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THESIS

Sneek peek in the black box:
How change resources are related to positive organizational outcomes

Linda Schulz
3414264
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Begeleidster: Drs. Machteld van den Heuvel, PhD researcher

Tweede beoordelaar: Dhr. Prof. dr. T.W. Taris

According to the JD-R model, job resources are linked to several positive organizational outcomes (e.g. work engagement). This study examined possible mediators in the relationship between the change resource *participation* and two positive organizational outcomes (*work engagement* and *adaptive performance*). The hypothesized mediators consisted of one change attitude (*willingness to change*) and one change behavior (*job crafting*) which were sequentially analyzed. The data was collected via an online survey. The final sample consisted of 665 Dutch employees in different sectors of the labor market, all of whom were confronted with organizational change. The attitude *willingness to change* mediated the relationship between the change resource of participation and the change behavior of job crafting. Job crafting, in turn, mediated the relationship between willingness to change and work engagement and adaptive performance. Theoretical and practical implications of those findings are discussed.

It is not the strongest of the species that survives, nor the most intelligent, but rather the one that is most adaptable to change. – Charles Darwin

A changing environment requires organizations to adjust in order to remain competitive and survive. Industrial organizations have to adjust their products and manufacturing to work with new materials while taking into account their financial situation that is in turn influenced by the recession, and follow the newest laws. But changes such as delayering, downsizing, mergers, and international cooperation ask a lot of an organization. When speaking of organizational change, it is important to remember that even organization-wide change is implemented at the level of individual employees (Bovey & Hede, 2001; Woodman & Dewett, 2004). Employees are required to change at least parts of their behavior in order for the organizational change to succeed (Porras & Robertson, 1992). This means that employees have to be "increasingly adaptable in order to perform well in the changing, dynamic environment of their organization (Pulakos, Arad, Donovan & Plamondon, 2000). This, however, is not always the case. For individuals, change can be straining and they tend to fight to keep the old system when the pace of change feels too high. Since individuals' reactions to change (for an overview, see Saksvik, Tvedt, Nytro, Andersen, Andersen, Buvik, & Torvatin, 2007) are a decisive factor in the success and failure of organizational change, efforts to block organizational change are not unproblematic (Saksvik et al., 2007). Therefore, research that enhances our understanding of what supports organizational change on the micro-level of the individual is much needed (Elias, 2009; Fay & Lührman, 2004). The fact that only a quarter to half of all change projects actually reaches its strategic and financial goals (Clegg & Walsh, 2004; Kramer, Dougherty, & Pierce, 2004) further reinforces the need for research.

This paper aims at increasing the knowledge of the factors on the level of the individual that support the implementation of organizational change. While organizational change usually alludes to large, organization-wide change, it is broadly defined in this study. Organizational change can thus include "a wide range of different strategies, actions, and consequences" (Saksvik et al., 2007, p. 244). In specific, this study it looks at the factors that are associated with engaged and motivated employees who display the behavior that is needed in order for the change to succeed.

Job Demands – Resources Model

While various models (such as e.g. Ajzen & Fishbein's theory of reasoned action, 1980) might help develop a model that can help deepen our understanding of the factors supporting the implementation of change, there is a model that is very much concerned with just the variables analyzed in this study: The Job Demands-Resources model (JD-R; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Figure 1 depicts the key elements of the

model. The JD-R model suggests that there are two general types of variables influencing organizational outcomes: Those variables that place strain on individuals and lead to negative organizational outcomes such as employee health problems (job demands), and those variables that motivate individuals and lead to positive organizational outcomes such as engaged employees and excellent performance (job resources; Bakker & Demerouti, 2007; Demerouti et al., 2001). This study focuses on the second, positive part of the model that is associated with job resources and positive organizational outcomes.

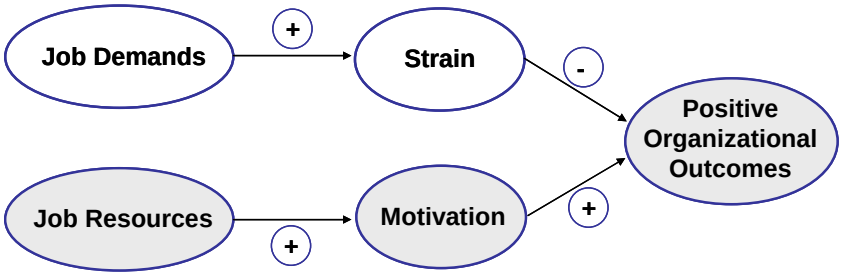

Figure 1. The basic processes of the Job Demands-Resources Model. The grey portion is the process that this study examines.

Job resources can be defined as those factors of a job that are functional in achieving work goals, reduce job demands and the associated costs, and stimulate personal growth and development (Bakker & Demerouti, 2007). Examples of job resources are support from colleagues or the superior, performance feedback, and autonomy.

The JD-R model states that job resources are linked to positive organizational outcomes. A body of cross-sectional, longitudinal, research as well as diary studies has found that this holds true across occupations and countries. Bakker, Demerouti, and Schaufeli (2003b) and Bakker, Demerouti, de Boer, and Schaufeli (2003a) found that job resources predict dedication and organizational commitment for Dutch employees. A study by Hakanen, Bakker, and Schaufeli (2006) among Finnish teachers showed that job resources are related to organizational commitment. Similarly, job resources were found to predict extra-role performance via work engagement[1] for employees in different Dutch companies and in various job positions (Bakker, Demerouti, and Verbeke, 2004). Thus, the JD-R model and the link between job resources and positive organizational outcomes have been confirmed in many studies and seem to be a valuable model for the research conducted in this study.

[1] Extra-role performance is behavior at work that is not directly related to filling in the position, but is important and helpful nonetheless, such as helping colleagues think of a solution.

The study

The purpose of this study is to enhance the understanding of why and how job resources and positive organizational outcomes are related and to apply this model in a context of change. The following research model was developed for this purpose. It can be seen as a chain, with each box (partially) causing the next one.

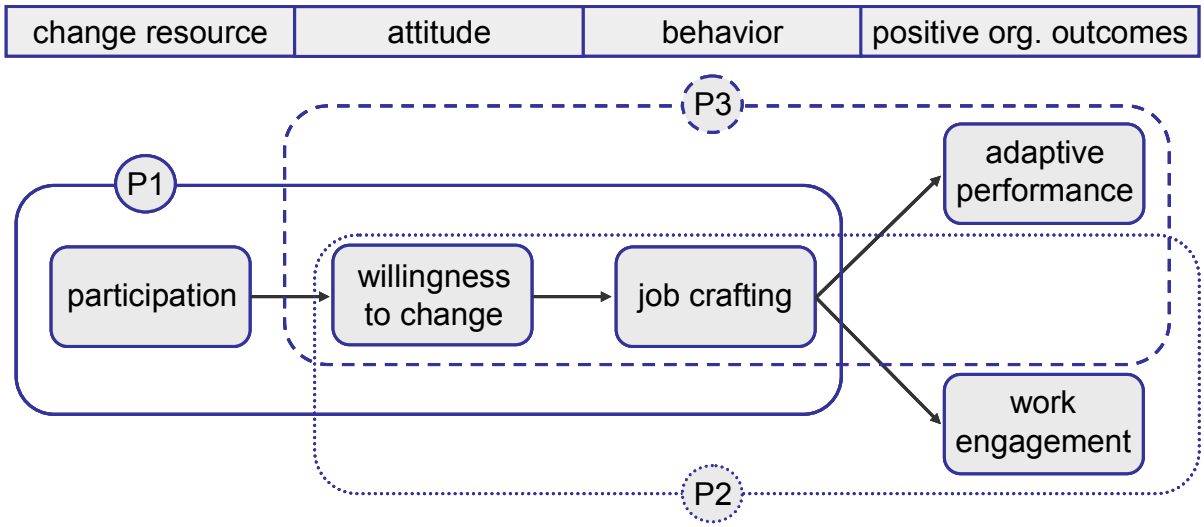

Figure 2. The research model with the variables that are expected to mediate the relationship between change resources and positive organizational outcomes, divided into three processes (P1-3).

In order to test this model with two mediators, the model was split into two main processes: Hypotheses 1a - d (H1) test the first part of the model, process 1. Since two outcome variables are examined in this study, the examination of the second and third process resulted in hypotheses 2a - d (H2) and 3a - d (H3). Below we will introduce and define each concept as well as describe the paths in the model, starting with the first variable of participation. In doing so, we will follow the structure of the research model and introduce the hypotheses one by one.

Change Resources: Participation

Instead of the job variables that have widely been tested (e.g. social support (Bakker et al., 2003b; Hakanen et al., 2006; Llorens, Bakker, Schaufeli, & Salanova, 2006), performance feedback (Llorens et al., 2006; Schaufeli & Bakker, 2004; Schaufeli et al., 2009), and supervisory support or coaching (Bakker et al., 2003b; Hakanen et al., 2006)), this study focuses on a job resource that literature has connected to supporting change. The specific change-supporting job resource, or change resource that stands at the start of the model, is *participation.* Lines (2005) defines participation as “a style of working whereby organizational members from different functions and hierarchical levels work together in order to develop and implement a solution to an organizational problem” (p. 158f.). This

variable has several positive effects on the successful implementation of the change process. Participative and supportive conditions have been linked to low levels of resistance to change (Burnes & James, 1995). Tierney (1999) found that participation was one of the conditions creating a positive change environment. Furthermore, the acceptance of change has been found to be greater in those change situations that allow for employees to have a say in planning and implementing the change (Sagie & Koslowsky, 1996).

It is also possible that participation reduces the negative effects of organizational change (Saksvik et al. 2007). Changes often go hand in hand with increased job insecurity and perceived loss of control (Saksvik et al., 2007), which leads to various negative outcomes such as lower commitment and motivation (Worral & Cooper, 1998), more turnover and a poorer quality of work (King, 2000). Involvement in the change process diminishes those negative outcomes, as it increases the degree of control that employees feel they have over their work (Saksvik et al., 2007). Control, in turn, is associated with outcomes such as job satisfaction, commitment and performance (Sparks, Faragher, & Cooper, 2001). Taken altogether, participation is an important variable that may predict positive outcomes such as work engagement during change, and the extent to which employees adjust their behavior to the change.

Behavior: Job Crafting

In the context of change and innovation, literature identifies the concept of proactive behavior (Bateman & Crant, 1993; Crant, 2000; Parker, Turner, & Williams, 2006). One proactive behavior is job crafting. *Job crafting* is defined as “the physical and cognitive changes individuals make in the task or relational boundaries of their work” (Wrzesniewski & Dutton, 2001, p. 179). The concept departs from the assumption that no job is that fixed that it cannot be adapted to better suit an individual. An example for job crafting is a receptionist who sees it not only as her task to welcome visitors and answer phones but who actively helps her colleagues work together more closely by spreading the information that enters the company via the reception-desk. Job crafting is thus a way to change the existing job without violating the constraints of the job description either by changing type or quantity of tasks, relationships, or the way in which a job is viewed (Wrzesniewski & Dutton, 2001). Job crafting is associated with different positive organizational outcomes, such as stress-reducing and person-environment fit increasing. The person-environment fit model states that stress originates from a mismatch between person and environment. As Sulsky and Smith (2005) showed, job crafting increases the person-environment fit and by doing so reduces the likelihood of stress. Job crafting was recently re-conceptualized in line with the JD-R model (Petrou, Demerouti, Peeters, & Schaufeli, 2010). In 2010, Petrou et al. (2010) conceptualized that job crafting consists of three distinct behaviors: (a) resources seeking, (b) challenges

seeking, and (c) demands reducing. In this study we focus specifically on the aspect of resources seeking.

Research has shown that resources-seeking leads to the creation of more resources (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Xanthopoulou et al. (2007) found that supplying employees with job resources leads to an increase in the employees' personal resources, such as self-efficacy, organizational-based-self-esteem, and optimism. This is explained by conservation of resources (COR) theory whose first assumption is that individuals make use of their resources in order to deal with a situation and to fend off any negative consequences (Hobfoll, 1989). The second assumption is of immediate relevance to this study, and states that resources are disposed to lead to the creation of even more resources (Hobfoll, 2002). If we apply COR theory to this study we can assume that if an individual is equipped with change resources (i.e. participation) this should lead to the creation of more resources (resources-seeking). This is why we include the job crafting facet of resources seeking in this study. The first hypothesis is therefore: *Participation will be positively associated with resources seeking* (H1a).

Attitude: Willingness to change

While behavior such as resources seeking is described as an important step on the road to successful change and positive organizational outcomes, literature identifies another variable that theoretically may precede behavior: the employees' attitude towards change (Elias, 2009; Lines, 2005). Petty and Wegener (1998) define attitude towards organizational change as the general evaluative judgment – positive or negative - of an organizational change initiative. Attitudes are crucial in determining the success or failure of a specific change (Elias, 2009). Armenakis, Harris, and Mossholder (1993) suggest that participation is related to a greater degree of readiness for change. Wanberg and Banas (2000) concluded that participation in the change decision process predicted higher levels of openness to change in an organizational change context. Openness to change bears much overlap with the second variable in this study's model, willingness to change. In line with the existing literature, we expect to find that a higher level of participation is positively related to a more positive change attitude, in specific a higher level of willingness to change. Hypothesis 1b is therefore: *Participation will be positively associated with willingness to change* (H1b).

Positive attitudes alone are not enough to increase positive organizational outcomes. It is imperative that employees also behave in ways that support the specific change (Koys, 2001). COR theory states that higher levels of resources motivate the generation of more resources (Hobfoll, 2002). In line with this, Rucci, Kirn, and Quinn (1998) found in an extensive study amongst sales professionals that positive attitudes lead to positive behavior. Elias (2009) and Lines (2005) concluded that individuals possessing a strong and positive

attitude towards change are more likely to exert behavior supporting change. Lyons (2008) found that readiness to change and job crafting were associated with one another. Furthermore, (Petrou et al., 2010) found that positive change attitudes were associated with general resources seeking (job crafting). It can therefore be expected that willingness to change, as a positive attitude, will be positively associated with resources seeking. Hypothesis 1c is thus: *Willingness to change will be positively associated with resources seeking* (H1c).

Willingness to change as a mediator

As discussed above, participation is likely to be associated with resources-seeking (Hobfoll, 2002; Xanthopoulou et al, 2007). The direct effect might occur, e.g., because participation provides employees with the needed autonomy to craft their jobs. Also, participation is related to willingness to change (Wanberg & Banas, 2000). Furthermore if positive change attitudes are present, it is more likely that job crafting occurs (Elias, 2009; Lines 2005; Lyons, 2008). While the direct effect between the variables is clear, it is also possible that an indirect effect can be found for the relationship between participation and resources seeking. For example, participation could be associated with resources seeking via willingness to change. Willingness to change is a positive change attitude and as such may predict more openness to the possibilities of job crafting. This leads to hypothesis 1d: *Willingness to change partially mediates the relationship between participation and resources seeking*(H1d).

Work engagement

In examining the relationship between change resources and positive organizational outcomes, we cannot stop at positive behavior. Research has found much evidence for the link between various job resources and positive organizational outcomes (Bakker & Demerouti, 2007; Demerouti et al., 2001), as discussed above. The relationship that is perhaps best documented, however, is the one between job resources and the positive organizational outcome of work engagement. *Work engagement* can be defined as a 'positive, fulfilling state of mind' (Schaufeli, Salanova, Gonzàles-Roma, & Bakker, 2002, p. 75) and is characterized by the three dimensions of vigor, dedication, and absorption (Schaufeli et al., 2002). The first dimension, *vigor*, is characterized by a high degree of energy, mental endurance, and perseverance at work (Schaufeli et al., 2002; Schaufeli & Bakker, 2004; Bakker & Demerouti, 2008). *Dedication* is defined by high levels of involvement and a sense of significance, pride, enthusiasm, and challenge, while *absorption* is typified by full concentration and focus on one's work, whereby time passes quickly (Schaufeli et al., 2002; Schaufeli & Bakker, 2004; Bakker & Demerouti, 2008). Engaged employees are therefore employees who tend to work hard and love their job.

Schaufeli en Bakker (2004) conducted research on the JD-R model in a large sample consisting of employees from four Dutch organizations in the service sector. Supporting the assumptions of the JD-R model, they found a relationship between several job resources and work engagement. The same held true in a Finnish context (Hakanen, Bakker, & Schaufeli, 2006) in a large study among teachers and in a Spanish context (Llorens et al., 2006). The relationship between job resources and work engagement was also found on a week-to-week basis (Bakker & Bal, 2009) and day-to-day basis (Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009). Longitudinal studies in Finland (Mauno, Kinnunen, & Ruokolainen, 2007) and the Netherlands (Schaufeli, Bakker, & van Rhenen, 2009) among health care personnel and telecom managers respectively further confirmed those findings.

Not only job resources can have positive effects on work engagement. It is also important to look at personal variables that may affect the outcome of work engagement, because individuals differ from one another on various attributes. Some of those attributes, such as intelligence are really stable, while personality traits do not vary much (Luthans & Youssef, 2007). However, individuals also differ from one another with regards to those personal variables that are more flexible, or state-like (Luthans & Youssef, 2007). Kohn and Schooler (1982) discovered that the organizational structure of one's work influenced the employees' more malleable personality attributes. Those variables are state-like as opposed to trait-like constructs (Xanthopoulou et al., 2009; Luthans & Youssef, 2007), meaning they are flexible and can change. Attitudes, such as willingness to change are also malleable personal variables (Lines, 2005), as has been discussed above (Lines, 2005; Wanberg & Banas, 2000). Research has found that positive attitudes have an inverted relationship with negative organizational outcomes (Mount, Ilies, & Johnson, 2006). Moreover, Xanthopoulou et al. (2007) found that state-like personal variables such as optimism and self-esteem can predict the positive organizational outcome of work engagement. It is likely to think that willingness to change will have the same effect, because as an attitude it is also a state-like personal variable. This leads to hypothesis 2a: *Willingness to change will be positively associated with work engagement.* (H2a).

Research has found that proactive behavior, a concept related to change and innovation, leads to various positive organizational outcomes, amongst which are job performance (Crant, 1995), organizational innovation (Parker, 1998), and career satisfaction (Seibert, Crant, & Kraimer, 1999). Furthermore, Wrzesniewski and Dutton (2001) state that job crafters actively influence those elements of a job that increase motivation. Since work engagement is a positive organizational outcome, we can expect that resources-seeking is also positively associated with work engagement. Hypothesis 2c is thus: *Resources-seeking will be positively associated with work engagement (H2c).*

Resources seeking as a mediator

As reviewed above, we expect that attitudes predict behavior, while behavior leads to positive organizational outcomes. Applying those findings to the variables studied in this paper, it is to be expected that the positive attitude of willingness to change leads to the proactive behavior of resources-seeking, which in turn leads to the positive organizational outcome of work engagement. In other words, it is likely that people who have a positive attitude towards change will search for more resources and that this action will provide work engagement. While different antecedents and outcomes of proactive behavior have been identified by literature (Crant, 1995; Parker, 1998; Seibert, Crant, & Kraimer, 1999), resources-seeking has not yet been tested as a mediator. This is why the next hypothesis will explore the mediating role of resources-seeking in the relationship between willingness to change and work engagement. Hypothesis 2d is thus: *Resources-seeking partially mediates the relationship between willingness to change and work engagement* (H2d).

Adaptive performance

Whenever organizational change is implemented, this carries consequences for the employees in an organization. New behaviors have to be developed to adapt to the organizational change. The work-related behaviors needed to behave in accordance with the new situation are called *adaptive performance* (Van den Heuvel, Demerouti, Bakker, & Schaufeli, 2010). This definition diverts from other definitions of adaptive performance that try to define a behavioral taxonomy (Pulakos et al., 2000) by letting the content of adaptive performance depend on the specific situation. The new behavior that employees are expected to demonstrate, their adaptive performance, is ultimately the positive organizational outcome that is desired in organizational change. As stated before, positive, malleable personal variables such as attitudes (Lines, 2005) are associated with organizational outcomes (Mount et al., 2006). Since adaptive performance is a relatively new construct, not much is known about its antecedents. However, Armenakis et al. (1993) suggested that readiness to change predicts behaviors of accepting change. Given the previously discussed similarity of readiness to change with willingness, however, we can expect that willingness to change leads to the positive organizational outcome of adaptive performance. Therefore, hypothesis 3a is formulated as: *Willingness to change will be positively associated with adaptive performance* (H3a).

As previously discussed, there is evidence that job crafting is associated with positive organizational outcomes (Crant, 1995; Parker, 1998), such as work engagement. Adaptive performance is also a positive organizational outcome in the change process. It is therefore reasonable to assume that positive change behavior as resources-seeking is also associated

with adaptive performance. We formulate hypothesis 3c as: *Resources-seeking will be positively associated with adaptive performance* (H3c).

Resources-seeking as a mediator

As previously discussed, it can be expected that willingness to change is associated with adaptive performance (Lines, 2005; Mount et al., 2006). Additionally, it has been shown that positive change attitudes (e.g. willingness to change) and change behavior, (e.g. job crafting; Elias, 2009; Lines, 2005; Lyons, 2008) are related. Furthermore, it has been reasoned that there is a relationship between resources-seeking and the positive outcome of adaptive performance (Crant, 1995; Parker, 1998). As stated above, resources seeking has not been tested yet as a mediator. Hypothesis 3d thus explores the option that resources-seeking mediates the relationship between willingness to change and the second positive organizational outcome in this study: *Resources-seeking partially mediates the relationship between willingness to change and adaptive performance* (H3d).

Method

Procedure and Sample

The measured constructs were part of a comprehensive online-survey assessing roughly 250 items on work-related well-being, JD-R, and perception of change and the change context. In this paper, five of the measured constructs are analyzed (participation, willingness to change, job crafting, work engagement, and adaptive performance). Possible respondents were approached via a newsletter sent out from a large Dutch training and consulting company which is sent to a total of 114,593 e-mail addresses. The general topic of the newsletter advertising the questionnaire was organizational change. Only those individuals who were dealing with change at their workplace could participate. To increase motivation to participate, respondents received a personal feedback report directly after completing the questionnaire. The automated document compared the participant's score on several constructs to database benchmarks. Within four weeks, the survey was started by 2280 respondents who indicated to have to deal with change and completed by 786 respondents. After the elimination of errors in the data, 665 participants were included for further analyses. Basing the response rate on the number of individuals who started the survey, this amounts to a response rate of 29%. One possible reason for this somewhat low response rate is the length of the survey.

The sample was thus made up of 665 Dutch employees from different industry sectors, including the educational, the IT, and financial sector, as well as the healthcare sector and the government. 282 men (42.4) and 208 women (57.6%) were included in the

sample. About one third of the participants (37%) indicated to be in a managerial role. 80% of the respondents worked 30 or more hours per week, with 41.4% working full time (meaning 36 or more hours per week). The mean age was 47, with a standard deviation of 8.689. While all levels of education – from lower vocational school graduates to university graduates – were represented in the study, more than 65% of the participants had completed a college or university education. The changes that the participants had to deal with encompassed various different occurrences, such as working with new technologies, materials, or services, new tasks, working with new processes to complete familiar tasks, as well as working on another location or having a new manager. The impact of the changes on the daily work of the participants was quite large, as can be seen from Table 1. On a scale ranging from 1 ("I barely notice the change") to 10 ("I notice the change on a daily basis") participants on average chose an 8 ($\mu = 8.16$, $SD = 2.00$).

Table 1.

Frequencies and percentages of the ratings of the level of impact the change had on the participants (N=665).

Rating	1	2	3	4	5	6	7	8	9	10
Frequency	6	10	12	18	32	0	122	153	68	244
Percent	.9	1.5	1.8	2.7	4.8	0	18.3	23.0	10.2	36.7

Measures

The change resource examined in this study is participation. *Participation* was measured with 5 items adapted from Wanberg and Banas (2000). Two out of the five items are "I have/had some influence on the planned changes." and "I have/had the possibility to voice my opinion concerning the implementation of the changes." Responses could be made on a 6-point scale, ranging from 1 (*completely disagree*) to 6 (*completely agree*). The reliability (internal consistency) of the scales was established measuring Cronbach's Alpha. Cronbach's Alpha for the participation scale was .90, which can be considered excellent, according to the norms of the European Federation of Psychologists's Associations (EFPA, 2005).

The respondents' change attitude, or their *willingness to change*, was measured with and adapted version of Metselaar's willingness to change items (1997). The scale was originally focused on middle management. The adaptations were made so that the items could be used for employees on different levels in an organization. An example item is "I am willing to commit myself to making the changes a success." Answers could be given on a 5-point scale with answers ranging from 1 *(completely disagree)* to 5 *(completely agree)*. The

reliability for willingness to change was .88, which, according to the EFPA norms can be considered good.

The respondents' *change behavior*, thus the aspect of job crafting that deals with in specific the actions respondents undertook to increase their structural and social resources was assessed using the 'resources seeking' dimension of Tims, Bakker and Derks (2010, manuscript submitted) Job Crafting Behavior Scale. In total, 10 items were measured. Example items are "I make sure to make the best possible use of my capacities" and "I ask my boss to coach me." Responses could be given on a 5-point scale with answers ranging from 1 (*never*) to 5 (*very often*). Cronbach's Alpha for job crafting reached a good .83.

Work engagement was measured with the shortened version of the Utrecht Work Engagement Scales (UWES) from Schaufeli, Bakker, and Salanova (2006). Each of the three facets of work engagement (vigor, dedication, and absorption) was measured with three items. An example item for the facet of vigor is "At my work, I feel bursting with energy." Dedication was amongst others measured with "I am enthusiastic about my job.", while an example item for absorption is "I feel happy when I am working intensely." Responses could be made on a 7-point scale, ranging from 0 (*never*) to 6 (*always*). The three scales of the outcome variable work engagement all reached good (.89 (vigor), .86 (absorption)) or excellent (.93 (dedication)) internal consistencies.

Adaptive performance was assessed with 4 questions such as "How often did you comply with the new ways of working?" Answer could be given on a 7-point scale with answer options ranging from 1 (*never*) to 7 (*always*). Because the internal consistency was only adequate with a Cronbach's Alpha of .78, the item that fitted least with the rest of the scale was removed ("How often did you have to fall back on old ways of working/technology?"), leaving three questions. The internal consistency of the shortened adaptive performance scale reached a Cronbach's Alpha of .84, which, according to the EFPA-norm (2005) can be considered good.

Strategy of Analysis

The hypotheses in this paper were built according to the preconditions of mediation according to Baron & Kenny (1986). Baron & Kenny (1986) elaborated that only if a set of variables exhibits all of the following qualities, we can say a variable functions as a mediator: a) the predictor is related to the proposed mediator, b) the proposed mediator is related to the outcome variable, and c) the relationship between the predictor and the outcome variable is decreased (partial mediation) or completely eliminated and becomes insignificant (full mediation) when the hypothesized mediator is included (Baron & Kenny, 1986). For this research this means that only when hypotheses a - c are supported, can the 'mediation hypotheses' (H1d: Willingness to change partially mediates the relationship between participation and resources-seeking; H2d: Resources-seeking mediates the relationship

between willingness to change and work engagement; H3d: Resources-seeking mediates the relationship between willingness to change and adaptive performance) be found to hold true.

Results

Descriptive statistics

In order to examine the relationships between the variables, Pearson's correlation coefficients were calculated. All of the variables correlate with each other (all of the correlations are significant at the .01 level). The reliability and correlations amongst the variables are represented in table 2, in addition to their means, and standard deviations.

Statistical analysis

In order to test the hypotheses, standard linear regression analyses were conducted. Doing this, the steps of Baron and Kenny (1986) to establish whether a variable mediates the relationship between two other variables were followed. Following the regression analysis, the Sobel z-test (Preacher & Hayes, 1994) was applied for all relationships to test whether the decrease of the direct effect can be attributed to the mediation.

Table 2.

Descriptive statistics and correlations of the examined variables (N=665).

		M	SD	1	2	3	4	5
1	Participation	3.82	1.34	-				
2	Willingness to change	4.05	.57	.38**	-			
3	Job crafting	3.10	.57	.33**	.43**	-		
4	Work engagement	3.65	1.10	.35**	.40**	.57**	-	
5	Adaptive Performance	4.93	1.08	.16**	.32**	.30**	.27**	-

** $p < .01$.

Mediation of willingness to change

In order to test hypothesis 1b, the relationship between the predictor participation and the outcome variable job crafting was examined. The results showed that participation was related to job crafting ($\beta = .33$; $p < .01$). Hypothesis 1a was therefore confirmed. Next, the relationship between participation and the hypothesized mediator willingness to change was tested. As hypothesized, they were positively associated with each other ($\beta = .37$, $p < .01$), thus supporting hypothesis 1b. In order to test hypothesis 1c, a linear regression analysis was done for the mediator variable willingness to change and the outcome variable of job

crafting. The results confirmed a relationship between those variables (β=.36, *p* <.01), thus supporting hypothesis 1c. Hypothesis 1d stated that willingness to change partially mediates the relationship between participation and job crafting. When willingness to change was included in the relationship between participation and job crafting, the strength of the relationship was reduced to β =.19 (*p* <.01) as can be seen in table 3. To test whether the reduction of the direct effect was due to the respondents' willingness to change, the Sobel-test was conducted. The Sobel test revealed that this reduction was indeed significant (z = 6.46, *p* <.01). Hypothesis 1d was thus supported.

Table 3
Testing the mediating effect of willingness to change

	Job crafting			
	B	SD	*β*	R^2
Step 1				.11**
Participation	.14**	.02**	.33**	
Step 2				.22**
Participation	.08**	.02**	.19**	
Willingness to change	.36**	.04**	.36**	

Note: ** *p* = .01 significance level (2-tailed)

Mediation of job crafting (work engagement)

Hypothesis 2a was tested by examining the relationship between the attitude of willingness to change and the outcome variable of work engagement. A significant relationship (β = .40, *p* < .01) was found, thus supporting hypothesis 2a. Hypothesis 2b, stating that willingness to change is related to the hypothesized mediator of job crafting, was also supported, as regression analysis showed (β = .43, *p* < .01). Hypothesis 2c that expected the behavior of job crafting to be positively associated with work engagement could also be confirmed, (β = .49, p <.01). The last remaining hypothesis that needed to be examined in this constellation was hypothesis 2d, stating that the behavior of job crafting partially mediates the relationship between willingness to change and work engagement. In order to support the hypothesis, the relationship between the predictor (willingness to change) and the outcome variable (work engagement) had to decrease when the hypothesized mediator of job crafting was included. As can be seen in table 4, this was found to be the case. The relationship between willingness to change and work engagement dropped to β = .19 (*p* <.01) at the inclusion of the proactive behavior of job crafting. This effect was found to be significant by the Sobel-test (z = 9.28, *p* <.01), thus confirming the hypothesis of mediation.

Table 4
Testing the mediating effect of job crafting

	Work engagement			
	B	SD	*β*	R^2
Step 1				.16**
Willingness to change	.77**	.07**	.40**	
Step 2				.36**
Willingness to change	.37**	.07**	.19**	
Job crafting	.94**	.07**	.49**	

Note: ** p = .01 significance level (2-tailed)

Mediation of job crafting (adaptive performance)

In order to examine the last process, hypothesis 3a had to be tested. The regression analysis showed that willingness to change was indeed significantly related to adaptive performance (β = .32, p < .01). Hypothesis 3a was thus supported. Hypothesis 3b did not have to be tested anymore and was directly supported, as it is the same as hypothesis 2b, which has already been confirmed. Linear regression analysis showed a significant relationship of the hypothesized mediator (job crafting) with adaptive performance (β = .20 p < .01). This confirmed hypothesis 3c. Hypothesis 3d stated that the proactive behavior of job crafting mediates the relationship between the attitude of willingness to change and the outcome variable of adaptive performance. Table 4 shows that when job crafting was included in the relationship between willingness to change and adaptive performance, the magnitude of the relationship was significantly reduced to β = .23 (p < .01). The Sobel-test showed that this mediation was significant (z = 4.51, p < .01). Hypothesis 3d was thus supported.

Table 4
Testing the mediating effect of job crafting

	Adaptive performance			
	B	SD	*β*	R^2
Step 1				.10**
Willingness to change	.60**	.07**	.32**	
Step 2				.13**
Willingness to change	.44**	.08**	.23**	
Job crafting	.37**	.08**	.20**	

Note: ** p = .01 significance level (2-tailed)

Discussion

This paper aimed at increasing the knowledge of the process that links job resources with positive organizational outcomes in a change context. The first finding was that participation is associated with job crafting. Individuals who can participate in the organizational change by voicing their opinion or by exerting influence in another way showed higher levels of job crafting. Participating employees thus actively search for

additional resources. This is in line with Hobfoll's (2002) conservation of resources theory that expects resources to lead to the creation of even more resources. We also showed that participation and willingness to change are positively associated. This means that a person who can participate in the change process is more likely to see the change in a positive way and show a positive disposition towards accepting the change. This is consistent with previous research. A possible explanation for why those variables are related was offered by Lines (2005) who stated that attitudes of individuals are influenced by those of other members of the organization. By participating actively in the change process, organization members interact closely and are likely to exchange information on the change. The exchange of information – both positive and negative – has been shown to be associated with forming positive attitudes (Lines, 2005). Furthermore, we found willingness to change to be associated with job crafting, meaning that individuals with a positive change attitude actively try to increase their structural and social resources. This is in line with the suggestion of Elias (2009) and Lines (2005) who theorized that individuals possessing a strong and positive attitude towards a change are more likely to exert behavior supporting the change. Furthermore, we found that the relationship between change resources and job crafting is mediated by willingness to change. The entire first process was therefore supported by the data.

The second process examined the relationship between willingness to change, job crafting and work engagement as one possible positive organizational outcome. Willingness to change and work engagement were found to be positively associated with one another. Individuals reporting higher levels of willingness to change also indicated to be more engaged than their counterparts with a less positive change attitude. One possible explanation for this is that employees who are willing to change actually behave accordingly and experience less dissonance between actual and desired behavior. In this sample, job crafting was positively associated with work engagement. Individuals who actively seek structural and social resources are more engaged than their counterparts who engage less in resources seeking. This might be the case because individuals who actively seek resources are likely to receive more resources. An employee asking his superior for feedback and support is more likely to receive them than an employee not asking. Both feedback and support, in turn, are resources again, which are related to work engagement (Hakanen et al., 2006; Schaufeli & Bakker, 2004). Most importantly, we found that job crafting partially mediated the relationship between willingness to change and work engagement. Resources seeking, therefore, accounts for part of the relationship between willingness to change and work engagement. This establishes job crafting as a mediator. Process 2 was thus affirmed, as well.

Process 3 tested the association of change attitude, job crafting and adaptive performance. We found that willingness to change was not only associated with the positive outcome of work engagement, but also with the other outcome variable examined in this study: adaptive performance. This is evidence that attitude and positive organizational outcomes are indeed related as the literature on this topic had suggested (Armenakis et al., 1993; Mount et al., 2006). Additionally, in this sample, job crafting and adaptive performance were associated with one another. Literature had identified proactive behavior as a predictor of positive organizational outcomes (Crant, 1995; Parker, 1998) and the results show that this holds true for job crafting and adaptive performance. This means that employees who actively seek to enhance their structural and social resources perform more in line with the change than their counterparts that do not seek additional resources. The last and most important result of process 3 showed that job crafting functioned as a mediator between willingness to change and adaptive performance. Job crafting was thus found to act as a mediator between willingness to change and both positive organizational outcomes examined in this study.

All of the hypothesized relationships and processes were supported by the data. Both attitude towards change and change behavior function as mediators in the relationship between change resources and positive organizational outcomes. Whilst all of the hypotheses are supported, it is important to remember that only partial mediations were expected. This means that there are potentially many other variables that influence the formation of attitudes and behaviors and mediate the process between change resources and desirable organizational outcomes. It also means that there is a direct effect left that might not be explained by other mediators. It will be up to future research to determine what those factors are, and how influential they are.

Contribution of this paper

The study at hand contributes to the literature on the JD-R model in various ways. It once more gives evidence for the motivational process linking job resources with positive organizational outcomes. Moreover, it tested the JD-R model in a context of change. The collected data affirms the advice given in hands-on literature on organizational change. Cummings and Worley (2008), for example, emphasize the many ways that can encourage employees to participate in and commit to change. Furthermore, job crafting was for the first time found to function as a mediator. Last but not least, the results shed light on the process that links job resources with positive organizational outcomes. The data suggests that both a positive change attitude and proactive change behavior are important factors that predict positive organizational outcomes.

Limitations of the study and suggestions for future research

One general limitation of this study results from it being cross-sectional. This kind of research does not allow for causal inferences. All the variables where measured at the same time and there was no control group. This means that the findings are strictly correlational. While the arrows in the research model suggest each variable predicts the variable on its right, the relationship is likely to be reciprocal. Hakanen, Perhoniemi, and Toppinen-Tanner (2008) found, e.g., reciprocal relationships between job resources and work engagement. There is also evidence that behavior influences the formation of attitudes (Quinn, 1998). However, the findings of this study taken together with the foundation on previous research and theory building can provide a point of departure for longitudinal research.

The sample was diverse and included employees from various sectors, layers, and functions, as well as various types of organizational change. However, this study did not control for those variables. Future research might investigate what the impact of the different types of organizational change is and whether possible differences in impact lead to different results than reported in this paper. Also, it could be examined whether e.g. the participants' different level of education, the type of the organization, or the work experience moderate the relationships found in this study.

The questions on adaptive performance (e.g. "How often did you comply with the new ways of working?" implied that the individuals had a choice whether or not to behave in compliance with the change. However, while this might often be the case, this does not apply to all changes (e.g. machines, new computer programs, or strict control). Therefore, future research should tailor the measurement on adaptive performance to the specific change in question.

Another limitation of this study is the reliance purely on self-report measures. This could potentially lead to a mono-method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) as participants might, for example, try to be seen in a more positive light. In addition to the much needed longitudinal research, the study may be replicated with methods making use of other-report measures that make use of sources of information other than the individual itself, such as supervisor ratings or ratings from colleagues.

While this study focused on the positive effects of job crafting, the concept itself is neither positive negative. In this case, participation was associated with resources-seeking. However, if it is not possible for individuals to actively participate in change, job crafting might still occur – in this case though by means of incorporating ways to sabotage the change, such as striking or sticking to the old ways of working whenever possible. Future research could therefore examine the effects of non-participation on resources-seeking

In 2004, Pierce and Gardner found the personal resource of organizational-based-self-esteem to mediate the relationship of job resources and employee motivation and

performance (Pierce & Gardner, 2004). More recently, Xanthopoulou et al. (2007) conducted a study whose results confirmed that the link between job resources and positive organizational outcomes can be further explained with personal resources as a mediator. The JD-R model was thus expanded to include personal resources, as well. In this paper, only the contextual change resource participation was included. The challenge for further research is to test more change resources such as communication, information, and inspiring leadership as well as personal resources, since they are likely to explain more of the variance in the motivational process of the JD-R model.

In addition, the association with other organizational outcomes could be analyzed. Especially interesting could be the relationship of change resources with organizational level performance measures such as financial results. When the benefit of certain resources can be expressed in financial terms, HR managers will have better leverage to convince management that the provision of resources is not only a cost factor but will directly benefit the organization in return.

Practical implications

This study shows that the participation of employees in organizational change does play a role in the motivational process connecting job resources with positive organizational outcomes. Participation is also associated with a positive change attitude as well as with positive change behavior. While it is difficult to directly influence attitude or behavior, there are numerous ways and strategies to stimulate the participation in organizational change (for an overview and description of interventions, see Cummings and Worley, 2008), such as parallel structures (Bushe & Shani, 1990), total quality management (Juran, 1974), and high-involvement designs (Lawler, 1982). Encouraging and allowing employees to participate in organizational change might therefore be an effective way to enhance a positive change attitude and – both directly and indirectly - positive change behavior, as well as positive organizational outcomes.

Conclusion

Organizations need healthy employees who are open to necessary organizational changes in order to remain competitive. The change resource participation was found to be associated with the two positive organizational outcomes of work engagement and adaptive performance via willingness to change and job crafting. Employees who can participate in the organizational change thus actively display the new behaviors that go hand in hand with the change in question as compared to employees who do not participate. Also, they are more likely to be engaged, which means they are more likely to be motivated, work hard, and love their job. Amongst the secondary effects of work engagement are good performance

(Xanthopoulou et al., 2009) and employee well-being (Lawler & Ledford, 1982). Since the found mediations were only partial, there are still numerous possible change resources, mediators, and positive organizational outcomes left to be examined. However, this study has contributed to the field by showing that the JD-R model holds true in a context of change. Last but not least, this study has found evidence for what practitioners long expected: that participation can be a valuable tool in streamlining an organization for necessary change and thus success.

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