 30(1), 89–96. <https://doi.org/10.7334/psicothema2016.245>
- Lorente, L., Salanova, M., Martínez, I. M., & Vera, M. (2014). How personal resources predict work engagement and self-rated performance among construction workers: A social cognitive perspective. *International Journal of Psychology*, 49(3), 200–207. <https://doi.org/10.1002/ijop.12049>
- Maas, C. J. M., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology*, 1(3), 86–92. <https://doi.org/10.1027/1614-2241.1.3.86>
- Macey, W. H., & Schneider, B. (2008). The meaning of employee engagement. *Industrial and Organizational Psychology*, 1(1), 3–30. <https://doi.org/10.1111/j.1754-9434.2007.0002.x>
- Macinati, M. S., Bozzi, S., & Rizzo, M. G. (2016). Budgetary participation and performance: the mediating effects of medical managers' job engagement and self-efficacy. *Health Policy*, 120(9), 1017–1028. <https://doi.org/10.1016/j.healthpol.2016.08.005>
- Mackay, M. M., Allen, J. A., & Landis, R. S. (2017). Investigating the incremental validity of employee engagement in the prediction of employee effectiveness: A meta-analytic path analysis. *Human Resource Management Review*, 27(1), 108–120. <https://doi.org/10.1016/j.hrmr.2016.03.002>
- Maricuțoiu, L. P., Sulea, C., & Iancu, A. (2017). Work engagement or burnout: which comes first? A meta-analysis of longitudinal evidence. *Burnout Research*, 5, 35–43. <https://doi.org/10.1016/j.burn.2017.05.001>
- Maslach, C., & Leiter, M. P. (1997). *The truth about burnout: How organizations cause personal stress and what to do about it*. Jossey-Bass.
- May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of Occupational and Organizational Psychology*, 77(1), 11–37. <https://doi.org/10.1348/096317904322915892>
- Miraglia, M., & Johns, G. (2016). Going to work ill: A meta-analysis of the correlates of presenteeism and a dual-path model. *Journal of Occupational Health Psychology*, 21(3), 261–283. <https://doi.org/10.1037/ocp0000015>
- Miraglia, M., & Johns, G. (2021). The social and relational dynamics of absenteeism from work: A multilevel review and integration. *Academy of Management Annals*, 15(1), 37–67. <https://doi.org/10.5465/annals.2019.0036>
- Motowidlo, S. J., & Kell, H. J. (2012). Job Performance. In *Handbook of Psychology (Second Edition)*. American Cancer Society. <https://doi.org/10.1002/9781118133880.hop212005>
- Muckler, F. A., & Seven, S. A. (1992). Selecting Performance Measures: 'Objective' versus 'Subjective' Measurement. *Human Factors*, 34(4), 441–455. <https://doi.org/10.1177/001872089203400406>
- Nakamura, J., & Csikszentmihalyi, M. (2014). The Concept of Flow. In M. Csikszentmihalyi (Ed.), *Flow and the Foundations of Positive Psychology* (pp. 239–263). Springer Netherlands.
- Ogbonnaya, C., & Valizade, D. (2018). High performance work practices, employee outcomes and organizational performance: A 2-1-2 multilevel mediation analysis. *The International Journal of Human Resource Management*, 29(2), 239–259. <https://doi.org/10.1080/09585192.2016.1146320>
- Ohemeng, F. L. K., Darko, T. O., & Amoako-Asiedu, E. (2019). Employee engagement and task performance in state-owned enterprises in developing countries: the case study of the power sector in Ghana. *Journal of Public Affairs*, Advance Online Publication. <https://doi.org/10.1002/pa.2021>
- Pati, S. P. (2012). Development of a measure of employee engagement. *Indian Journal of Industrial Relations*, 48(1), 94–104.
- Pati, S. P., & Kumar, P. (2015). Work engagement & WORK ALIENATION: Distinct or opposites? *Indian Journal of Industrial Relations*, 51(1), 17–29.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Prins, J. T., Heijden, F. M. M. A., van der, Hoekstra-Weebers, J. E. H. M., Bakker, A. B., Wiel, H. B. M., Van De, Jacobs, B., & Gazendam-Donofrio, S. M. (2009). Burnout, engagement and resident physicians' self-reported errors. *Psychology, Health & Medicine*, 14(6), 654–666. <https://doi.org/10.1080/13548500903311554>
- Pulakos, E. D., Arad, S., Donovan, M. A., & Plamondon, K. E. (2000). Adaptability in the workplace: development of a taxonomy of adaptive performance. *Journal of Applied Psychology*, 85(4), 612–624. <https://doi.org/10.1037/0021-9010.85.4.612>
- R Core Team. (2020). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. <https://www.R-project.org/>
- Reis, D., Arndt, C., Lischetzke, T., & Hoppe, A. (2016). State work engagement and state affect: similar yet distinct concepts. *Journal of Vocational Behavior*, 93, 1–10. <https://doi.org/10.1016/j.jvb.2015.12.004>
- Rich, B. L. (2006). Job Engagement: Construct Validation and Relationships with Job Satisfaction, Job Involvement, and intrinsic motivation [Doctoral Dissertation]. University of Florida
- Rich, B. L., LePine, J. A., & Crawford, E. R. (2010). Job engagement: antecedents and effects on job performance. *Academy of Management Journal*, 53(3), 617–635. <https://doi.org/10.5465/amj.2010.51468988>
- Rigotti, T., Holstad, T., Mohr, G., Stempel, C., Hansen, E., Loeb, C., Isaksson, K., Otto, K., Kinnunen, U., & Perko, K. (2014). *Rewarding and sustainable healthpromoting leadership*. Federal Institute for Occupational Safety and Health.
- Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C. (2008). Cross-sectional versus longitudinal survey research: concepts, findings, and guidelines. *Journal of Marketing Research*, 45(3), 261–279. <https://doi.org/10.1509/jmkr.45.3.261>
- Rongen, A., Robroek, S. J. W., Schaufeli, W., & Burdorf, A. (2014). The contribution of work engagement to self-perceived health, work ability, and sickness absence beyond health behaviors and work-related factors. *Journal of Occupational and Environmental Medicine*, 56(8), 892–897. <https://doi.org/10.1097/JOM.0000000000000196>
- Rosenthal, R. (1979). The 'File Drawer Problem' and tolerance for null results. *Psychological Bulletin*, 86(3), 638–641. <https://doi.org/10.1037/0033-2909.86.3.638>
- Ruhle, S. A., Breitsohl, H., Aboagye, E., Baba, V., Biron, C., Correia Leal, C., Dietz, C., Ferreira, A. I., Gerich, J., Johns, G., Karanika-Murray, M., Lohaus, D., Lökke, A., Lopes, S. L., Martinez, L. F., Miraglia, M., Muschalla, B., Poethke, U., Sarwat, N., & Yang, T. (2020). "To work, or not to work, that is the question" – recent trends and avenues for research on presenteeism. *European Journal of Work and Organizational Psychology*, 29(3), 344–363. <https://doi.org/10.1080/1359432X.2019.1704734>

- Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 21(7), 600–619. <https://doi.org/10.1108/02683940610690169>
- Schaufeli, W. B., & Bakker, A. B. (2003). *Utrecht Work Engagement Scale: Preliminary Manual*. Utrecht University.
- Schaufeli, W. B., & Bakker, A. B. (2004). *Utrecht Work Engagement Scale: Preliminary Manual [Version 1.1]*. Utrecht University.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66(4), 701–716. <https://doi.org/10.1177/0013164405282471>
- Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior*, 30(7), 893–917. <https://doi.org/10.1002/job.595>
- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71–92. <https://doi.org/10.1023/A:1015630930326>
- Schaufeli, W. B., Taris, T. W., & van Rhenen, W. (2008). Workaholism, burnout, and work engagement: three of a kind or three different kinds of employee well-being?. *Applied Psychology*, 57(2), 173–203. <https://doi.org/10.1111/j.1464-0597.2007.00285.x>
- Seppälä, P., Hakanen, J., Mauno, S., Perhoniemi, R., Tolvanen, A., & Schaufeli, W. (2015). Stability and change model of job resources and work engagement: A seven-year three-wave follow-up study. *European Journal of Work and Organizational Psychology*, 24(3), 360–375. <https://doi.org/10.1080/1359432X.2014.910510>
- Shantz, A., & Alfes, K. (2015). Work engagement and voluntary absence: the moderating role of job resources. *European Journal of Work and Organizational Psychology*, 24(4), 530–543. <https://doi.org/10.1080/1359432X.2014.936392>
- Shimmin, C. (2010). *Job demands, job resources, job control and their relationship with burnout and engagement*. [Masters Thesis]. University of the Witwatersrand.
- Shirom, A. (2003). Job-related burnout: A review. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of Occupational Health Psychology*. (pp. 245–264). American Psychological Association. <https://doi.org/10.1037/10474-012>
- Simpson, M. R. (2009). Engagement at work: A review of the literature. *International Journal of Nursing Studies*, 46(7), 1012–1024. <https://doi.org/10.1016/j.ijnurstu.2008.05.003>
- Soane, E., Shantz, A., Alfes, K., Truss, C., Rees, C., & Gatenby, M. (2013). The association of meaningfulness, well-being, and engagement with absenteeism: A moderated mediation model. *Human Resource Management*, 52(3), 441–456. <https://doi.org/10.1002/hrm.21534>
- Soane, E., Truss, C., Alfes, K., Shantz, A., Rees, C., & Gatenby, M. (2012). Development and application of a new measure of employee engagement: the ISA engagement scale. *Human Resource Development International*, 15(5), 529–547. <https://doi.org/10.1080/13678868.2012.726542>
- Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between nonwork and work. *Journal of Applied Psychology*, 88(3), 518–528. <https://doi.org/10.1037/0021-9010.88.3.518>
- Spearman, C. (1904). The proof and measurement of association between two things. *The American Journal of Psychology*, 15(1), 72–101. <https://doi.org/10.2307/1412159>
- Steel, R. P. (2003). Methodological and operational issues in the construction of absence variables. *Human Resource Management Review*, 13(2), 243–251. [https://doi.org/10.1016/S1053-4822\(03\)00015-9](https://doi.org/10.1016/S1053-4822(03)00015-9)
- Ten Brummelhuis, L. L., Bakker, A. B., & Euwema, M. C. (2010). Is family-to-work interference related to co-workers' work outcomes?. *Journal of Vocational Behavior*, 77(3), 461–469. <https://doi.org/10.1016/j.jvb.2010.06.001>
- Tims, M., Bakker, A. B., & Derks, D. (2015). Job crafting and job performance: A longitudinal study. *European Journal of Work and Organizational Psychology*, 24(6), 914–928. <https://doi.org/10.1080/1359432X.2014.969245>
- Viechtbauer, W. (2010). Conducting meta-analyses in R with the metafor package. *Journal of Statistical Software*, 36(3), 3. <https://doi.org/10.18637/jss.v036.i03>
- Viswesvaran, C. (2001). Assessment of Individual Job Performance: A review of the Past Century and a Look Ahead. In D. S. Ones, N. Anderson, H. K. Sinangil, & C. Viswesvaran (Eds.), *The SAGE Handbook of Industrial, Work & Organizational Psychology: V1: Personnel Psychology and Employee Performance* (2 Revised edition, pp. 110–126). SAGE Publications Ltd.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior*, 74(3), 235–244. <https://doi.org/10.1016/j.jvb.2008.11.003>
- Zahrah, N., Norasyikin Binti Abdul Hamid, S., Huda Binti Abdul Rani, S., & Akmal Binti Mustafa Kamil, B. (2017). The mediating effect of work engagement on the relationship between Islamic Religiosity and job performance. *Global Business and Management Research*, 9(1), 271–280.
- Zhu, W., Avolio, B. J., & Walumbwa, F. O. (2009). Moderating role of follower characteristics with transformational leadership and follower work engagement. *Group & Organization Management*, 34(5), 590–619. <https://doi.org/10.1177/1059601108331242>
- Zulkiffli, S. N. A., & Perera, N. (2011). A literature analysis on business performance for SMEs: subjective or objective measures?. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1867874>

Additional Literature

- *Agušaj, B. (2018). Impact of time congruity on Work Engagement and Job Performance. *An Enterprise Odyssey: Managing Change to Achieve Quality Development*. 9th international Conference "An Enterprise Odyssey: Managing Change to Achieve Quality Development", Zagreb, Croatia.
- *Alessandri, G., Borgogni, L., Schaufeli, W. B., Caprara, G. V., & Consiglio, C. (2015). From Positive Orientation to Job performance: The Role of Work Engagement and Self-efficacy Beliefs. *Journal of Happiness Studies*, 16(3), 767–788. <https://doi.org/10.1007/1090.2014.95334>
- *Alfes, K., Shantz, A., & Alahakone, R. (2016). Testing additive versus interactive effects of person-organization fit and organizational trust on engagement and performance. *Personnel Review*, 45(6), 1323–1339. <https://doi.org/10.1108/PRO220150029>
- *Alfes, K., Truss, C., Soane, E. C., Rees, C., & Gatenby, M. (2013). The Relationship Between Line Manager Behaviour, Perceived HRM Practices, and Individual Performance: Examining the Mediating Role of Engagement: Line Managers, HRM Practices, and Their Relationship with Engagement and Individual Performance. *Human Resource Management*, 52(6), 839–859. <https://doi.org/10.1002/hrm21512>
- *Ali, M., & Lodhi, S. A. (2018). Examining the Impact of Managerial Coaching on Employee Job Performance: Mediating Role of Work Engagement, Leader-Member-Exchange Quality, Job Satisfaction, and Turnover Intentions. *Pakistan Journal of Commerce and Social Sciences*, 12(1), 31.
- *Arikan, S., & Çankır, B. (2019). Examining Work Engagement and Job Satisfaction Variables in their Relations with Job Performance and Intention to Quit. *Journal of Business Research - Turk*, 11(2), 1133–1150. <https://doi.org/10.20491/isarder.2019.661>
- *Aryee, S., Walumbwa, F. O., Zhou, Q., & Hartnell, C. A. (2012). Transformational Leadership, Innovative Behaviour, and Task Performance: Test of Mediation and Moderation Processes. *Human Performance*, 25(1), 1–25. <https://doi.org/10.1080/08959285.2011.631648>
- *Austin, S., Fernet, C., Trépanier, S.-G., & Lavoie-Tremblay, M. (2020). Fatigue in new registered nurses: A 12-month cross-lagged analysis of its association with work motivation, engagement, sickness absence and turnover intention. *Journal of Nursing Management*, 28(3), 606–614. <https://doi.org/10.1111/jonm.12962>
- *Bakker, A. B., Demerouti, E., & ten Brummelhuis, L. L. (2012). Work engagement, performance, and active learning: The role of conscientiousness. *Journal of Vocational Behaviour*, 80(2), 555–564. <https://doi.org/10.1016/j.jvb.2011.08.008>

- *Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations*, 65(10), 1359–1378. <https://doi.org/10.1177/0018726712453471>
- *Bal, P. M., & De Lange, A. H. (2015). From flexibility human resource management to employee engagement and perceived job performance across the lifespan: A multisample study. *Journal of Occupational and Organizational Psychology*, 88(1), 126–154. <https://doi.org/10.1111/joop.12082>
- *Balducci, C., Fraccaroli, F., & Schaufeli, W. B. (2010). Psychometric Properties of the Italian Version of the Utrecht Work Engagement Scale (UWES-9): A Cross-Cultural Analysis. *European Journal of Psychological Assessment*, 26(2), 143–149. <https://doi.org/10.1027/1015-5759/a000020>
- *Bao, Y., Liao, S., Liao, J., Zhang, Y., Deng, C., & Guo, Z. (2019). A Study of the Mechanism of the Congruence of Leader–Follower Power Distance Orientation on Employees’ Task Performance. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.00615>
- *Barbieri, B., Dal Corso, L., Di Sipio, A. M., De Carlo, A., & Benevene, P. (2016). Small opportunities are often the beginning of great enterprises: The role of work engagement in support of people through the recovery process and in preventing relapse in drug and alcohol abuse. *Work*, 55(2), 373–383. <https://doi.org/10.3233/WOR-162411>
- *Basit, A. A. (2019). Examining how respectful engagement affects task performance and affective organizational commitment: The role of job engagement. *Personnel Review*, 48(3), 644–658. <https://doi.org/10.1108/PR-02-2018-0050>
- *Bayona, J. A., Caballer, A., & Peiró, J. M. (2020). The Relationship between Knowledge Characteristics’ Fit and Job Satisfaction and Job Performance: The Mediating Role of Work Engagement. *Sustainability*, 12(6), 2336. <https://doi.org/10.3390/su12062336>
- *Beck, J. W., & Shen, W. (2018). The Effects of US Presidential Elections on Work Engagement and Job Performance: Election Effects on Engagement and Performance. *Applied Psychology*, 68(3), 547–576. <https://doi.org/10.1111/apps.12167>
- *Birkeland, I. K., & Buch, R. (2015). The dualistic model of passion for work: Discriminate and predictive validity with work engagement and workaholism. *Motivation and Emotion*, 39(3), 392–408. <https://doi.org/10.1007/s11031-014-9462-x>
- *Bothma, F. C., & Roodt, G. (2012). Work-based identity and work engagement as potential antecedents of task performance and turnover intention: Unravelling a complex relationship. *SA Journal of Industrial Psychology*, 38(1), 1–17. <https://doi.org/10.4102/sajip.v38i1.893>
- *Breevaart, K., Bakker, A. B., Demerouti, E., & Derks, D. (2016). Who takes the lead? A multi-source diary study on leadership, work engagement, and job performance: Weekly Leadership. *Journal of Organizational Behaviour*, 37(3), 309–325. <https://doi.org/10.1002/job.2041>
- *Breevaart, K., Bakker, A. B., Demerouti, E., Sleebos, D. M., & Maduro, V. (2014). Uncovering the Underlying Relationship Between Transformational Leaders and Followers’ Task Performance. *Journal of Personnel Psychology*, 13(4), 194–203. <https://doi.org/10.1027/1866-5888/a000118>
- *Breevaart, K., Bakker, A. B., Demerouti, E., & van den Heuvel, M. (2015). Leader-member exchange, work engagement, and job performance. *Journal of Managerial Psychology*, 30(7), 754–770. <https://doi.org/10.1108/JMP-03-2013-0088>
- *Cesário, F., & Chambel, M. J. (2017). Linking Organizational Commitment and Work Engagement to Employee Performance: Linking Organizational Commitment and Work Engagement to Employee Performance. *Knowledge and Process Management*, 24(2), 152–158. <https://doi.org/10.1002/kpm.1542>
- *Chai, D. S. (2016). The Impact of positive psychological capital and perceived support on Work Performance of Korean expatriates: The mediating effects of cross-cultural adjustment and Work Engagement [doctoral dissertation]. A&M University.
- *Chaurasia, S., & Shukla, A. (2014). Psychological Capital, LMX, Employee Engagement & Work Role Performance. *Indian Journal of Industrial Relations*, 50(2), 342–356.
- *Chen, S.-L. (2015). The relationship of leader psychological capital and follower psychological capital, job engagement and job performance: A multilevel mediating perspective. *The International Journal of Human Resource Management*, 26(18), 2349–2365. <https://doi.org/10.1080/09585192.2015.1020443>
- *Chhetri, S. B. (2017). Antecedents and Consequences of Job Engagement: Empirical Study of Bank Employees. *Business Perspectives and Research*, 5, 167–179. <https://doi.org/10.1177/2,278,533,717,692,919>
- *Chong, S., Van Dyne, L., Kim, Y. J., & Oh, J. K. (2020). Drive and Direction: Empathy with Intended Targets Moderates the Proactive Personality–Job Performance Relationship via Work Engagement. *Applied Psychology*, Advance Online Publication. <https://doi.org/10.1111/apps.12240>
- *Chughtai, A. A., & Buckley, F. (2011). Work engagement: Antecedents, the mediating role of learning goal orientation and job performance. *Career Development International*, 16, 684–705. <https://doi.org/10.1108/13,620,431,111,187,290>
- *Chung, N. G., & Angeline, T. (2010). Does work engagement mediate the relationship between job resources and job performance of employees?. *African Journal of Business Management*, 4(9), 1837–1834. <https://doi.org/10.5897/AJBM.9000225>
- *Curran, T. M., & Prottas, D. J. (2017). Role stressors, engagement and work behaviours: A study of higher education professional staff. *Journal of Higher Education Policy and Management*, 39(6), 642–657. <https://doi.org/10.1080/1360080X.2017.1377964>
- *Dalal, R. S., Baysinger, M., Brummel, B. J., & LeBreton, J. M. (2012). The Relative Importance of Employee Engagement, Other Job Attitudes, and Trait Affect as Predictors of Job Performance: Relative Importance of Job Attitudes. *Journal of Applied Social Psychology*, 42, 295–325. <https://doi.org/10.1111/j.1559-1816.2012.01017.x>
- *Dan, C.-I., Roşca, A. C., & Mateizer, A. (2020). Job Crafting and Performance in Firefighters: The Role of Work Meaning and Work Engagement. *Frontiers in Psychology*, 11, 1–12. <https://doi.org/10.3389/fpsyg.2020.00894>
- *Dane, E., & Brummel, B. J. (2014). Examining workplace mindfulness and its relations to job performance and turnover intention. *Human Relations*, 67(1), 105–128. <https://doi.org/10.1177/0018726713487753>
- *de Bloom, J., Kinnunen, U., & Korpela, K. (2015). Recovery Processes During and After Work: Associations With Health, Work Engagement, and Job Performance. *Journal of Occupational and Environmental Medicine*, 57(7), 732–742. <https://doi.org/10.1097/JOM.0000000000000475>
- *Demerouti, E., Bakker, A. B., & Halbesleben, J. R. B. (2015). Productive and counterproductive job crafting: A daily diary study. *Journal of Occupational Health Psychology*, 20(4), 457–469. <https://doi.org/10.1037/a0039002>
- *Dubbelt, L., Demerouti, E., & Rispens, S. (2019). The value of job crafting for work engagement, task performance, and career satisfaction: Longitudinal and quasi-experimental evidence. *European Journal of Work and Organizational Psychology*, 28(3), 300–314. <https://doi.org/10.1080/1359432X.2019.1576632>
- *Dulara, S., & Sen, D. C. (2017). The Role of Job Characteristics, Job Crafting and Work Engagement on Job Performance: A Study on Service Industry. *IOSR Journal Of Humanities And Social Science*, 22(7), 36–42. <https://doi.org/10.9790/0837-2,207,173,642>
- *Fletcher, L. (2016). Training perceptions, engagement, and performance: Comparing work engagement and personal role engagement. *Human Resource Development International*, 19(1), 4–26. <https://doi.org/10.1080/13,678,868.2015.1067855>
- *Franke-Bartholdt, L., Frömmer, D., Wegge, J., & Strobel, A. (2018). Authentische Führung: Entwicklung und Validierung einer modifizierten deutschen Fassung des Authentic Leadership Inventory von. *Zeitschrift für Arbeits- und Organisationspsychologie A&O*, 62(3), 142–160. <https://doi.org/10.1026/0932-4089/a000268>
- *Garden, R., Hu, X., Zhan, Y., & Wei, F. (2018). The Role of Workplace Popularity: Links to Employee Characteristics and Supervisor-Rated Outcomes. *Journal of Leadership & Organizational Studies*, 25(1), 19–29. <https://doi.org/10.1177/1,548,051,817,712,876>
- *Gawke, J. C., Gorgievski, M. J., & Bakker, A. B. (2018). Personal costs and benefits of employee intrapreneurship: Disentangling the employee intrapreneurship, well-being, and job performance relationship. *Journal of Occupational Health Psychology*, 23(4), 508–519. <https://doi.org/10.1037/ocp0000105>

- *Gordon, H. J., Demerouti, E., Le Blanc, P. M., Bakker, A. B., Bipp, T., & Verhagen, M. A. M. T. (2018). Individual job redesign: Job crafting interventions in healthcare. *Journal of Vocational Behaviour, 104*, 98–114. <https://doi.org/10.1016/j.jvb.2017.07.002>
- *Gorgievski, M. J., Bakker, A. B., & Schaufeli, W. B. (2010). Work engagement and workaholism: Comparing the self-employed and salaried employees. *The Journal of Positive Psychology, 5*(1), 83–96. <https://doi.org/10.1080/17439760903509606>
- *Grobelna, A. (2019). Effects of individual and job characteristics on hotel contact employees' work engagement and their performance outcomes: A case study from Poland. *International Journal of Contemporary Hospitality Management, 31*(1), 349–369. <https://doi.org/10.1108/IJCHM-08-2017-0501>
- *Gross, H. P., Thaler, J., & Winter, V. (2019). Integrating Public Service Motivation in the Job-Demands-Resources Model: An Empirical Analysis to Explain Employees' Performance, Absenteeism, and Presenteeism. *International Public Management Journal, 22*(1), 176–206. <https://doi.org/10.1080/10967494.2018.1541829>
- *Guan, X., & Frenkel, S. (2018). How HR practice, work engagement and job crafting influence employee performance. *Chinese Management Studies, 12*(3), 591–607. <https://doi.org/10.1108/CMS-11-2017-0328>
- *Guan, X., & Frenkel, S. (2019). How perceptions of training impact employee performance: Evidence from two Chinese manufacturing firms. *Personnel Review, 48*(1), 163–183. <https://doi.org/10.1108/PR-05-2017-0141>
- *Guo, Yongxing, Kang, H., Shao, B., & Halvorsen, B. (2019). Organizational politics as a blindfold: Employee work engagement is negatively related to supervisor-rated work outcomes when organizational politics is high. *Personnel Review, 48*(3), 784–798. <https://doi.org/10.1108/PR-07-2017-0205>
- *Guo, Yungui, & Zhu, Y. (2019). Psychological detachment and research performance: Work engagement as a mediator. *Social Behaviour and Personality: An International Journal, 47*(10), 1–9. <https://doi.org/10.2224/sbp.8277>
- *Gupta, M., & Shukla, K. (2018). An Empirical Clarification on the Assessment of Engagement at Work. *Advances in Developing Human Resources, 20*, 44–57. <https://doi.org/10.1177/1523422317741692>
- *Halbesleben, J. R. B., Wheeler, A. R., & Shanine, K. K. (2013). The moderating role of attention-deficit/hyperactivity disorder in the work engagement–performance process. *Journal of Occupational Health Psychology, 18*(2), 132–143. <https://doi.org/10.1037/a0031978>
- *Haynie, Jeffrey J., Mossholder, K. W., & Harris, S. G. (2016). Justice and job engagement: The role of senior management trust. *Journal of Organizational Behaviour, 37*(6), 889–910. <https://doi.org/10.1002/job.2082>
- *Haynie, Jeffrey Joseph, Flynn, C. B., & Mauldin, S. (2017). Proactive personality, core self-evaluations, and engagement: The role of negative emotions. *Management Decision, 55*(2), 450–463. <https://doi.org/10.1108/MD-07-2016-0464>
- Hobfoll, S.E., & Shirom, A. (2000). Conservation of resources theory: Applications to stress and management in the workplace. In R. T. Golembiewski (Ed.), *Handbook of organization behaviour* (2nd ed., pp. 57–81). Dekker.
- *Hoxha, S., & CetiN, F. (2020). The effect of psychological needs on task performance with the mediating role of work engagement: A sample from a public organization in Kosovo. *The Journal of Human and Work, 7* (1), 1–11. <https://doi.org/10.18394/jid.686542>
- *Hulshof, I. L., Demerouti, E., & Le, B. P. M. (2020). Day-level job crafting and service-oriented task performance: The mediating role of meaningful work and work engagement. *Career Development International, Advance Online Publication*. <https://doi.org/10.1108/CDI-05-2019-0111>
- *Ismail, H. N., Iqbal, A., & Nasr, L. (2019). Employee engagement and job performance in Lebanon: The mediating role of creativity. *International Journal of Productivity and Performance Management, 68*(3), 506–523. <https://doi.org/10.1108/IJPPM-02-2018-0052>
- *Jackson, L. (2014). The Work Engagement and Job Performance Relationship: Exploring the Mediating Effect of Trait Emotional Intelligence [Master's Thesis]. San José State University.
- *Jawahar, I. M., & Schreurs, B. (2018). Supervisor incivility and how it affects subordinates' performance: A matter of trust. *Personnel Review, 47*(3), 709–726. <https://doi.org/10.1108/PR-01-2017-0022>
- *Jones, J. L. (2015). The Interactive Effects Of Citizenship Pressure And Job Embeddedness On Positive And Negative Outcomes Of Engagement [Doctoral Dissertation]. University of Mississippi.
- *Kane-Frieder, R. E., Hochwarter, W. A., & Ferris, G. R. (2014). Terms of engagement: Political boundaries of work engagement–work outcomes relationships. *Human Relations, 67*(3), 357–382. <https://doi.org/10.1177/0018726713495068>
- *Karatepe, O. M. (2011). Procedural Justice, Work Engagement, and Job Outcomes: Evidence from Nigeria. *Journal of Hospitality Marketing & Management, 20*(8), 855–878. <https://doi.org/10.1080/19368623.2011.577688>
- *Karatepe, O. M. (2012). Job Resources, Work Engagement, and Hotel Employee Outcomes: A Time-Lagged Analysis. *Economic Research-Ekonomska Istraživanja, 25*(3), 644–665. <https://doi.org/10.1080/1331677X.2012.11517527>
- *Karatepe, O. M. (2014). Hope, Work Engagement, and Organizationally Valued Performance Outcomes: An Empirical Study in the Hotel Industry. *Journal of Hospitality Marketing & Management, 23*(6), 678–698. <https://doi.org/10.1080/19368623.2014.855994>
- *Karatepe, O. M. (2015). The effects of family support and work engagement on organizationally valued job outcomes. *Turizam: Međunarodni Znanstveno-Stručni Časopis, 63*(4), 447–464.
- *Karatepe, O. M., & Aga, M. (2016). The effects of organization mission fulfilment and perceived organizational support on job performance: The mediating role of work engagement. *International Journal of Bank Marketing, 34*(3), 368–387. <https://doi.org/10.1108/IJBM-12-2014-0171>
- *Karatepe, O. M., Beirami, E., Bouzari, M., & Safavi, H. P. (2014). Does work engagement mediate the effects of challenge stressors on job outcomes? Evidence from the hotel industry. *International Journal of Hospitality Management, 36*, 14–22. <https://doi.org/10.1016/j.ijhm.2013.08.003>
- *Karatepe, O. M., Karadas, G., Azar, A. K., & Naderiadib, N. (2013). Does Work Engagement Mediate the Effect of Polychronicity on Performance Outcomes? A Study in the Hospitality Industry in Northern Cyprus. *Journal of Human Resources in Hospitality & Tourism, 12*(1), 52–70. <https://doi.org/10.1080/15332845.2013.723266>
- *Karatepe, O. M., & Ngeche, R. N. (2012). Does Job Embeddedness Mediate the Effect of Work Engagement on Job Outcomes? A Study of Hotel Employees in Cameroon. *Journal of Hospitality Marketing & Management, 21*(4), 440–461. <https://doi.org/10.1080/19368623.2012.626730>
- *Karatepe, O. M., Ozturk, A., & Kim, T. T. (2019). The effects of nonwork and personal resources on frontline bank employees' work engagement and critical job outcomes. *International Journal of Bank Marketing, 37*(3), 858–879. <https://doi.org/10.1108/IJBM-05-2018-0133>
- *Karatepe, O. M., Rezapouraghdam, H., & Hassannia, R. (2020). Job insecurity, work engagement and their effects on hotel employees' non-green and non-attendance behaviours. *International Journal of Hospitality Management, 87*, 1–12. <https://doi.org/10.1016/j.ijhm.2020.102472>
- *Kartal, N. (2018). Evaluating the relationship between work engagement, work alienation and work performance of healthcare professionals. *International Journal of Healthcare Management, 11*(3), 251–259. <https://doi.org/10.1080/20479700.2018.1453969>
- *Kašpárková, L., Vaculík, M., Procházka, J., & Schaufeli, W. B. (2018). Why resilient workers perform better: The roles of job satisfaction and work engagement. *Journal of Workplace Behavioural Health, 33*(1), 43–62. <https://doi.org/10.1080/1555240.2018.1441719>
- *Kim, M.-S., & Koo, D.-W. (2017). Linking LMX, engagement, innovative behaviour, and job performance in hotel employees. *International Journal of Contemporary Hospitality Management, 29*(12), 3044–3062. <https://doi.org/10.1108/IJCHM-06-2016-0319>
- *Kim, W., Han, S., & Park, J. (2019). Is the Role of Work Engagement Essential to Employee Performance or "Nice to Have"? *Sustainability, 11*(4), 1050. <https://doi.org/10.3390/su11041050>
- *Kooij, D. T. A. M., Tims, M., & Akkermans, J. (2017). The influence of future time perspective on work engagement and job performance: The role of job crafting. *European Journal of Work and Organizational Psychology, 26* (1), 4–15. <https://doi.org/10.1080/1359432X.2016.1209489>
- *Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., de Vet, H. C. W., & van der Beek, A. J. (2014). Construct Validity of the Individual Work

- Performance Questionnaire. *Journal of Occupational and Environmental Medicine*, 56(3), 331–337. <https://doi.org/10.1097/JOM.000000000000113>
- *Lai, F.-Y., Tang, H.-C., Lu, S.-C., Lee, Y.-C., & Lin, C.-C. (2020). Transformational Leadership and Job Performance: The Mediating Role of Work Engagement. *SAGE Open*, 10(1), 1–11. <https://doi.org/10.1177/2158244,019,899,085>
- *Lathabhavan, R., Balasubramanian, S. A., & Natarajan, T. (2017). A psychometric analysis of the Utrecht Work Engagement Scale in Indian banking sector. *Industrial and Commercial Training*, 49(6), 296–302. <https://doi.org/10.1108/ICT-04-2017-0031>
- *Lazauskaite-Zabielske, J., Urbanaviciute, I., & Rekiasiute Balsiene, R. (2018). From psychosocial working environment to good performance: The role of work engagement. *Baltic Journal of Management*, 13(2), 236–249. <https://doi.org/10.1108/BJM-10-2017-0317>
- *Li, A., Xiong, G., Xiao, C., Wang, X., He, J., & Wang, H. (2019). How leader negative emotional expression influences follower performance? The mediating role of work engagement and the moderating role of internal locus of control. *International Journal of Stress Management*, Advance online publication. <https://doi.org/10.1037/str0000151>
- *Li, S.-L., & Qi, J. (2015). Power Sharing and Task Performance: The Role of Work Engagement and Traditionality. *Social Behaviour and Personality: An International Journal*, 43(5), 767–776. <https://doi.org/10.2224/sbp.2015.43.5.767>
- *Li, X., Sanders, K., & Frenkel, S. (2012). How leader–member exchange, work engagement and HRM consistency explain Chinese luxury hotel employees' job performance. *International Journal of Hospitality Management*, 31(4), 1059–1066. <https://doi.org/10.1016/j.ijhm.2012.01.002>
- *Lin, W., Wang, L., Bamberger, P. A., Zhang, Q., Wang, H., Guo, W., Shi, J., & Zhang, T. (2016). Leading future orientations for current effectiveness: The role of engagement and supervisor coaching in linking future work self-salience to job performance. *Journal of Vocational Behaviour*, 92, 145–156. <https://doi.org/10.1016/j.jvb.2015.12.002>
- *Luu, T. T. (2019). Service-oriented high-performance work systems and service-oriented behaviours in public organizations: The mediating role of work engagement. *Public Management Review*, 21(6), 789–816. <https://doi.org/10.1080/14,719,037.2018.1526314>
- *Medlin, B., & Green, K. W. (2009). Enhancing performance through goal setting, engagement, and optimism. *Industrial Management & Data Systems*, 109(7), 943–956. <https://doi.org/10.1108/02635570910982292>
- *Mehmood, Q., Nawab, S., & Hamstra, M. R. W. (2016). Does Authentic Leadership Predict Employee Work Engagement and In-Role Performance?: Considering the Role of Learning Goal Orientation. *Journal of Personnel Psychology*, 15(3), 139–142. <https://doi.org/10.1027/1866-5888/a000164>
- *Memon, S. B., Soomro, S. B., & Kumar, S. (2018). Assessing the work engagement, work practices and work performance in banks. *Journal of Administrative and Business Studies*, 4(3). <https://doi.org/10.20474/jabs-4.3.5>
- *Metin, U. B., Peeters, M. C. W., & Taris, T. W. (2018). Correlates of procrastination and performance at work: The role of having “good fit”. *Journal of Prevention & Intervention in the Community*, 46(3), 228–244. <https://doi.org/10.1080/10,852,352.2018.1470187>
- *Mitchell, M. (2019). The Impact of an Individual's Bottom-Line Mentality on Task Performance and Organizational Citizenship Behaviours and the Mediating Effect of the Physical, Cognitive, and Emotional Components of Employee Engagement [Ph.D., Oklahoma State University]. <https://search.proquest.com/docview/2,350,307,233/abstract/5ACB2AFD14AC4C97PQ/1>
- *Monica, R. (2019). Factors influencing work engagement and its impact on task performance. *International Journal of Business Excellence*, 17(1), 97–129. <https://doi.org/10.1504/IJBEX.2019.096913>
- *Nasurdin, A. M., Ling, T. C., & Khan, S. N. (2018). Linking Social Support, Work Engagement and Job Performance in Nursing. *International Journal of Business and Society*, 19(2), 363–386.
- *Naz, S. (2019). Role of Work Engagement and Job Performance in an LMX Environment. *Market Forces*, 14(2), 56–77.
- *Ogruk, G., & Anderson, T. (2018). The impact of work engagement and authenticity on employees' job performance and well-being: Non-selfreport measures of in-role and extra-role job performance. *New Zealand Journal of Human Resource Management*, 18(1), 47–64.
- *Olugbade, O. A., & Karatepe, O. M. (2019). Stressors, work engagement and their effects on hotel employee outcomes. *The Service Industries Journal*, 39(3–4), 279–298. <https://doi.org/10.1080/02642069.2018.1520842>
- *Owens, B. P., Baker, W. E., Sumpter, D. M., & Cameron, K. S. (2016). Relational energy at work: Implications for job engagement and job performance. *Journal of Applied Psychology*, 101(1), 35–49. <https://doi.org/10.1037/apl0000032>
- *Ozyilmaz, A. (2020). Hope and human capital enhance job engagement to improve workplace outcomes. *Journal of Occupational and Organizational Psychology*, 93(1), 187–214. <https://doi.org/10.1111/joop.12289>
- *Panthee, B., Shimazu, A., & Kawakami, N. (2014). Validation of Nepalese Version of Utrecht Work Engagement Scale. *Journal of Occupational Health*, 56(6), 421–429. <https://doi.org/10.1539/joh.14-0041-OA>
- *Parke, M. R., Weinhardt, J. M., Brodsky, A., Tangirala, S., & Devoe, S. E. (2018). When daily planning improves employee performance: The importance of planning type, engagement, and interruptions. *The Journal of Applied Psychology*, 103(3), 300–312. <https://doi.org/10.1037/apl0000278>
- *Peláez, M. J., Coe, C., & Salanova, M. (2019). Facilitating Work Engagement and Performance Through Strengths-Based Micro-coaching: A Controlled Trial Study. *Journal of Happiness Studies*, 21, 1265–1284. <https://doi.org/10.1007/s10902-019-00127-5>
- *Peng, J.-C., & Tseng, M.-M. (2019). Antecedent and Consequence of Nurse Engagement. *The Journal of Psychology*, 153(3), 342–359. <https://doi.org/10.1080/00223980.2018.1536639>
- *Qadeer, F., Ahmad, A., Hameed, I., & Mahmood, S. (2016). Linking Passion to Organizational Citizenship Behaviour and Employee Performance: The Mediating Role of Work Engagement. *Pakistan Journal of Commerce and Social Sciences*, 10(2), 316–334.
- *Rai, A., Ghosh, P., Chauhan, R., & Singh, R. (2018). Improving in-role and extra-role performances with rewards and recognition: Does engagement mediate the process?. *Management Research Review*, 41(8), 902–919. <https://doi.org/10.1108/MRR-12-2016-0280>
- *Rathnayake, K., & Zhixia, C. (2018). Bankers' psychological capital and performance: The mediating role of job engagement. *International Journal of Arts and Commerce*, 7(3), 15.
- *Reijseger, G., Peeters, M. C. W., Taris, T. W., & Schaufeli, W. B. (2017). From Motivation to Activation: Why Engaged Workers are Better Performers. *Journal of Business and Psychology*, 32(2), 117–130. <https://doi.org/10.1007/s10869-016-9435-z>
- *Rich, B. L. (2006). Job Engagement: Construct Validation and Relationships with Job Satisfaction, Job Involvement, and intrinsic motivation [Doctoral Dissertation]. University of Florida.
- *Rofcanin, Y., Las Heras, M., & Bakker, A. B. (2017). Family supportive supervisor behaviours and organizational culture: Effects on work engagement and performance. *Journal of Occupational Health Psychology*, 22(2), 207–217. <https://doi.org/10.1037/ocp0000036>
- *Salanova, M., Agut, S., & Peiró, J. M. (2005). Linking Organizational Resources and Work Engagement to Employee Performance and Customer Loyalty: The Mediation of Service Climate. *Journal of Applied Psychology*, 90(6), 1217–1227. <https://doi.org/10.1037/0021-9010.90.6.1217>
- *Schmitt, A., Den Hartog, D. N., & Belschak, F. D. (2016). Transformational leadership and proactive work behaviour: A moderated mediation model including work engagement and job strain. *Journal of Occupational and Organizational Psychology*, 89(3), 588–610. <https://doi.org/10.1111/joop.12143>
- *Shantz, A., Alfes, K., Truss, C., & Soane, E. (2013). The role of employee engagement in the relationship between job design and task performance, citizenship and deviant behaviours. *The International Journal of Human Resource Management*, 24(13), 2608–2627. <https://doi.org/10.1080/09585192.2012.744334>
- *Shin, Y., & Hur, W.-M. (2020). When do job-insecure employees keep performing well? The buffering roles of help and prosocial motivation in the relationship between job insecurity, work engagement, and job performance. *Journal of Business and Psychology*, Advance Online Publication. <https://doi.org/10.1007/s10869-020-09694-4>

- *Shin, Y., Hur, W.-M., & Choi, W.-H. (2020). Co-Worker support as a double-edged sword: A moderated mediation model of job crafting, work engagement, and job performance. *The International Journal of Human Resource Management*, 31(11), 1417–1438. <https://doi.org/10.1080/09585192.2017.1407352>
- *Song, J. H., Chai, D. S., Kim, J., & Bae, S. H. (2018). Job Performance in the Learning Organization: The Mediating Impacts of Self-Efficacy and Work Engagement. *Performance Improvement Quarterly*, 30(4), 249–271. <https://doi.org/10.1002/piq.21251>
- *Suhartanto, D., & Brien, A. (2018). Multidimensional engagement and store performance: The perspective of frontline retail employees. *International Journal of Productivity and Performance Management*, 67(5), 809–824. <https://doi.org/10.1108/IJPPM-03-2017-0065>
- *Tanskanen, J., Mäkelä, L., & Viitala, R. (2019). Linking Managerial Coaching and Leader–Member Exchange on Work Engagement and Performance. *Journal of Happiness Studies*, 20(4), 1217–1240. <https://doi.org/10.1007/s10902-018-9996-9>
- *Thomas, R. (2016). Supervisor’s engagement and organization outcomes: The mediating role of employee engagement on task performance and organizational citizenship behaviour. [Doctoral Dissertation]. University of Texas at Tyler.
- *Thongdee, W., & Wattananonsakul, S. (2016). The Effect of Goal Structure on Job Performance: The Mediating Role of Goal Orientation and Work Engagement. Official Conference Proceedings. The Asian Conference on Psychology and the Behavioural Sciences 2016, Tokyo, Japan.
- *Tims, M., Bakker, A. B., Derks, D., & van Rhenen, W. (2013). Job Crafting at the Team and Individual Level: Implications for Work Engagement and Performance. *Group & Organization Management*, 38(4), 427–454. <https://doi.org/10.1177/1059601113492421>
- *Tisu, L., Lupşa, D., Virgă, D., & Rusu, A. (2020). Personality characteristics, job performance and mental health: The mediating role of work engagement. *Personality and Individual Differences*, 153, Advance Online Publication. <https://doi.org/10.1016/j.paid.2019.109644>
- *van Wingerden, J., Bakker, A. B., & Derks, D. (2017). The longitudinal impact of a job crafting intervention. *European Journal of Work and Organizational Psychology*, 26(1), 107–119. <https://doi.org/10.1080/1359432X.2016.1224233>
- *van Wingerden, J., Derks, D., & Bakker, A. B. (2017). The Impact of Personal Resources and Job Crafting Interventions on Work Engagement and Performance. *Human Resource Management*, 56(1), 51–67. <https://doi.org/10.1002/hrm.21758>
- *van Wingerden, J., & Van der Stoep, J. (2018). The motivational potential of meaningful work: Relationships with strengths use, work engagement, and performance. *PLOS ONE*, 13(6), 1–11. <https://doi.org/10.1371/journal.pone.0197599>
- *van Wingerden, J. van, & Poell, R. F. (2017). Employees’ Perceived Opportunities to Craft and In-Role Performance: The Mediating Role of Job Crafting and Work Engagement. *Frontiers in Psychology*, 8. <https://doi.org/10.3389/fpsyg.2017.01876>
- *van Zyl, L. E., van Oort, A., Rispens, S., & Olckers, C. (2019). Work engagement and task performance within a global Dutch ICT-consulting firm: The mediating role of innovative work behaviours. *Current Psychology*. <https://doi.org/10.1007/s12144-019-00339-1>
- *Vogel, R. M., Rodell, J. B., & Lynch, J. W. (2016). Engaged and Productive Misfits: How Job Crafting and Leisure Activity Mitigate the Negative Effects of Value Incongruence. *Academy of Management Journal*, 59(5), 1561–1584. <https://doi.org/10.5465/amj.2014.0850>
- *Vogelgesang, G. R., Leroy, H., & Avolio, B. J. (2013). The mediating effects of leader integrity with transparency in communication and work engagement/performance. *The Leadership Quarterly*, 24(3), 405–413. <https://doi.org/10.1016/j.leaqua.2013.01.004>
- *Wang, H., Lu, C., & Siu, O. (2015). Job insecurity and job performance: The moderating role of organizational justice and the mediating role of work engagement. *Journal of Applied Psychology*, 100(4), 1249–1258. <https://doi.org/10.1037/a0038330>
- *Wang, L., Law, K. S., Zhang, M. J., Li, Y. N., & Liang, Y. (2019). It’s mine! Psychological ownership of one’s job explains positive and negative workplace outcomes of job engagement. *Journal of Applied Psychology*, 104(2), 229–246. <https://doi.org/10.1037/apl0000337>
- *Wei, F., Li, Y., Zhang, Y., & Liu, S. (2018). The Interactive Effect of Authentic Leadership and Leader Competency on Followers’ Job Performance: The Mediating Role of Work Engagement. *Journal of Business Ethics*, 153(3), 763–773. <https://doi.org/10.1007/s10551-016-3379-0>
- *Williamson, J. C. (2011). Engagement and meaningfulness at work: The moderating roles of life satisfaction and gender [Minor dissertation]. University of Johannesburg.
- *Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of Occupational and Organizational Psychology*, 82(1), 183–200. <https://doi.org/10.1348/096317908X285633>
- *Yalabik, Z. Y., Popaitoon, P., Chowne, J. A., & Rayton, B. A. (2013). Work engagement as a mediator between employee attitudes and outcomes. *The International Journal of Human Resource Management*, 24(14), 2799–2823. <https://doi.org/10.1080/09585192.2013.763844>
- *Yin, N. (2018). The influencing outcomes of job engagement: An interpretation from the social exchange theory. *International Journal of Productivity and Performance Management*, 67(5), 873–889. <https://doi.org/10.1108/IJPPM-03-2017-0054>
- *Zheng, Y., Graham, L., Epitropaki, O., & Snape, E. (2020). Service Leadership, Work Engagement, and Service Performance: The Moderating Role of Leader Skills. *Group & Organization Management*, 45(1), 43–74. <https://doi.org/10.1177/1059601119851978>