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I am engaged, I feel good, and I go the extra-mile: Reciprocal relationships between work engagement and consequences

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ABSTRACT

The purpose of the present study was to examine longitudinal relationships between work engagement and mental-health problems, job satisfaction, and extra-role performance (traditionally considered as work-engagement "*outcomes*") in terms of reciprocal causality. On the basis of the Conservation of Resources theory, the Broaden-and-Build theory, and previous studies, we hypothesized that the relationships between work engagement and such variables are reciprocal over time. The study was conducted among 157 schoolteachers, and the time lag was of five months on average. Results of structural-equation-modelling analysis showed that the model with reciprocal relationships exhibited the best fit with the data. Specifically, work engagement at T1 predicted mental-health problems, job satisfaction, and organizational citizenship behaviours at T2. Moreover, T1 mental-health problems were negatively related to T2 work engagement, whereas T1 job satisfaction and T1 organizational-citizenship behaviours were positively related to T2 work engagement. Overall, our findings provide evidence for a reciprocal influence between engagement and these constructs, meaning that none of them can be considered as only a cause or only a consequence.

Me implico, me siento bien y me esfuerzo al máximo: las relaciones recíprocas entre engagement en el trabajo y consecuencias

Palabras clave:
Engagement en el trabajo
Satisfacción laboral
Comportamientos organizacionales de ciudadanía
Salud mental
Estudio longitudinal

RESUMEN

El objetivo del presente estudio fue examinar las relaciones longitudinales entre el engagement en el trabajo, los problemas de salud mental, la satisfacción laboral y el rendimiento extra-laboral (tradicionalmente considerados como "*consecuencias*" del engagement) en términos de causalidad recíproca. Partiendo de la teoría de conservación de los recursos, la teoría de ampliación y construcción de las emociones positivas y los estudios anteriores, nuestra hipótesis fue que las relaciones entre el engagement y esos resultados son recíprocas en el tiempo. El estudio se realizó en una muestra de 157 maestros de escuela y el intervalo de tiempo era de cinco meses. Los resultados de análisis de modelos de ecuaciones estructurales muestran que el modelo de las relaciones recíprocas entre el engagement y los resultados mostraba el mejor ajuste a los datos. Específicamente, el engagement en T1 predijo los problemas de salud mental, la satisfacción laboral y las conductas de ciudadanía organizacional en T2. Por otra parte, los problemas de salud mental en T1 se relacionaban negativamente con el engagement en T2, mientras que la satisfacción laboral en T1 y los comportamientos organizacionales de ciudadanía en T1se relacionaron positivamente con el engagement en T2. En general, nuestros resultados proporcionan evidencia de una influencia recíproca entre engagement en el trabajo y estos constructos, lo que significa que ninguno de ellos puede considerarse sólo como causa o sólo como consecuencia.

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Engagement at work was initially conceptualized by Kahn (1990), who described it as the "*harnessing of organization members* selves to their work roles: in engagement, people employ and express themselves physically, cognitively, emotionally and mentally during role performances" (p. 694). Therefore, engaged workers are physically involved, cognitively vigilant, and emotionally connected while they are executing their job. More recently, Schaufeli, Salanova, González-Romá, and Bakker (2002) defined *work engagement* as a pervasive affective-cognitive state, characterized by three specific factors: *vigor*, *dedication*, and *absorption*. According to these authors, *vigor* entails high levels of energy and mental resilience while working, *dedication* refers to a sense of strong psychological identification and enthusiasm with one's job, and *absorption* is full concentration on and engrossment in one's work.

In line with traditional motivational approaches such as the *Job Characteristics Model* (Hackman & Oldham, 1980) and the *Self-determination Theory* (Ryan & Deci, 2000), work engagement is primarily fostered by those working conditions that help build dedication to and identification with work, i.e., *job resources* (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). On the whole, these approaches might improve the comprehension of the psychological processes underlying work engagement, but they do not adequately take reciprocal causation into account (Salanova, Schaufeli, Xanthopoulou, & Bakker, 2010). In other words, they are not able to explain the dynamic motivational process that connects different kinds of resources with engagement, as well as the development of resources and engagement over time and the different effects that this could have on personal and organizational outcomes.

As posited by Halbesleben (2010) within the engagement literature, to date the study of the consequences of engagement has received the least attention. This is mainly because it is often assumed that engagement is the outcome, and in this sense most of the research was dedicated to understanding its antecedents. However, more recently researchers have begun to explore the relationship between work engagement and important outcomes in more detail.

Therefore the aim of the current study is to investigate the processes underlying work engagement in a longitudinal way, by examining how engagement on the one side and well-being and performance outcomes on the other are related over time with reciprocal causation.

For a better understanding of this process we can use the *Conservation of Resource (COR)* theory (Hobfoll, 1989). The COR theory focuses on resources, broadly defined as those objects, conditions, personal characteristics, and energies that are either centrally valued in their own right, or act as a means to obtain centrally valued objectives (Hobfoll, 2002). The crucial assumptions of COR theory postulate that people: (1) strive to accumulate and protect resources in order to cope with stressful situations and prevent themselves from having to face negative consequences; and (2) invest the resources they have in order to build resources (i.e., the so called *gain spirals*). The assumption of the occurrence of gain spirals between job resources and work engagement entails that they mutually foster each other (Hakanen & Roodt, 2010). When crucial job resources are available, employees' level of engagement may be fostered over time, and this may enhance the likelihood of taking advantage of the current job resources and being able to create new ones. This shows that people tend to invest their extra resources into positive endeavours (Salanova et al., 2010) and that therefore they are likely to experience positive well-being and health and better performances (Bakker, 2009).

Moreover, the statement that work engagement increases job resources is consistent with the *Broaden-and-Build* (B&B) theory (Fredrickson, 1998, 2001). The core assumption of this theory claims that positive emotions *broaden* people's momentary thought-action repertoires and *build* their enduring personal resources. Through this process, positive emotions foster individual well-being and adaptive functioning and promote the further experience of positive emotions, thus generating *upward spirals*. Focusing on the *broadening* part of this theory, it may be argued that positive affective states prompt momentary exploratory forms of behaviour, e.g., creativity, that generate learning opportunities that provide accurate maps of what is beneficial or detrimental in an environment (Fredrickson, 2003). This knowledge, in turn, has a long-term adaptive function, since it helps individuals to deal successfully with future challenges.

Similar to the notion of the gain spiral derived from the COR theory, the framework depicted by the B&B theory makes sense of the empirical evidence by suggesting that work engagement leads to cognitive broadening and fostering of individual resources over time (e.g., Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). Thus, research results have shown that work engagement broadens individuals' coping and action repertoires (e.g., levels of personal initiative) and supports the presence of a reversed-causal relationship (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008).

As suggested by Halbesleben (2011), it is the notion of resource investment that can help us in understanding the consequences of engagement. In fact, researchers have conceptualized engagement as a state whereby an individual has resources that exceed the demands faced on the job (Gorgievski & Hobfoll, 2008). As a consequence, following the rationale of the COR theory, engaged employees are in a better position to invest their resources in a manner that leads to positive outcomes. In support of this position, different researchers have shown that engagement is mainly associated with positive outcomes, such as organizational commitment (Hakanen, Bakker, & Schaufeli, 2006), life satisfaction, psychological well-being (Kanste, 2011), physical health (Shimazu, Schaufeli, Kubota, & Kawakami, 2012), and personal initiative (Hakanen, Perhoniemi et al., 2008). In particular, previous studies have revealed that work engagement is associated with positive outcomes of health, attitudes, and behaviours. To be specific, some researchers found that engaged workers reported better mental health (e.g., Innstrand, Langballe, & Falkum, 2012), more extra-role behaviours (Rich, LePine, & Crawford, 2010), and a higher level of job satisfaction (Brunetto, Teo, Shacklock, & Farr-Wharton, 2012). However, most of these studies have considered just one of these kinds of variables at a time, and they have used cross-sectional designs. Therefore, we decided to simultaneously contemplate mental health, job satisfaction, and extra-role behaviours in the present study, by using a longitudinal design.

These considerations are in line with the basic assumptions of the motivational process of the *Job Demands-Resources* (JD-R) model (Demerouti et al., 2001), which posits that job resources may lead to work engagement, which in turn may elicit further positive outcomes including enhanced performance, organizational commitment, innovativeness, employee retention, and business outcomes (Hakanen & Roodt, 2010; Schaufeli & Bakker, 2004). In particular, by focusing on the first part of the motivational process (i.e., the impact of job resources on work engagement), some empirical results suggest the presence of a reciprocal relationship between job resources and engagement (Xanthopoulou et al., 2009). Nevertheless, because the literature on the longitudinal causal relationships between engagement and outcomes is still lacking, in the present study we have examined the possible reversals and reciprocity between these variables.

According to Halbesleben and Buckley (2004), the engagement literature might be following a pattern similar to the burnout literature, where much of the earlier work was dedicated to understanding its causes, and only at a later stage has the attention been focused on the outcomes. An analysis of the relationship between burnout and consequences revealed that such constructs (e.g., burnout and depression) may be seen to influence each other in the manner of a "vicious cycle" or a "downward spiral" (see for

example Ahola & Hakanen, 2007; Skapinakis, Lewis, & Mavreas, 2004). As the literature considers work engagement as the opposite of burnout, and on the basis of the JD-R model and the COR theory, some scholars have also investigated the potential reversed and reciprocal cross-lagged effects between burnout, engagement, and consequences, but they did not find evidence for the reversed associations (e.g., Hakanen, Schaufeli, & Ahola, 2008; Innstrand et al., 2012). These results suggest that more longitudinal studies testing the possibility of reversed causality between engagement and consequences are needed.

Work engagement and health

The relationship between work engagement and health has been studied from many different perspectives. However, Bakker and Leiter (2010) claimed a need for further future longitudinal research into the relationship between engagement and health, and they also suggested using methods other than self-reporting. Some studies have focused their attention on psychosomatic health complaints, arguing that engaged workers had less back and neck pain (Peterson et al., 2008) and fewer self-reported headaches, cardiovascular problems, and stomach aches (Schaufeli & Bakker, 2004).

Despite there being a great deal of research into this argument, some authors do not agree with the interest of the scientific literature in this relationship. One of them is Maslach (2011), who criticizes the choice to investigate the relationship between work engagement and physical health because the latter is determined by much more than the work. In line with this position, in their longitudinal study, Britt, Castro, and Adler (2005) found that engagement predicted higher well-being and fewer physical symptoms when also controlling for initial levels of well-being and symptoms. Other researchers have shown that engaged employees seem to enjoy better mental and psychosomatic health (see Schaufeli & Salanova, 2008). A positive relationship between work engagement and health was found also among teachers. The study of Hakanen et al. (2006) has indeed found that work engagement was positively related to self-rated health and workability among Finnish teachers.

Of the studies listed above, most are cross-sectional and have identified a positive relationship between work engagement and health. The study by Innstrand et al. (2012) is one of the few to be longitudinal and to suggest a reverse-causation model to investigate the effects of health on work engagement. However, in line with the study of Peterson et al. (2008), where engaged Swedish health-care workers reported lower levels of anxiety and depression, Innstrand et al. (2012) found a normal causal relationship between work engagement and anxiety and depression. In their study, work engagement was thus the antecedent and not the outcome of anxiety and depression. Based on these considerations we hypothesized that:

H1a. Work engagement at T1 has negative cross-lagged effects on mental-health problems at T2.
H1b. Mental-health problems at T1 have negative cross-lagged effects on work engagement at T2.

Work engagement and job satisfaction

Despite some theoretical similarities, work engagement is not comparable with job satisfaction (González-Romá, Schaufeli, Bakker, & Lloret, 2006). While work engagement refers to what the person feels about his or her work (emotional component), job satisfaction concerns the person's assessment of the job (cognitive component) (Salanova & Schaufeli, 2009). As a matter of fact, there is a moderate correlation between job satisfaction and work engagement (Salanova, Schaufeli, Llorens, Peirò, & Grau, 2000). At the same time, work engagement is a positive experience in itself. Individuals who generally enjoy a high level of engagement at work should have more positive experiences (Sonnentag, Mojza, Binnewies, & Scholl, 2008). Positive experiences and pleasant events are known to promote job satisfaction (Weiss, Nicholas, & Daus, 1999).

In order to understand the differences between specific types of work-related subjective well-being (e.g., engagement and job satisfaction), Bakker and Oerlemans (2011) used the circumplex model of affect proposed by Russel and Carroll (1999). On the basis of this framework, affective states arise from two fundamental neurophysiological systems, one related to pleasure and the other to arousal or activation. Each emotion can be understood as a linear combination of these two dimensions. While work engagement is defined by high levels of pleasure and activation, job satisfaction reflects a high level of pleasure and a low level of activation.

Hallberg and Schaufeli (2006) also found that work engagement seems to be generally related to specific outcomes, such as job satisfaction. Brunetto et al. (2012) found similar results by conducting a study among police officers in which the relationship between job satisfaction and work engagement was investigated. In the same lines, Vecina and Chacón (2013) have focused their attention on the clarification of the relationship between engagement and satisfaction in volunteers. The correlation between engagement and satisfaction is equal, according to Salanova et al. (2000), with a coefficient of .53. These results are in line with previous researches, such as Vecina, Chacón, Sueiro, and Barrón (2011), where engagement significantly explained satisfaction among volunteers. Even Simbula (2010), utilizing the JD-R model in a teacher sample, found that engaged employees reported greater job satisfaction and better mental health.

As shown previously in the relationship with mental health, some researchers have highlighted that engagement and outcomes seem to influence each other, which suggests that it is important to think in terms of reciprocity. Based on these considerations, we hypothesized that:

H2a. Work engagement at T1 has positive cross-lagged effects on job satisfaction at T2.
H2b. Job satisfaction at T1 has positive cross-lagged effects on work engagement at T2.

Work engagement and extra-role performance

Recently a large amount of research has focused attention on the relationship between engagement and job performance (see Christian, Garza, & Slaughter, 2011). Macey and Schneider (2008) claimed that work engagement is associated with a "sense of energy" and that this energy, together with enthusiasm, positively correlates with extra-role behaviour, such as Organizational Citizenship Behaviours (OCB), but also with in-role performance (Halbesleben & Wheeler, 2008; Schaufeli, Taris, & Bakker, 2006). Engagement and OCB are related but not equal: the first involves the motivational sphere (Hakanen et al., 2006) while the second is behaviour directed towards individuals (OCBI) or organizations (OCBO) (Williams & Anderson, 1991). Engaged people have better performance and positive behaviour toward organizations (Schaufeli & Salanova, 2008). Dalal, Baysinger, Brummel, and LeBreton (2012) have confirmed previous results by Christian et al. (2011) and Macey and Schneider (2008), and have shown that work engagement was the most important predictor of OCB (25% of explained variance). Babcock-Roberson and Strickland (2010) have also confirmed the positive relationship between engagement and OCB.

According to Bakker and Oerlemans (2011), longitudinal studies are needed to examine the possibility that positive forms of work-related subjective well-being (e.g., work engagement) either precede job performance, follow from job performance, or are reciprocally related to performance.

Lately, Runhaar, Konermann, and Sanders (2013) have shown a positive relationship between engagement and OCBI, including

supportive behaviour towards individual colleagues and between engagement and OCBO, referring to behaviour carried out for the benefit of the entire organization. The authors claim that the mechanisms underlying the relationship between work engagement and OCB's can be explained using *Social Exchange Theory* (SET), according to which reciprocal interactions between people exist and people tend to reciprocate benefits they receive from others (Cropanzano & Mitchell, 2005). Following this logic, it may be possible to assume a mutual relationship between engagement and OCB, as mentioned by Runhaar and colleagues, but not actually tested in their study. Based on these considerations and previous studies, we formulated the following hypotheses:

H3a. Work engagement at T1 has positive cross-lagged effects on organizational-citizenship behaviours at T2.
H3b. Organizational-citizenship behaviours at T1 have positive cross-lagged effects on work engagement at T2.

Method

Study context

The data were collected as part of a research survey on teachers' health and well-being. Even if a large body of research literature shows that teachers are particularly at risk of stress (Santavirta, Solovieva, & Theorell, 2007), at the same time the international literature notes that many teachers are enthusiastic about their work, are engaged in their jobs, and contribute to their organizations in a positive manner (Hakanen et al., 2006). Several studies underlined the importance of considering the well-being of teachers. In fact, increases in well-being are likely to produce increases in learning, the traditional goal of education. Indeed, it is common knowledge that teachers play a key role in students' success. For example, Patrick, Hisley, and Kempler (2000) found that teachers who were perceived as having a dynamic, enthusiastic style tended to have students who were more highly intrinsically motivated regarding the subject matter and more energized in class. In our view this was a good reason to choose teachers as a study group.

Procedure and participants

Participants were approached twice to fill out a questionnaire at the beginning of the school year (Time 1) and after the end of the first term (Time 2). Between Time 1 and Time 2 there was an interval of about five months. We chose to analyze the first term, starting the data collection at the beginnings of the academic year and finishing at the end of the first term. Following Taris and Kompier (2003), the time lag should correspond with the "causal interval" of the process under study. The choice of this time lag is coherent with the Italian academic year, which formally consists of two terms that are organized in almost the same way. Each term comprises a first phase of activities planning, a second phase of execution of teaching activities, and a third phase of student-performance assessment.

At Time 1 (T1) all 394 teachers from five different schools were invited to participate in the study (response rate 70.3%, $N = 277$). The questionnaire was accompanied by a letter that briefly explained the general aim of the research and stressed that the answers would be confidential and anonymous. Five months later, at Time 2 (T2), teachers received the second questionnaire (response rate 40.4%, $N = 159$). The panel group that completed both questionnaires used in the present study consisted of 157 teachers. The T1 and T2 data of two respondents could not be linked for technical reasons, so that 39.8% of the initial sample was finally included in the full panel design.

Preliminary analyses revealed that this final sample did not differ significantly from those who dropped out ($N = 120$) with regard to gender, age, marital status, and type of school. Selective dropout was only observed for job tenure, $\chi^2(4, N = 264) = 15.42$, $p < .01$. In particular, those who also participated at T2 had slightly more teaching experience. Moreover, there were no significant differences between the panel group and the drop-outs with regard to the mean values of work engagement, mental health, organizational citizenship behaviours and job satisfaction, Wilks'$\lambda = .98$, $F(4, 272) = 1.69$, $p = ns$. It can therefore be concluded that selective drop-out is not a serious problem in the present study.

The final sample was comprised of 157 Italian public schoolteachers, working in different types of schools: 31.2% in elementary schools, 68.8% in secondary schools. Of these, 88.5% were women, and 68.3% were married or lived together. Of the teachers, 13% were under the age of 36 years, 52% were between the ages of 36 and 50 years, and 35% were over the age of 50 years. Most participants reported several years of service, as 51.6% had over 20 years of teaching experience (24.5% under 10 years, and 23.9% between 10 and 20 years of experience). On average, participants worked 30.61 hours per week ($SD = 7.85$) at T1, and 32.08 per week ($SD = 6.98$) at T2.

Measures

Work engagement was assessed through the Italian version of the nine-item Utrecht Work-Engagement Scale (UWES, Schaufeli, Bakker, & Salanova, 2006; Italian version: Balducci, Fraccaroli, & Schaufeli, 2010). The items were grouped into three subscales reflecting the three underlying dimensions of work engagement: vigor was measured by three items (e.g., "At my work, I feel strong and vigorous"), dedication was measured by three items (e.g., "I'm enthusiastic about my job"), and absorption was measured by three items (e.g., "I get carried away when I'm working"). All items were scored on a seven-point Likert-type scale ranging from 0 (never) to 6 (always). We followed Schaufeli et al.'s (2006) recommendation and computed an overall engagement score of the UWES, which we used in the analyses.

Mental-health problems were evaluated by the General Health Questionnaire (GHQ)-12 (Goldberg, 1992; Italian version: Fraccaroli & Schadee, 1993). This scale assesses whether participants have recently experienced a particular symptom or behaviour. Each item was rated on a four-point scale. Example items are "Have you recently felt constantly under strain?" (0 = not at all, 1 = no more than usual, 2 = rather more than usual, 3 = much more than usual) and "Have you recently been able to face up to your problems?" (0 = more so than usual, 1 = same as usual, 2 = less so than usual, 3 = much less than usual). Generally speaking, higher scores indicated a more poorly perceived mental health status. We used a modified scoring method, called *Goodchild and Duncan-Jones's* method (CGHQ), as it demonstrated superior construct validity and greater sensitivity with respect to the traditional scoring method of GHQ (for a more detailed explanation see Whaley, Morrison, Payne, Fritschi, & Wall, 2005). On the basis of this method, the scoring of negatively worded items, such as "feeling constantly under strain" is 0, 1, 1, 1 (instead of the traditional 0, 0, 1, 1). The scoring of positive items, such as "been able to face up to your problems" is 0, 0, 1, 1 (as the traditional scoring in GHQ). The final score ranges between 0 and 12.

Job satisfaction was assessed through a single item (Wanous, Reichers, & Hudy, 1997). The statement was "Overall, how satisfied are you with your job?" The item was scored on a five-point scale ranging from 1 (totally unsatisfied) to 5 (totally satisfied). Despite of the use of a single item, Wanous et al. (1997) found that the one-item and the multi-item scale measures of overall job satisfaction were equally robust.

Organizational citizenship behaviour was assessed with four items (e.g., "I help people who have a lot of work to do") on the *Altruism* scale (Perrone & Chiacchierini, 1999), which were slightly adapted to the school context (i.e., where occurred, the term "organization" was replaced by "school"). All items were scored on a seven-point scale ranging from 1 (totally false) to 7 (totally true).

Strategy for analysis

The model including all hypothesized relationships was tested with cross-lagged structural-equation modelling (SEM) as implemented by the AMOS 21.0 software package (Arbuckle, 2012) using maximum-likelihood estimation methods. Following the two-step approach procedure recommended by Anderson and Gerbing (1988), we first tested the measurement models by means of item-level confirmatory factor analyses (CFA) for the two measurement points separately. The CFA provided an acceptable fit to the data at both T1, $\chi^2(288) = 479.73$, CFI = .91, RMSEA = .07 and T2, $\chi^2(288) = 554.22$, CFI = .89, RMSEA = .08. All parameter estimates were significant ($p < .01$) and loaded positively and clearly on their intended latent variable with factor loadings (standardized solution) ranging from .25 to .92 in T1 and from .38 and .96 in T2. Second, we tested the hypotheses by comparing competing models regarding the causal relationships between the variable under study. Owing to the small sample size, and in order to reduce the complexity of our SEM models, we reduced the number of freely estimated parameters by using manifest variables (Jöreskog & Sörbom, 1993). We tested four competing models. The first model was the Stability Model (M1), which included only autocorrelations and synchronous correlations. The autocorrelations were specified as correlations between the corresponding errors of each construct across the two measurement waves. Synchronous correlations were specified as correlations between the errors of the constructs measured at the same time (Pitts, West, & Tein, 1996).

This stability model was compared with three more complex models that were nearest in likelihood to the hypothesized structural model: (1) the Causality Model (M2), which was identical to the stability model, but included additional cross-lagged structural paths from T1 work engagement to T2 mental-health problems, T2 job satisfaction and T2 OCB; (2) the Reversed-Causation Model (M3), which was identical to the stability model, but included additional cross-lagged structural paths from T1 mental-health problems, T1 job satisfaction and T1 OCB to T2 work engagement; and (3) the Reciprocal Model (M4), which included all paths of the causality and reversed-causation model.

The various nested models were compared by means of a Chi-square test (Jöreskog & Sörbom, 1993). Besides the chi-square statistics, we assessed the Goodness-of-Fit Index (GFI) and the Root-Mean Square-Error of Approximation (RMSEA). In our analyses, the Non-Normed Fit Index (NNFI) and the Comparative-Fit Index (CFI) were also used. Marsh, Balla, and Hau (1996) recommended the latter two indices because they are less dependent on sample size compared with the Chi-square statistics and GFI. The NNFI and CFI indices should have values of .90 or higher (Hoyle, 1995). Moreover, values of RMSEA < .08 indicate a reasonable fit between the model and the data (Browne & Cudeck, 1993).

Results

Table 1 presents the means, standard deviations, correlations, and reliabilities (Cronbach's alpha) among the study variables. All significant relationships between the variables were in the expected direction, whereas the test–retest correlations ranged between .57 and .68 ($p < .001$), indicating that participants' perceptions of mental health, OCB, and job satisfaction were quite stable over time. Furthermore, we saw that work engagement correlated highly ($r = .84$) between T1 and T2. This high correlation was also found in previous studies on work engagement (see e.g., Schaufeli et al., 2002). Moreover, as can be seen in Table 1, all scales had satisfactory internal consistency at both measurement times.

Table 2 displays the goodness-of-fit indices of the competing models, as well as the model comparisons. The Chi-square difference test shows that the reciprocal model (M4) provided a better fit to the data than the stability model (M4 vs. M1, $\Delta\chi^2 = 124.33$, $\Delta df = 6$, $p < .001$), the normal-causal model (M4 vs. M2, $\Delta\chi^2 = 78.73$, $\Delta df = 3$, $p < .001$), and the reversed-causal model (M4 vs. M3, $\Delta\chi^2 = 74.49$, $\Delta df = 3$, $p < .001$). In addition, the reciprocal model M4 showed the best fit in terms of GFI, CFI, NNFI, and RMSEA. This suggests that the model including reciprocal relationships among work engagement, mental-health problems, job satisfaction, and OCB explained the underlying structure of the data best.

Table 1
Means (*M*), standard deviations (*SD*), Cronbach's alphas (in parentheses), and correlations among the study variables ($N = 157$)

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11
1. Gender													
(1 = female)	0.88	0.32											
2. Age (0 = until 45 yrs,													
1 = > 45 years)	0.57	0.50	-.15										
3. Type of school (0 = primary, 1 = secondary)	0.68	0.46	-.25**	.27**									
4. Work engagement T1	4.51	1.07	.21**	-.10	-.12	(.94)							
5. Mental-health problems T1	3.85	2.78	.03	.10	-.01	-.48**	(.82)						
6. Job satisfaction T1	3.89	0.81	.00	-.17*	-.09	.61**	-.44**						
7. OCB T1	5.27	1.00	.06	.01	-.05	.24**	-.18*	.14	(.76)				
8. Work engagement T2	4.48	1.05	.19*	-.05	-.09	.84**	-.48**	.56**	.26**	(.93)			
9. Mental-health problems T2	4.09	3.20	-.03	-.00	.00	-.34**	.57**	-.27**	-.12	-.48**	(.86)		
10. Job satisfaction T2	3.90	0.76	-.02	-.18*	-.04	.56**	-.41**	.68**	.05	.61**	-.39**		
11. OCB T2	5.15	1.15	.07	-.05	-.18*	.31**	-.25**	.18*	.64**	.38**	-.24**	.21**	(.85)

Note. T1 = Time 1, T2 = Time 2, OCB = Organizational Citizenship Behaviours.
*$p < .05$, **$p < .01$

Table 2
Goodness-of-fit indices of the nested models (N = 157)

Model	χ^2	*df*	*RMSEA*	*NNFI*	*GFI*	*CFI*	*Model Comparison*	$\Delta\chi^2$	Δdf
M1. Stability model	134.83**	12	.26	.53	.81	.80	-	-	-
M2. Causality model	89.23**	9	.24	.59	.90	.87	M1-M2	45.6**	3
WE T1 → MHP/JS/OCB T2									
M3. Reversed causation model	84.99**	9	.23	.61	.89	.88	M1-M3	49.84**	3
MHP/JS/OCB T1 → WE T2									
M4. Reciprocal Model	10.50	6	.07	.97	.99	.99	M1-M4	124.33**	6
WE T1 → MHP/JS/OCB T2							M2-M4	78.73**	3
MHP/JS/OCB T1 → WE T2							M3-M4	74.49**	3

Note. WE = Work Engagement, MHP = Mental-Health Problems, JS = Job Satisfaction, OCB = Organizational Citizenship Behaviours, T1 = Time 1, T2 = Time 2, RMSEA = Root Mean Square Error of Approximation, NNFI = Non-Normed Fit Index, GFI = Goodness-of-Fit Index, CFI = Comparative Fit Index.
**p < .001

Figure 1 presents all the significant standardized cross-lagged effects observed in the reciprocal model (M4). Specifically, as predicted, it was found that work engagement at T1 predicted mental-health problems, job satisfaction, and OCB at T2. Therefore, hypotheses H1a, H2a, and H3a were fully supported. Moreover, T1 mental-health problems were negatively related to T2 work engagement, whereas T1 job satisfaction and T1 OCB were positively related to T2 work engagement. This means that hypotheses H1b, H2b, and H3b were also supported.

In a next step, in order to control for potential confounders, we conducted additional analysis. Specifically, each control variable (i.e., gender, age, and type of school) was included in the proposed model as a manifest variable simultaneously and was allowed to have effects on all variables in the model at both waves. After controlling for confounding variables, the path coefficients were virtually the same as those of the proposed model, but the model fit decreased, $\chi^2(9) = 32.34$, $p < .001$, GFI = .96, NNFI = .78, CFI = .96, RMSEA = .13). These results indicated that the relationships between the control variables and the model variables were weak and inconsistent. These variables did not affect the structural paths in the model, and therefore they were removed from the final model in Figure 1.

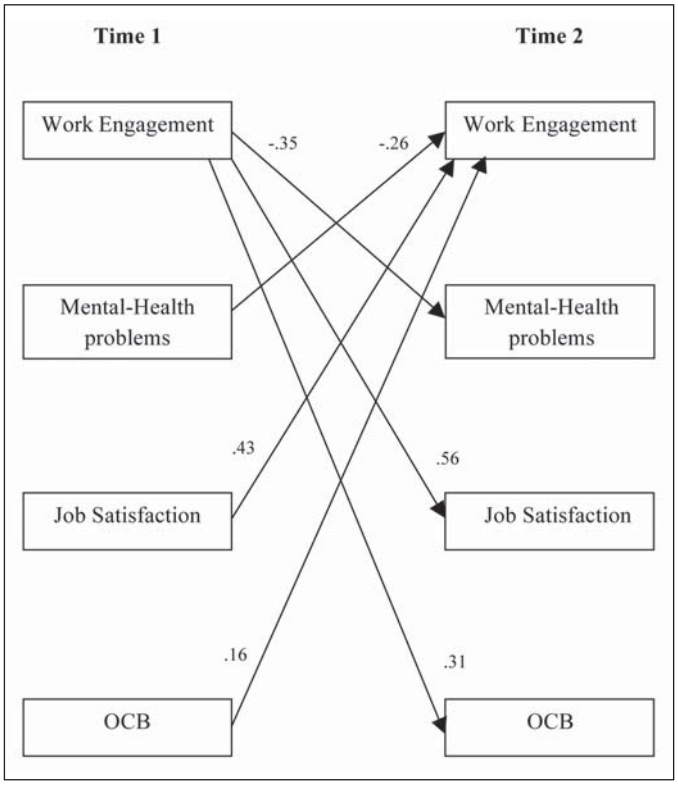

Figure 1. Reciprocal Model (M4).
All standardized coefficients are significant at $p < .001$, excepted for OCB (significant at $p < .01$).
Autocorrelations and synchronous correlations are omitted for reasons of clarity.

Discussion

The main aim of the present study was to evaluate the relationship between work engagement, occupational well-being (mental health and job satisfaction) and extra-role performance. As stated before, to date the study of engagement's consequences is the area that has seen the least attention within the engagement research (Halbesleben, 2010). Moreover, because the literature on the causal relationships between engagement and outcomes is still sparse, we aim to test the direction between these constructs, by using a two-wave panel design, which allowed more rigorous interpretation of causality and reciprocity than cross-sectional designs.

In particular, based on the main assumptions of COR theory, B&B theory, and on the implications of few previous longitudinal studies (e.g., Innstrand et al., 2012), it was hypothesized that the relationships between work engagement and such outcomes are reciprocal. Although the B&B theory is focused on emotions and personal resources, some parallels exist with the relationship between engagement and outcomes. Positive emotions are in fact involved in the motivational process of the JD-R model (Schaufeli & Van Rhenen, 2006). According to B&B theory, positive emotions broaden people's modes of thinking and action, which over time builds their enduring resources, thus triggering a gain cycle toward greater emotional well-being and more resources. Several studies (i.e., Wright & Staw, 1999) showed that positive emotions predict different future improvements (e.g., in social support from supervisors and co-workers, supervisor evaluations, and future pay increases). Hence, individuals who experience positive emotions, over time, become more effective and socially integrated employees who can draw upon larger resource pools (Schaufeli, Bakker, & Van Rhenen, 2009). In a similar vein, the positive emotional state that characterizes engaged employees can trigger a gain cycle toward positive outcomes.

Compared to alternative models, the model including reciprocal relationships received the strongest empirical support. The findings indicated that the relationships among work engagement, well-

being, and contextual performance are best explained when both causal and reversed-causal relationships are taken into account simultaneously (i.e., they are reciprocal). Interestingly, all the paths were significant when potential confounders were also included in the model. Our study underscores the idea that work engagement can be a beneficial experience for employees in terms of the crucial outcomes of mental health, job satisfaction, and extra-role performance. According to the H1a and H2a hypotheses, the results suggest that work engagement is an antecedent of mental health and job satisfaction. This is in line with cross-sectional and longitudinal studies, which found that engaged employees seem to enjoy better mental and psychosomatic health (for a review see Halbesleben, 2010) and greater job satisfaction (Hallberg & Schaufeli, 2006; Saks, 2006). According to the B&B theory, positive emotions, such as happiness, joy, and pride, have health-protecting physiological effects and promote further experience of positive emotions (Fredrickson, 2001). Moreover, our findings go beyond these studies, because they underscore the idea that work engagement is also an outcome of this relationship, supporting hypotheses H1b and H2b. Indeed, to our knowledge, previous studies failed to show this relationship. For example, Innstrand et al. (2012) found that the fit of the causation model was superior to that of the model with reversed effects, showing that work engagement was the antecedent and not the outcome in the relationship with depression and anxiety. In a similar vein, Hakanen and Schaufeli (2012), using a three-wave design among Finnish dentists, showed that both burnout and work engagement predicted, albeit in opposite directions, life satisfaction and depressive symptoms over time, but they did not find any reversed effects.

With regard to the relationship between work engagement and organizational-citizenship behaviour, we found the same results, giving support for both hypotheses H3a and H3b. The Social-Exchange theory (Blau, 1964) or the norm of reciprocity (Gouldner, 1960), may explain this relationship. A person who receives a benefit from another tends to reciprocate and to provide something beneficial in return. Therefore, teachers who receive resources from their organization may have a feeling that they are obligated to repay the school in some form (for example by increasing extra-role behaviour). In turn, when engaged teachers show beneficial behaviour toward their colleagues (i.e., altruism), these behaviours will likely be reciprocated by recognition and beneficial behaviours from others, which leads to teachers becoming even more engaged. This is in line with the suggestion of Runhaar et al. (2013), who however did not formally test the possible reversed effect between OCB and work engagement.

Limitations

This study has some limitations which should be mentioned. First, it only focuses on schoolteachers, which restricts the generalizability of the results to individuals in other occupations. Second, the data was derived entirely from self-report questionnaires, which implies a certain risk that the findings may be based on common-method variance. However, our research was based on a longitudinal design, which reduced the risks of common method bias (Doty & Glick, 1998). Another limitation concerns the stability of the constructs. In line with previous studies (Seppälä et al., 2009) we found that work engagement is a relatively stable phenomenon. The results of a longitudinal analysis reported by Schaufeli and Bakker (2010) with 1057 participants from three countries (Australia, Norway, and the Netherlands) revealed that the stability of the UWES across a one-year time interval ranged between .56 and .75 (M = .65). As suggested by Schaufeli (2012) this stability poses some problems in longitudinal research because not much variance can be explained by other factors, when previous levels of engagement are taken into account. In addition, more recently some scholars have started to analyse the state nature of work engagement, positing that the experience of engagement at work can fluctuate on a daily basis within one person (Sonnentag, 2003). In our view, it is possible that the stability of work engagement might decrease during a longer time lag between the measurements, although Hakanen & Schaufeli (2012) with a seven-year study period, also found that engagement was relatively stable over time. Therefore, it would be important for future research to replicate the present study by also using longer time lag than was applied in the present study (five months) and to give a further contribution to the current debate in the engagement literature between trait and state.

Practical implications

The present study has examined the positive effects of employee engagement on several key job-related consequences. Thus, the results of this study provide evidence that employee engagement is both a practically and theoretically meaningful construct worthy of further research. Our results confirm the importance of promoting work engagement in a way that can both improve well-being and ensure high performance from employees. Building work engagement is an approach to management that is committed to helping employees maintain an energetic involvement with work that supports positive outcomes. As noted by Leiter and Maslach (2010), public and private organisations do not often operate in this way and interventions to reverse these trends have to overcome many obstacles. Our results further reinforce this because the positive spiral that connects the resources to engagement also connects their engagement to the outcome, which in turn has a positive effect on engagement.

In order to promote engagement, the Job Demands-Resources model allocates a foreground role to resources. Research has supported this perspective by finding work engagement to be related to a wide variety of job resources. Our results not only produce confirmation of the effects of engagement on the outcome, as predicted by the JD-R model, but also test the reciprocal relation by opening a further perspective to build engagement. In other words, a reciprocal influence between engagement and positive outcomes. This result could be considered as an extension of the motivational process in which an intervention plan could be successful due to employees having the energy to devote to a project.

In agreement with this position, Halbesleben (2010) suggests using action-research approaches to develop engagement. Action research can have a doubly positive impact on work engagement by addressing both precursors to engagement (job resources development) but also actively involving employees in efforts to improve the organizations. Our results, when the reciprocal relations are confirmed between engagement and results, lead us to think that action research might have a third positive impact on work engagement by addressing well-being and performance outcomes on engagement.

In conclusion, our findings suggest that work engagement is a flourishing construct for organizations, which can be seen to have positive effects on several key job-related consequences. However, some researchers have started to hypothesize that too much engagement could have negative consequences on employees' well-being (Halbesleben, 2011; Sonnentag, Binnewies, & Mojza, 2010). Therefore, as suggested by some researchers (Bakker, Albrecht, & Leiter; 2011; Halbesleben, 2011; Schaufeli, 2012), more research is needed to investigate the full spectrum (i.e., from positive to negative) of engagement's consequences, as well as the possible reversed effects.

Conflicts of interest

The authors of this article declare no conflicts of interest.

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