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Applying the Job Demands-Resources model: A ‘how to’ guide to measuring and tackling work engagement and burnout



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INTRODUCTION

There is a great practical need to assess psychosocial factors at work and improve employee well-being. Evidently, poor working conditions and burned-out employees are associated with, for instance, sickness absence, occupational injuries and accidents, poor work performance, and reduced productivity, whereas the opposite is true for good working conditions and employee engagement. So ultimately, psychosocial factors and employee well-being translate into financial business outcomes. Therefore it is in the company's enlightened self-interest to monitor psychosocial factors at work and employee's well-being on a regular basis, so that timely and targeted measures can be taken to prevent burnout and to increase work engagement. Apart from this intrinsic reason there is also an extrinsic reason for organizations to monitor the workplace, at least in Europe. Following the EU framework Directive 1989/391/EEC on occupational safety and health, all EU member states have issued legislation on the prevention of psychosocial risks at the workplace. The two most relevant provisions of that directive are that: (1) employers should ensure that all workers receive health surveillance that includes psychosocial risks (Article 15) and; (2) employers are held responsible for preventing ill-health at work, and must take appropriate measures to make work healthier (Article 5). Hence, organizations have a legal obligation to monitor psychosocial risk factors and improve employee's health and well-being. Although this legal framework only applies to EU member-states, monitoring risks and improving health and well-being is paramount in other countries as well because of immanent advantages, including financial and business outcomes. But how to achieve that, and what has occupational health psychology to offer?

In this paper I make the case that the Job Demands Resources (JD-R) model can be used as an integrative conceptual framework for monitoring the workplace with the aim to increase work engagement and prevent burnout. The JD-R model is particularly suited for this purpose because: (1) it integrates a positive focus on work engagement with a negative focus on burn-out into a balanced and *comprehensive* approach; (2) it has a *broad scope*, that allows to include *all* relevant job characteristics; (3) it is *flexible*, so that it can be tailored to the needs of any organization; (4) it acts as a common *communication tool* for all stakeholders. In contrast, previous models focused almost exclusively on negative aspects of the job and included a limited, pre-defined set of job characteristics. Because of its comprehensive, broad, flexible and communicative nature the JD-R model not only enjoys great popularity among academic researchers, but it makes the model also quite suitable for practical use in organizations.

The paper starts with a brief description of the JD-R model and then introduces the Energy Compass, an online survey tool that is based on the JD-R model. Next, a case example is presented of an organizational development project that illustrates the practical use of the JD-R model for increasing engagement and preventing burnout.

A BRIEF OVERVIEW OF THE JD-R MODEL

The JD-R model was introduced about fifteen years ago to understand burnout, a chronic state of work related psychological stress that is characterized by exhaustion (i.e., feeling emotionally drained and used up), mental distancing (i.e., cynicism and lack of enthusiasm), and reduced personal efficacy (i.e., doubting about one's

competence and contribution at work). After some years the model was supplemented with work engagement, a positive, fulfilling psychological state that is characterized by vigor (i.e., high levels of energy and resilience), dedication (i.e., experiencing a sense of significance, pride and challenge) and absorption (i.e., being fully concentrated and happily engrossed in one's work).

According to the JD-R model, every job includes demands as well as resources. Demerouti, Bakker, Nachreiner and Schaufeli (2001; p. 501) defined job demands as "*aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs*". Roughly speaking these are the 'bad things' at work that drain energy, such as work overload, conflicts with others, and future job insecurity. In contrast, job resources are the 'good things' that are defined as "*aspects of the job that may do any of the following: (a) be functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth and development*"³. Examples of job resources are support from others (which helps to achieve work goals), job control (which might reduce job demands), and performance feedback (which may enhance learning).

In essence, the JD-R model integrates two basic psychological processes.

First, a *stress process*, which is sparked by excessive job demands and lacking resources may – via burnout – lead to negative outcomes such as sickness absence, poor performance, impeded workability, and low organizational commitment. Essentially, when job demands (the 'bad things') are chronically high and are not compensated by job resources (the 'good things'), employee's energy is progressively drained. This may finally result in a state of mental exhaustion ('burnout'), which, in its turn, may lead to negative outcomes for the individual (e.g., poor health) as well as for the organization (e.g., poor performance). Second, a *motivational process*, which is triggered by abundant job resources and may – via work engagement – lead to positive outcomes such as organizational commitment, intention to stay, extra-role behavior, employee safety, and superior work performance. In fact, job resources (the 'good things') have inherent motivational quality; they spark employee's energy and make them feel engaged, which, in turn leads to better outcomes.

Please note, that from an intervention point of view both high job demands and poor job resources contribute to burnout, whereas only abundant job resources (and not low job demands) contribute to work engagement. Hence, by increasing resources, such as social support, job control and feedback, two birds are hit by one stone: burnout is prevented and engagement is fostered. In contrast, reducing demands, such as work overload, conflicts and job insecurity would only affect burnout but not work engagement. The reason is that in addition to being potentially stressful, job demands may also be challenging to some point so that lowering job demands would result in less challenging jobs and hence lower levels of work engagement. For instance, having to meet a tight deadline may also stimulate performance.

The empirical support for the JD-R model is abundant. For instance, in a review published in 2014 of the JD-R model,

Toon Taris and I showed that twelve studies confirmed the mediating role of burnout in the stress process and of engagement in the motivational process, whereas in the remaining four studies partial instead of full mediation was found for either burnout or engagement. More recently, we reviewed eight longitudinal studies among workers of various countries and found that the predictions of the JD-R model regarding the causal relationships between job characteristics (i.e., job demands and job resources) and employee well-being (i.e., burnout and work engagement) were largely supported by five studies, partly supported by two studies, whereas only one study failed to find any longitudinal relationship.

Although it was acknowledged that job demands and job resources could interact in affecting burnout and work engagement – e.g., co-worker support might buffer the negative effect of work overload on burnout – the evidence for such interactions is rather weak. This led Xanthopoulou, Bakker, Demerouti and Schaufeli (2009; p. 236) to conclude that "*. . . the current evidence on demand \times resource interaction effects shows that even if significant, the practical relevance of such interactions tends to be low*".

Two other extensions of the JD-R model are worth mentioning. First, personal resources have been included in the JD-R model. According to Xanthopoulou and her colleagues (2009; p. 236), these are defined as "*positive self-evaluations that are linked to resiliency and refer to individuals' sense of their ability to control and impact upon their environment successfully*". Examples of personal resources are self-efficacy, optimism, and organization based self-esteem. Although personal resources can be integrated successfully in the JD-R model and their effects may be substantial, it is still unclear which place they should occupy in the model. This seems to depend on the personal resource under study, for instance, stable personality traits (e.g., optimism) are more likely to act as antecedents of job demands and job resources, whereas malleable personal characteristics (e.g., self-efficacy) could act as mediators between job characteristics and well-being.

Second, engaging leadership was added to the JD-R model. Engaging leadership is related to transformational leadership, for instance both include inspiring followers. Yet they also differ because engaging leadership: (1) is firmly rooted in a well-developed psychological theory of motivation (Self-Determination Theory; SDT); (2) specifically focuses on how to increase employee engagement; (3) not only includes an individual but also a social, team dimension. More specifically, engaging leaders: (1) *inspire* their followers (e.g., by enthusing them for their vision and plans); (2) *strengthen* their followers (e.g., by granting them freedom and responsibility); and (3) *connect* their followers (e.g., by encouraging teamwork and collaboration). By inspiring, strengthening and connecting leaders promote the fulfillment of follower's basic psychological needs for autonomy, competence and relatedness, respectively, which according to SDT are inherent in all humans. It appears that engaging leadership has an indirect effect on preventing burnout and increasing engagement by reducing demands and increasing job resources, respectively. For instance, *inspiring* leaders provide their followers with organizational resources (e.g., by emphasizing alignment, value congruence, trust, and justice) and minimize their organizational

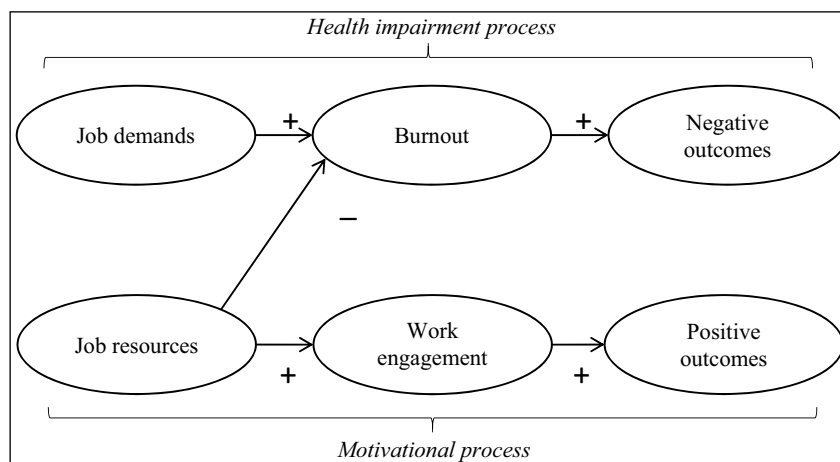


Figure 1 The Job Demands Resources Model

demands (e.g. by circumventing bureaucracy and adequately managing organizational change). Furthermore, *strengthening* leaders provide their followers with work resources (e.g., job control, use of skills, task variety) and development resources (e.g., performance feedback, career perspective), and monitor their qualitative and quantitative job demands (e.g., work overload, emotional demands, and work-home interference). Finally, engaging leaders *connect* their followers by providing them social resources (e.g., good team atmosphere, role clarity). In other words, engaged leaders reduced their followers' job demands, which in its turn, reduced their levels of burnout and they simultaneously increased their followers' job resources, which in its turn, boosted their levels of work engagement.

In conclusion, the JD-R model is a rather straightforward and empirically validated model that specifies relationships between job (and personal) characteristics, leadership, employee well-being, and outcomes. Basically, it states that decreasing job demands, increasing job (and personal) resources and stimulating 'engaged' leadership prevents burnout and increases work engagement. And as a result of this, less negative and more positive outcomes are achieved for both employees and organizations. Since job demands and job resources spark the health impairment and motivational processes, respectively their proper assessment is paramount. Therefore, a specific assessment tool that is based on the JD-R model was developed and will be discussed below.

AN ONLINE JD-R ASSESSMENT TOOL: THE ENERGY COMPASS¹

Numerous comprehensive surveys exist to evaluate psychosocial factors at work, for instance, the Questionnaire on the Experience and Evaluation of Work (QEEW), the Copenhagen Psychosocial Questionnaire (COPSOC), the Nordic Questionnaire for Psychosocial and Social Factors at Work (QPS_{Nordic}), and the Health and Safety Executive's Management

Standards Indicator Tool (HSE MSIT), all of which have been developed in the 1990s in northwestern Europe. Although all questionnaires include various job demands and job resources, they are not based on the JD-R model (see Fig. 1), or of any other job stress model for that matter. Rather than being deduced from an overarching, conceptual framework, they have been developed inductively so that the masses of data that are being produced by these surveys are difficult to interpret.

So far the Energy Compass (EC) is the first instrument that is explicitly based on the JD-R model. Its brief and informative name expresses that the EC might guide individuals as well as organizations in choosing the right direction to find energy at work. In addition to being based on a validated conceptual framework, the EC is also more efficient and more balanced (see Table 1).

This means that compared to the other psychosocial questionnaires, the EC uses shorter scales and suffers less from negativity bias because it includes more positive constructs.

In a review of 9 studies on the JD-R model, Toon Taris and I (2014) identified 30 potential job demands, 31 job resources, 22 outcomes, and 12 personal resources, whereby some concepts overlapped to a large degree (e.g., team harmony and team cohesion). Taking this overlap into account as well

Table 1 Characteristics of Psychosocial Questionnaires

	# Items	# Constructs	Efficiency	Negativity bias
QEEW	203	27	7.7	3.3
COPSOC	135	30	4.5	3.0
QPS _{Nordic}	145	30	4.8	2.5
HSE MSIT	35	7	5.0	2.3
EC	133	58	2.3	1.3

Note: QEEW = Questionnaire on the Experience and Evaluation of Work; COPSOC = the Copenhagen Psychosocial Questionnaire; QPS_{Nordic} = the Nordic Questionnaire for Psychosocial and Social Factors at Work; HSE MSIT = Health and Safety Executive's Management Standards Indicator Tool; EC = Energy Compass; Efficiency = #items/#constructs; Negativity bias = #negative constructs/# positive constructs.

¹ This is a proprietary measure, the copyright is owned by Triple i Human Capital, The Netherlands.

Table 2 Content of the Energy Compass

<p>Job demands (26)</p> <ul style="list-style-type: none"> • <i>Qualitative job demands</i> <ul style="list-style-type: none"> ○ Emotional demands (1) ○ Mental demands (1) ○ Physical demands (1) ○ Work-home conflict (1)* • <i>Quantitative job demands</i> <ul style="list-style-type: none"> ○ Work overload (3) ○ Work underload (1) ○ Pace of change (1)* • <i>Organizational demands</i> <ul style="list-style-type: none"> ○ Negative change (3)* ○ Bureaucracy (3)* ○ Harassment (4) ○ Role conflicts (3) ○ Interpersonal conflicts (4)* 	<p>Engaged leadership (9)*</p> <ul style="list-style-type: none"> • Inspiring (3) • Strengthening (3) • Connecting (3)
<p>Job resources (51)</p> <ul style="list-style-type: none"> • <i>Social resources</i> <ul style="list-style-type: none"> ○ Co-worker support (3) ○ Supervisor support (3) ○ Team atmosphere (2)* ○ Team effectiveness (3)* ○ Role clarity (3) ○ Fulfillment of expectations (2)* ○ Recognition (1)* • <i>Work resources</i> <ul style="list-style-type: none"> ○ Job control (7) ○ Person-job fit (2)* ○ Task variety (2) ○ Participation in decision making (1) ○ Use of skills (1) ○ Availability of tools (1)* • <i>Organizational resources</i> <ul style="list-style-type: none"> ○ Communication (3) ○ Alignment (2)* ○ Trust in leadership (2)* ○ Organizational justice (3) ○ Fair pay (1) ○ Value congruence (1)* • <i>Developmental resources</i> <ul style="list-style-type: none"> ○ Performance feedback (3) ○ Possibilities for learning & development (3) ○ Career perspective (2) 	<p>Personal resources (24)</p> <ul style="list-style-type: none"> • Resilience (3) • Self-efficacy (3) • Optimism (3) • Flexibility (3) • Setting one's own limits (3)* • Proactivity (3) • Goal directedness (3)* • Self-development (3)
	<p>Employee well-being (10)</p> <ul style="list-style-type: none"> • Burnout (3) • Work engagement (3) • Psychological distress (1) • Boredom (1) • Sleep problems (1) • Job satisfaction (1)
	<p>Outcomes (13)</p> <ul style="list-style-type: none"> • <i>Commitment</i> <ul style="list-style-type: none"> ○ Team (1)* ○ Organization (1) ○ Turnover intention (1) • <i>Employability</i> <ul style="list-style-type: none"> ○ Work ability (1) ○ Sickness absence frequency (1) ○ Sickness absence duration (1) • <i>Performance</i> <ul style="list-style-type: none"> ○ In-role performance (3) ○ Extra-role performance (3) ○ Overall performance (1)

as my personal experience regarding the practical relevance of these variables for organizations, 12 job demands, 22 job resources, 9 outcomes and 8 personal resources were selected (see [Table 2](#)). Three job demands were included that were deemed important from a practitioner's point of view but did not appear on the review (i.e., under-load, bureaucracy, and pace of change), as well as four job resources (i.e., team effectiveness, fulfillment of expectations of others, being aligned with the organization, and value congruence between employee and organization), and three personal resources (i.e., setting one's own limits, goal directedness, and self-development). The technical details of the construction of EC are explained in [Appendix A](#).

Immediately after completing the EC respondents receive an automatically generated feedback report in which their scores are compared with those of the average employee. The structure of the report, which can be saved or printed in pdf-format, follows the logic of the JD-R model with separate sections for job demands, job resources, personal resources, well-being, and outcomes. In addition, specific suggestions are given in this personalized feedback report about how to decrease high demands and increase poor resources.

The validity of the EC was investigated by testing the underlying JD-R model. First a factor-analysis of job demands and job resources was carried out from which three types of demands emerged (i.e., qualitative, quantitative, and organizational demands) and four types of resources (i.e., social, work, organizational, and development resources); see [Table 2](#). Next, using a two-stage approach, the factor-scores of demands and resources were used as indicators of the corresponding higher-order constructs. These constructs were included together with burnout, work engagement, outcomes and leadership into a so-called structural equation model. In fact, this model can be seen as an operationalization of the JD-R model. It appeared that the hypothesized structural equation model fitted to the data of the representative sample. In other words, the relationships between the constructs that are included in the EC agree with the propositions of the JD-R model (see [Fig. 1](#)).

In conclusion, the EC consists of a broad set of valid and reliable indicators of job demands, job resources, outcomes, and personal resources that have been identified by previous research and consultancy experience. It is an efficient tool that assesses a broad variety of constructs with relatively few items, thereby balancing a positive and a negative

approach. Reference data are available that allow the classification of employee's scores as 'high', 'average', or 'low' as compared to the working population. So far, only Dutch reference data are available (see [Appendix A](#)); for use in other countries local reference data are recommended. And last but not least, it was shown that the JD-R model serves as an overarching, conceptual framework for the EC. Or put differently, that the EC can be used to assess the JD-R model.

USING THE JD-R MODEL IN ORGANIZATIONS: A CASE EXAMPLE

Below a project is discussed that uses the JD-R model to improve work engagement and prevent burnout in the hospitality industry. Salanova, Agut, and Peiró (2005) found that work engagement is particularly important in the hospitality industry because it is related to service quality and customer loyalty. On the other hand, research carried out by Pienaar and Willemse (2008) shows that workers in the hospitality industry run the risk of burning out because of demanding customers and long and anti-social working hours.

The role of the JD-R model goes beyond the fact that it lies at the core of the EC, which is used to analyze the complexity of the organization's reality and to tease out the most relevant factors for increasing work engagement and preventing burnout. Perhaps even more importantly, the JD-R model plays a crucial role in the communication with all stakeholders that are involved in the project; employees, top management, middle management, line management, HR-officers, and workers council. The model constitutes a 'common language' and acts as a lens through which all stakeholders see the organization and their personal and professional situation.

The project was carried out in one of the largest Dutch hotel chains that operates 22 hotels in the Netherlands and employs 1055 employees. So far, the organization had carried out in-house, annual, mandatory employee satisfaction surveys. Although the response was usually high top management was dissatisfied with for two reasons. First, the quality of the in-house survey was questioned because it lacked a solid scientific foundation. Second, it was suspected that the results of the survey were biased because they were linked via specific targets to hotel manager's financial bonuses. In other words, a perverse incentive could not be excluded. Hence, an independent party was invited to carry out a voluntary, state-of-the-art, scientifically based engagement survey and would suggest improvements to increase work engagement, as the organization aspired to employ 'engaged' rather than merely 'satisfied' employees. It was reasoned by top-management that an engaged workforce would realize the organization's core values of respect, entrepreneurship, passion, style, and customer orientation better than a satisfied workforce. In fact that is a realistic expectation, which is by and large backed up by research and case studies.

[Fig. 2](#) shows the general process model – also called regulative cycle – that is employed in organizational change projects with the JD-R model and which consists of eight steps. Each step will be discussed below and illustrated by the hospitality project.

Step 1: Aim and Project Team

In the case of the hospitality project the main aim of top-management was: how can employee's levels of work engagement be increased? Since according to the JD-R model ([Fig. 1](#)) burnout can be reduced simultaneously, a secondary aim was added: to decrease levels of burnout. So the overall aim of the project was to increase work engagement and prevent burnout. The commitment of the organization to the project was illustrated by the fact that together with a dedicated consultant, a member of the top-management (i.e., the CFO) and the head of the HR-department constituted project team. This also meant that, if necessary, the process could be speeded up because communication lines were short and extra resources (i.e., finances and time) could be readily made available.

The project team drafted a detailed planning that included various milestones, such as delivering reports to the management of the participating hotels. Two months were planned for the preparation phase (steps 1–3), one month for the fieldwork (step 4), two months for data-analyses and reporting (step 5), one month for survey feedback (step 6), and from the 7th month onwards interventions would take place (step 7). Finally, a one-year follow-up measurement with the EC was planned.

Step 2: Customizing the Energy Compass

The EC was tailored to the needs of the organization by the project team. Key persons, such as HR officers, hotel management, supervisors, and work council members were consulted to identify the most relevant job stressors, personal and job resources, and outcomes that should be included in the EC. Since it was important to reduce the length of the survey, four less relevant job demands (mental demands, negative changes, work underload, and harassment) and three job resources (fulfillment of expectation, participation in decision making, and alignment) were eliminated from the EC. Moreover, only two personal resources (proactivity and goal-directedness) and three outcomes (team- and organizational commitment and turnover intention) were included because these were deemed most relevant. Rather than focusing on increasing *personal* resources, the organization opted for increasing *job* resources. And since the main aim was increasing work engagement, only commitment was included as an outcome because it is more closely linked with engagement than either employability or job performance.² The version of the EC that was used in the project included 34 constructs (see [Table 1](#)).

Step 3: Internal Communication Campaign

Before carrying out the survey an internal communication campaign was launched. Its goal was to stimulate employees to fill-out the EC and to be actively involved in the project. The communications not only stressed the importance for the organization, but also the voluntary nature of the survey, and the fact that participating employees would receive a

² Schaufeli (2014).

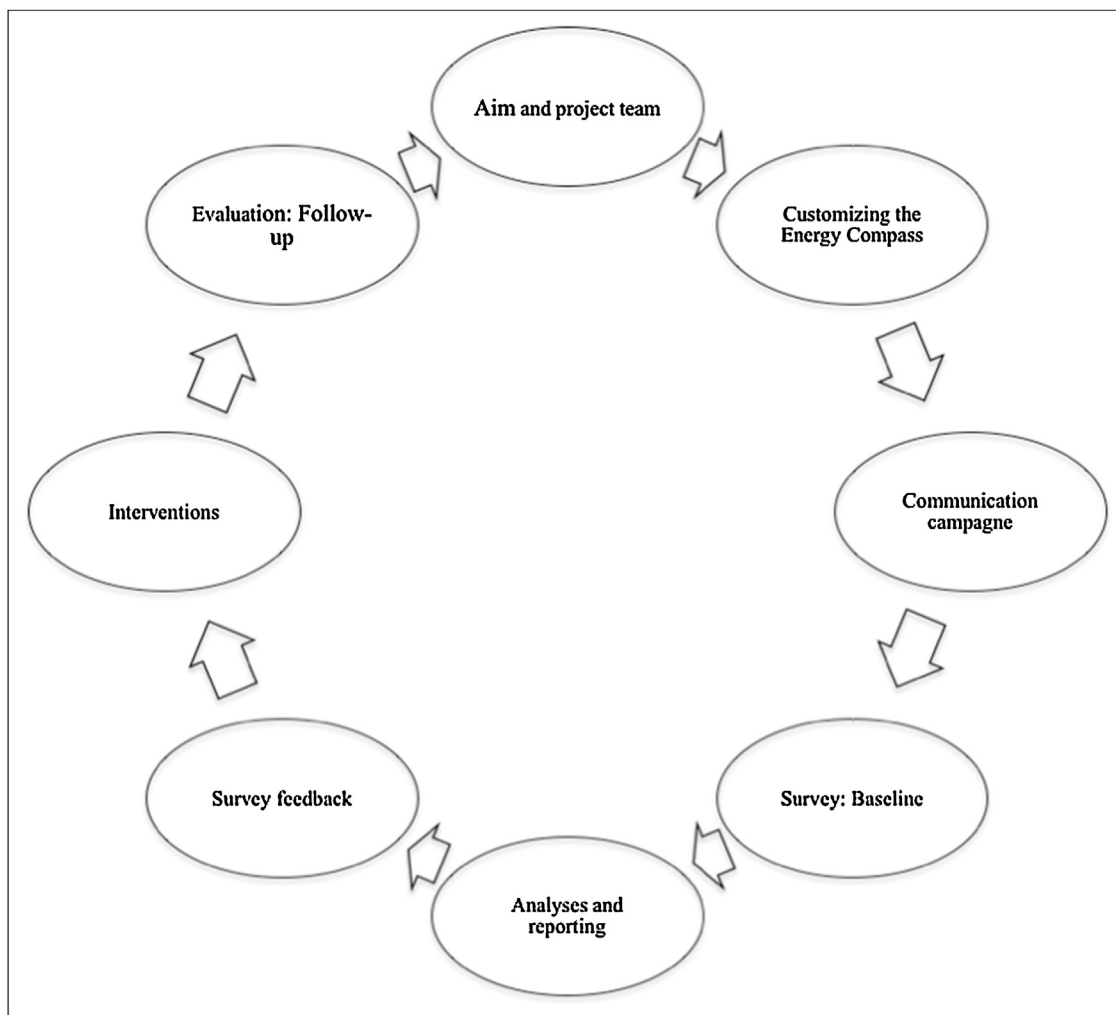


Figure 2 The Process Model of the Project

personalized feedback report of their scores on the EC. Please note that this was in sharp contrast to the previous surveys that were mandatory and did not produce immediate, personalized feedback. Anonymity was guaranteed, and it was explicitly stated that nobody in the organization would have access to the data of the employees. Last but not least, it was emphasized that the results of the survey would be used to improve employee's working conditions. So the campaign provided two answers to the question 'what's in it for me?': a personalized report as well as better working conditions.

The company's intranet was used for informing all employees about the aims and planning of the project. For instance, a short 1.5-min animation was published on the intranet and posters were on display in all participating hotels. To stress the importance of the project, top-management was the sender of all communications to the employees.

Step 4: Survey and Individual Feedback

All 1055 employees received an email in their private mailbox with a link to the online EC. Instead of work email

addresses, private email addresses were deliberately used in order to stress that participation was voluntary. During the three-week period that the web link was open, hotel managers received five updates of the response rates of their own hotel, as compared to the other hotels. This was meant to facilitate participation, as low scoring hotels were expected to stimulate their employees to fill out the EC. The final response rate was 43% (N = 452) and ranged between hotels from 21 to 73%. Probably, this relatively low response rate should be interpreted as a counter-reaction to previous surveys that have been mandatory for all employees. The lowest response – about 20% – was observed among dishwashers and apprentices, most likely because their commitment to the organization is relatively low, also given high turnover rates for these groups. The largest professional groups in the sample were desk receptionists (38%), waiters (22%), cooks & chefs (11%), and house-keeping (9%). The mean age of the sample was 36.6 years, with 49% aged under 35 years, and an average tenure of 5.5 years. The figures illustrate the young age of the company's workforce. The majority of the sample were women (55%) and on the average employees worked 35.4 h per week, which was 15% more than is stipulated in their labor contracts. So overwork is pervasive.

It took participants on average 42 min to complete the EC, varying from 12 min to over 3 h. Obviously some employees left the EC-window open on their computer while doing other things. The vast majority of the employees – 86% – needed maximum 30 min to complete the EC, which was set as the targeted time by the project team.

Immediately after completing the EC, the employees received an automatically generated feedback report, which compared the employee's scores with the benchmark (i.e. the average Dutch employee) and which explains the meaning of the scores in greater detail. In case of an unfavorable score relative to the benchmark the feedback text invites the employee to take action. For instance, if a score indicates that career perspectives are poor, a web link to the company's career counseling service is provided for making an appointment. The individual feedback report is structured according to the JD-R model, meaning that job demands, job and personal resources, well-being (work engagement and burnout), and outcomes are each presented under different headings. In order to assist employees with the interpretation their report, the logic of the JD-R model is briefly explained.

Step 5: Analyses and Reporting

A general report was drafted for the entire organization, as well as for each of the 22 hotels individually. In addition, reports were also drafted for the 14 largest teams that included more than 7 participating employees. The company-, hotel- and team-reports were based on aggregated data, which means that average scores for the whole organization, the hotel, and the team are reported. Like the individual feedback report, the aggregated reports give an overview of the scores for each element of the JD-R model, including a comparison with the benchmark. For the organization as a whole the average Dutch employee served as a benchmark, whereas for the hotels and the teams other hotels and other employees from the same hotel were used as reference groups, respectively. For the sake of brevity, only the overall findings for the entire organization will be discussed here. Needless to say that the results of individual hotels (and teams) may deviate from this general picture.

It appears that, generally speaking, scores on the EC are quite favorable. For instance, 28% of the employees were engaged, whereas only 8% reported burnout complaints, against 15% for both in the working population. Also levels of job satisfaction and commitment were higher, whilst turnover-intention was somewhat lower. On the negative side, two stressors stand out; work overload was more prevalent and the pace of change was too high for 5% of the employees, against only 1% in the reference group. As far as job resources are concerned, appropriate tools were available for 49% of employees (60% in the reference group), and for 52% their pay was fair (66% in the reference group). In addition, scores on person-job fit, possibilities for learning and development, and team effectiveness were (somewhat) lower as well. Nevertheless, taken together, it seems that employees are exposed to few stressful job demands and can draw upon considerable job and personal resources.

This is not to say that job characteristics cannot or should not improve. In order to identify those job demands and job

resources that should be improved in order to increase work engagement, a so-called priority analysis was carried out for engagement (see Fig. 3a) and burnout (see Fig. 3b) separately.

Basically, this analysis combines the *level* of employee's job demands and job resources (above or below the benchmark) with the *impact* these scores have on work engagement and burnout (increase or decrease). Specifically, those demands and resources that deviate from the benchmark – either positively or negatively – are entered in a regression analyses in order to determine their positive or negative impact on work engagement and burnout.

From the priority analyses of work engagement no job characteristics emerged that should be tackled or monitored. However, recognition (by customers and colleagues), congruence of personal and organizational values, and use of skills were identified as assets that increase levels of engagement and should therefore be utilized. In other words, these three resources are crucial in maintaining high levels of engagement. Most importantly, however, person-job fit, possibilities for learning and development, availability of tools, and team-effectiveness scored below the benchmark and should thus be further developed in order to enhance levels of engagement.

A similar priority-analysis for burnout revealed that skill utilization should be utilized because this is an asset that decreases burnout. Furthermore, there is room for improving person-job fit that should be developed in order to decrease levels of burnout. Finally, physical demands, interpersonal conflicts, and emotional demands scored below the benchmark—which is fine, of course. But because these demands may potentially increase levels of burnout they should be monitored.

In sum, although levels of engagement are relatively high, it seems that further improvement is possible, specifically by developing a limited set number of resources (person-job fit, possibilities for learning and development, availability of tools, and team-effectively). Likewise, burnout could be further reduced by increasing person-job fit and the utilization of employee's skills. It seems that there is a firm basis for this kind of improvements as results of the EC indicate that employees feel committed to the organization and their team, experience a supportive, positive and fair social climate, share values with the organization, and have trust in leadership.

Step 6: Survey Feedback

The general report was discussed with top-management, after which all 22 hotels received separate reports, as well as the 14 teams. Feedback sessions were held individually with the management of the four most problematic hotels, whereas results were discussed with the remaining 18 hotels in four sessions with four hotels each. In addition to the dedicated consultant and the head of HR, the COO participated in each feedback session as to emphasize the importance of the sessions for the top-management. In these sessions two questions were answered.

First, in how far does the pattern of results correspond with the perception of the stakeholders? This is a kind of validity check. In case the results of the EC would have been

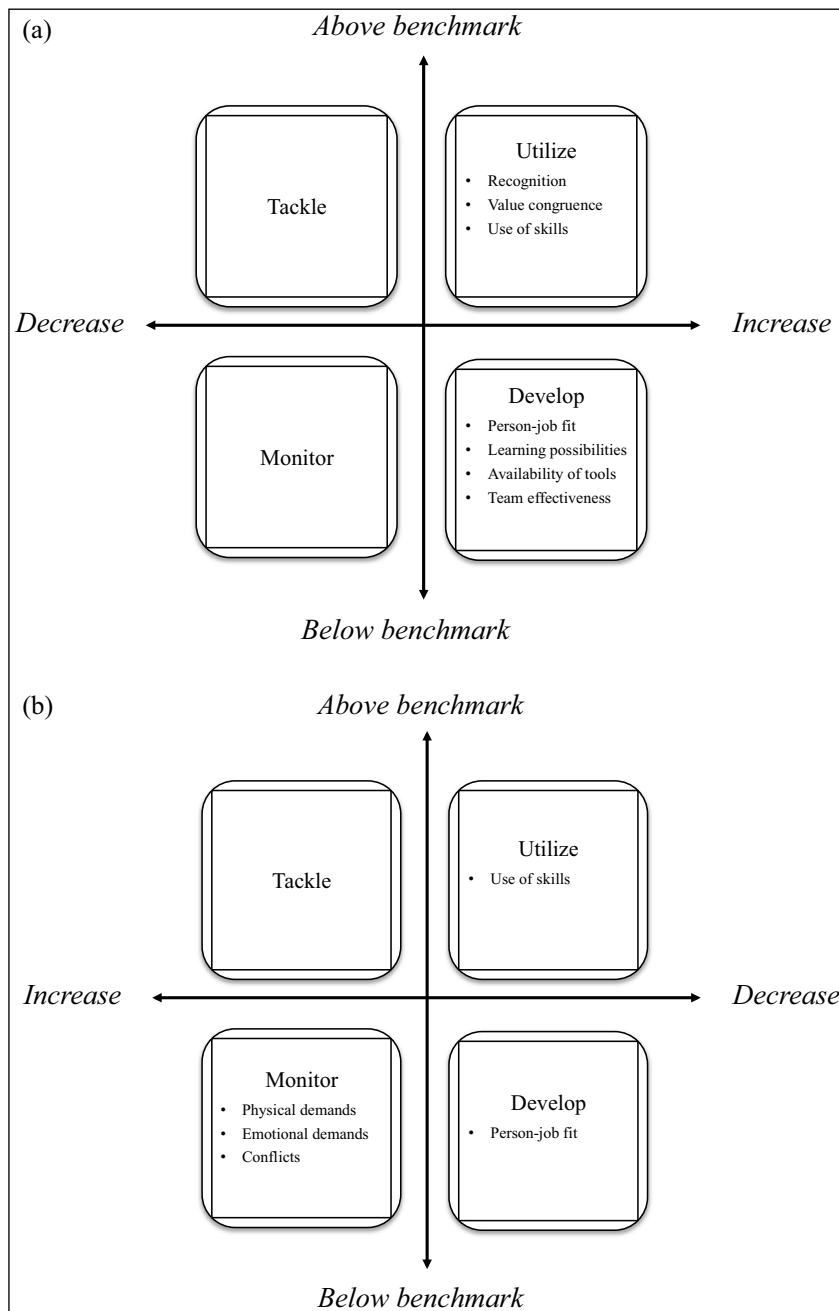


Figure 3 (a) The Priority Matrix for Engagement. (b) The Priority Matrix for Burnout

completely at odds with the picture the stakeholders have, something is wrong and the cause of that discrepancy needs to be identified before proceeding further. However, as a rule, the stakeholders shared the conclusions of the EC and it was felt that the pattern of results that was uncovered by the EC matched the perception of the general- and hotel management. So it seemed that the EC produced a valid picture.

Second, given the conclusions of the EC, what measures could and should be taken in order to increase engagement and prevent burnout? Evidently, answering this question includes prioritizing various potential measures. A

tailor-made procedure was followed here, whereby the entire organization and each hotel (and team) formulated its own objectives. The reason for this was that – as noted above – the results of the EC varied between various hotels. Below in the next step the measures are discussed that were taken at the general, organizational level.

The feedback sessions were conducive in building a common language to discuss the results and the actions to be taken. The terminology and the logic of the JD-R model, which is quite easy to understand also for non-specialists and non-academics, proved to be quite helpful in this respect. In addition, feeding back the results and discussing these

critically with management, supervisors, and employees is crucially important to build commitment and trust for implementing interventions.

Step 7: Interventions

In principle, based on the results of the EC, two types of measures can be taken. First, employees themselves may take measures to improve their own personal or job resources, or decrease their job demands. Usually about 10%–15% of the employees do so spontaneously; for instance, they talk to their bosses or their colleagues to address certain issues, contact a career counseling service, or consult their occupational physician. In the current project, the focus was not on individual-based measures but on measures that were taken at the level of the entire organization or the hotels or the team. For reasons of economy I will only discuss the main measures that were taken at the overall organizational level. In addition, each hotel or team initiated specific actions to improve engagement and prevent burnout. For instance, in one particular hotel a large gap existed between the front office (reception) and the restaurant, which had a negative impact on customer service. It was decided that receptionists would occasionally work in the restaurant, and vice versa, in order to foster mutual understanding. Furthermore, particularly for hotels in Amsterdam the combination of a very high workload and a fierce competition on the hospitality labor market resulted in a shortage of personnel. Therefore, Amsterdam hotels decided to focus their HR policy more on personal retention.

Based on the report that was discussed with top-management the following actions were taken for the entire organization:

1. The annual HR-cycle was updated with the aim of keeping jobs challenging. Traditionally, each summer employees had a performance review with their supervisor that focused almost exclusively on past performance. This review was followed in the winter by a formal performance appraisal. The performance review was replaced by a 'feed forward session', which is future oriented and focuses on employee's preferences, potentials, and strengths, and how to develop these. In addition, a 'talent chart' is introduced which gives an overview of the talent pool at the level of the entire organization. This information is used for HR policies to support career management of employees. Refocusing the HR-cycle would specifically increase person-job fit and the use of skills, and therefore most likely enhance team effectiveness.
2. The curriculum and usage of the organization's own training center was adapted to better meet the specific needs of the employees. Their training needs were systematically inventoried, new training programs were launched, and existing programs were updated. The new range of training programs was communicated to hotel managers and their employees. Two internal trainers were dedicated to this project that, in essence, focused on increasing employee's possibilities for learning and development.
3. Top-management, personified by the CEO and the COO, performed site visits to each of the hotels to have round table discussions at lunchtime with all employees. This way, top-down and bottom-up communication is improved, so that top-management is better informed about the issues of employees at the shop floor, whereas employees receive first-hand information about the organization's policies. As a result, these site visits and round tables might increase employee's perceived recognition and their shared values with the organization.
4. Additional channels were opened to communicate with employees, such as mailings to their private addresses (both via email and surface mail), organize town hall meetings with employee in hotels, and displaying posters in staffrooms with important messages. The aim of these actions was to increase the alignment of the employees with the company's mission and core values (i.e., respect, entrepreneurship, passion, style, and customer orientation). This was expected to improve communication and value congruence with the organization.
5. ICT-systems were updated and better adapted to the business process and to the user's needs. Many employees use these tools, and it was expected that they would benefit from improved ICT-systems when performing their jobs.

Step 8: Evaluation

One year after the EC was carried out a follow-up measurement was conducted using the same survey. Again, and following the same procedure, all employees were invited to fill-out the EC and 475 employees did so. However, the records of only 241 employees could be linked as they participated both times in the survey. This corresponds to roughly half (53%) of the initial sample. It appeared that in this group the rate of engaged employees had increased by 2% at follow-up, whereas the level of burnout remained the same. In the total follow-up sample, which also includes those who filled in the EC for the first time, the rates for work engagement and burnout were 32% and 8%, respectively. This corresponds to an increase of 4% for engagement and a decrease of 1% for burnout. So, on balance, the new group who participated in the survey for the first time at follow-up was more engaged and had less burnout complaints than those who also participated one year ago. Moreover, an increase in job satisfaction (4%), organizational commitment (4%), and team commitment (3%) was observed, as well as and a minor decrease in turnover intention of 2%. Hence, it seems that, overall, employee well-being, satisfaction, and commitment have increased. Also, it seems that those who filled out the questionnaire for the first time at follow-up (i.e., new hires) are more engaged, satisfied and committed than those with more tenure.

Thus far it's mostly good news. However, it is rather challenging to explain these positive changes since most drivers of well-being did not change over time. Rather than change, stability seems to be the norm in the hotel chain. Nevertheless, some minor negative as well as positive changes were observed. On the negative side, pace of change, work-home conflict, and interpersonal conflicts slightly increased, whereas use of skills and value congruence somewhat decreased. On the positive side, recognition, available tools, fair pay, organizational justice, possibilities for learning and development, and career

perspective have increased. The increase of some of these job resources might be linked to specific measures that have been taken. More specifically: (1) renewing the annual HR-cycle might have increased employee's recognition and career perspectives; (2) renewing the training curriculum might have increased employee's possibilities for learning and development as well as their career perspectives; (3) site-visits and round tables, might have fostered employee's recognition by management, and organizational justice; (4) opening new communication channels might have fostered recognition and organizational justice as well; and (5) updating and adapting ICT-systems might have improved the availability of tools. Yet, other resources remained unaffected or even worsened, although not substantially.

Taken together, the results of the evaluation are somewhat difficult to interpret, particularly as far as the effects of the measures are concerned. It should be kept in mind though, that only measures for the entire organization were taken into account here. As pointed out above these were supplemented by specific measures in particular hotels or teams. Clearly, this complicates interpretation. Yet, the main message to be taken from the evaluation is three-fold: (1) levels of employee engagement, satisfaction, and commitment have increased; (2) with a few exceptions, levels of job demands and job resources remained rather stable; (3) although no firm conclusions can be drawn about the effectiveness of the interventions it seems that they can be linked to increases in some job resources.

Some caveats are also worth mentioning. It might indeed be that the interventions have increased some resources, which, in their turn, had a positive effect on employee well-being and commitment. But perhaps the interventions also changed other aspects of the organization that were not assessed by the EC, such as organizational climate. Also, perhaps more time is needed for the changes to have a measurable effect. For instance, employees participate only once per year in a future oriented 'feed forward' session with their supervisor so that it is not very realistic to expect large, short-term changes in job characteristics as a result of renewing the HR-cycle. Finally, and most importantly, evaluating a project by using a follow-up measurement is not the same as investigating the effectiveness of interventions. Ideally, for that a randomized control trial is needed. That type of experimental design not only includes a control group but also the randomization of employees across the intervention and control groups. Rather, the evaluation of the current project is a final step to conclude the first cycle and to provide input for the next cycle. For this particular project this means, for instance, that the observed stability should be discussed in feedback sessions with management and employees. Do they recognize this? Have other things perhaps changed? Did changes in one part of the organization cancel out those in other parts? Such questions could mark the start of a new cycle.

CONCLUSION AND OUTLOOK

In this article, it is argued and illustrated that the JD-R model may serve as the guiding principle for an organizational

development process that aims to increase work engagement and prevent burnout. The model is well equipped for this purpose because it is comprehensive, as it includes both a positive motivational process as well as a negative a stress process. This balanced approach is an important asset to 'sell' the model to organizations because it integrates an occupational health approach (reducing job stress and burnout) with an HR-approach (increasing work motivation and engagement).

Moreover, the JD-R model can be broadly applied in various types of organizations because a wide range of job- and personal characteristics, as well as outcomes can be included. At the same time the model is also flexible, in the sense that it may be tailored to the specific setting in which it is applied. This is exemplified by the EC, which is an efficient online tool to assess all relevant JD-R constructs. Potentially about sixty constructs can be included in the EC, but usually fewer are included as it is tailored to the organization. For instance, in the hospitality project 34 constructs were included, which took employees approximately 30 min to complete. This combination of breadth and specificity is of great practical significance and is therefore another unique selling point of the JD-R model.

As is exemplified by the case above, the JD-R model provides a common language among members of the organization that facilitates communication about 'work and well-being'. For many organizational members, including management, this is rather unknown and slippery territory for which an appropriate vocabulary is lacking. Moreover, the JD-R model also acts as a vehicle to understand the underlying psychological dynamics in terms of stress- and motivational processes. Finally, the JD-R framework plays a major role in prioritizing and implementing future actions to increase work engagement and prevent burnout. Because the JD-R model is intuitively appealing and easy to explain, for instance by using concrete examples from employee's or manager's own experiences, it is well suited as a conceptual tool for understanding and guiding future actions.

A logical next step is to extend the EC with an online platform for self-management and self-enhancement that also builds upon the JD-R model. Based on the EC-scoring pattern, the online system suggests for each participating employee a set of specific training modules to improve work engagement and prevent burnout. For instance, 'how to craft your job', 'be in control of your time', 'how to manage your boss', 'dealing with uncertainty', or 'give yourself a break'. Following the logic of the JD-R model, these online modules aim to increase employee's resources and reduce their demands. The online platform may be used individually by employees as well as collectively by teams. Currently, the platform is being implemented and evaluated across various organizations. So the next step forward is to add a personalized, efficient online system that supports the organizational development process toward better employee well-being.

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APPENDIX A. CONSTRUCTION OF THE ENERGY COMPASS

As few items as possible were included in the EC in order to minimize the respondent's burden, which is particularly important for survey research in organizations. In fact, 23 concepts were measured with only one item, which agrees with a recent call for the use of single-item measures in organizational research.³ As a rule, items from existing scales were used for the EC, but for 18 constructs self-formulated items had to be used because no items from existing scales were available (see Table 2). The items of the EC were selected on face validity and correlations were computed with the total scale-score using data collected over the years in various samples (the total number of respondents exceeds 50,000). A criterion of $r > .80$ was used for these item-total correlations; most values were around .90, though. Additionally, in order to evaluate the concurrent validity, correlations with other variables were compared between the short (or 1-item) scales and the original longer scales. It was expected – and found – that the size of both correlations did not largely differ (i.e., $< .10$). For instance, using a total sample of over 77,000 respondents,

it appeared that the 9-item version of the Utrecht Work Engagement Scale correlated .96 with the short 3-item version that is included in the EC.⁴ Moreover, both versions correlated almost identically with 41 demands, resources and outcomes with an average, absolute difference of only .02. Finally, the internal consistencies (coefficient α) of all shortened scales in the EC exceed by far the usual criterion of .70 with an average value of .86. In short, there is considerable evidence for the reliability and the validity of the EC.

In order to obtain reference data from a relevant group that could serve as a benchmark, the EC was administered in a representative sample ($N = 1213^5$) of the Dutch working population aged between 18 and 65. Based on the 25th and 75th percentiles of the frequency distributions of the scores, cut-off values for 'low' and a 'high' scores were established for each construct. So when an employee scores 'high' ('low') on a particular job demand, resource, outcome, this means his or her score is comparable with that of the 25% highest (lowest) scoring Dutch employees. For work engagement and burnout the cut-off for a 'high' score was set at 15%. Those who score in between both cut-off values are 'average' compared to other Dutch workers.

³ Fisher, Matthews & Gibson (in press).

⁴ Schaufeli, Shimazu, Hakanen, Salanova & De Witte (2016).

⁵ For establishing the size of the sample an error margin of 3% and a confidence interval of 5% was used (Schaufeli, 2015a).



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