

Job crafting among health care professionals: The role of work engagement

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Aim: The aim of this study was to examine the impact of job crafting on the quality of the work environment of health care professionals.

Background: Job crafting refers to proactive behavior aimed at optimizing the fit between person and job. Using job demands-resources theory, we hypothesized that job crafting would be positively related to job resources and person-organisation fit, and negatively to hindrance demands. Furthermore, we hypothesized that these relationships would be qualified by work engagement.

Methods: A total of 5,272 health care professionals from one of 35 different organisations filled out an electronic questionnaire (response is 55%). Regression analyses were used to test hypotheses.

Results: Consistent with hypotheses, job crafting in the form of increasing job resources was positively related to opportunities for development, performance feedback and P-O fit; and negatively related to hindrance job demands – particularly when work engagement was high.

Conclusions: The combination of job crafting and work engagement is important for the realization of a resourceful work environment and fit between person and organisation.

Implications for nursing management: Interventions aimed at fostering job crafting should be tailored to the motivation of health care professionals.

KEYWORDS

COR-theory, JD-R theory, job crafting, nursing, work engagement

1 | INTRODUCTION

Although leadership may have an important impact on employee work engagement and job performance, it is evident that leaders are not always available to provide support, coaching, and feedback to their followers (Breevaart et al., 2014). This implies that workers also need self-leadership: they should also set goals for themselves and mobilize their own job resources. This behaviour is known as job crafting – the proactive behaviour of employees aimed at optimizing the fit between personal abilities/preferences and the job (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). Recent studies have shown that job crafting is positively related to work engagement, job satisfaction and job performance (Petrou, Demerouti, Peeters, Schaufeli, &

Hetland, 2012; Tims, Bakker, & Derks, 2013). Job crafting is particularly interesting for health care organisations because it can be learned and effectively transferred from training to organisational practice (e.g. Van Wingerden, Bakker, & Derks, 2016).

The present study among a large sample of health care professionals investigates how job crafting relates to (increased) job resources and to (reduced) hindrance job demands. We chose to study health care professionals because well-designed work environments are not only important for doctors and nurses, but may indirectly also affect their patients (Prins et al., 2009). Particularly in this sector it is crucial to ensure occupational health. On the basis of job demands-resources (JD-R) theory, it is expected that job crafting will coincide with a resourceful work environment. Furthermore, integrating conservation of

resources (COR) and JD-R theories, it is predicted that job crafting is most likely to relate to P-O fit and other positive outcomes when work engagement is high. This study contributes to the literature by testing one of the main propositions of the extended JD-R theory (Bakker, 2011; Bakker & Demerouti, 2014), namely that job crafting facilitates job resources and reduces hindrance job demands. Such a finding would also be highly relevant from a practical perspective, because it would indicate how health care professionals and their supervisors may optimize the work environment and indirectly improve occupational well-being and job performance (e.g., Tims et al., 2013). In addition, we test a core assumption of COR-theory, namely that those who have more energetic resources (i.e., work engagement), are most likely to invest in these resources, and to mobilize new job resources. Thus, we integrate JD-R and COR theories in order to improve the predictive power of job crafting. Finally, we aim to expand the job crafting literature by investigating an important correlate of this proactive behaviour at work, namely Person-Organisation fit.

2 | THEORETICAL BACKGROUND

The JD-R model was originally developed to predict job burnout – the state of chronic fatigue and a cynical attitude towards work (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). During the past 15 years, the model has resulted in a theory that is able to predict all types of occupational well-being, as well as a range of organisational behaviours and outcomes. At the heart of JD-R theory lies the assumption that every organisation can be characterized using two sets of job characteristics, namely job demands and resources. Job demands are aspects of the job that require considerable energy investment, such as workload and complex tasks (challenging job demands), as well as bureaucracy and role ambiguity (hindrance job demands) (LePine, Podsakoff, & LePine, 2005). In contrast, job resources are aspects of the job that have motivational potential, help to reach organisational goals, and can be used to deal with job demands (Bakker, 2011). Examples of job resources are opportunities for development at work and performance feedback.

JD-R theory further proposes that job demands and job resources initiate two independent processes, namely a health-impairment process and a motivational process, respectively. Thus, if job demands are consistently high, workers become overly exhausted and start to experience health problems that undermine effective functioning. In contrast, job resources facilitate work engagement and motivation, and have a positive indirect impact on work behaviours and job performance. In addition to these dual processes, JD-R theory proposes that job demands and resources have a combined effect. The buffer hypothesis states that job resources such as social support, autonomy and feedback may weaken (i.e., buffer) the link between job demands and job strain. The boosting hypothesis states that (challenge) job demands strengthen (i.e., boost) the link between job resources and motivation.

Research in Europe and elsewhere has produced considerable evidence for these job demands * resources interaction effects (e.g.,

Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Bakker, Van Veldhoven, & Xanthopoulou, 2010; Chrisopoulos, Dollard, Winefield, & Dormann, 2010; Rattrie & Kittler, 2014). Since occupational well-being is an important predictor of organisational performance, JD-R theory has gained ample attention from scholars to practitioners. The JD-R model offers insight to the most important job demands and resources that may play a role in organisations, and that can consequently be targeted in interventions (Bakker & Demerouti, 2014, 2017). In recent years, JD-R researchers have started to investigate the role of job crafting in JD-R theory, to which we will turn now.

2.1 | Job crafting in the JD-R model

Job crafting expands traditional approaches of job design to include proactive changes that employees make to their own jobs (Wrzesniewski, LoBuglio, Dutton, & Berg, 2013). Specifically, 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). Accordingly, employees may change how work is conceptualized and carried out (i.e., changing task boundaries), how often and with whom they interact at work (i.e., changing relationship boundaries), and how they cognitively ascribe meaning and significance to their work (i.e., changing meaning) (Tims & Bakker, 2010, p. 3).

Tims et al. (2013) studied job crafting from the perspective of JD-R theory. Accordingly, job crafting refers to proactive employee behaviours that aim at (1) increasing social and structural job resources; (2) increasing challenging job demands; and (3) decreasing hindrance job demands. Research among employees in various types of jobs has shown that job crafting in the form of increasing job resources and increasing job challenges leads to positive emotions, elevated levels of work engagement and improved task performance and creativity, among others (e.g., Petrou et al., 2012; Tims, Bakker, & Derks, 2014; Tims et al., 2013; Van Wingerden et al., 2016). However, job crafting in the form of decreasing hindrance job demands is not consistently related to improved well-being and performance (Demerouti, Bakker, & Halbesleben, 2015). It seems that decreasing hindrance job demands is a job crafting strategy that is practised when employees are at risk of job burnout; however, decreasing job demands does not facilitate work engagement. In the present study, we focus on job crafting in the form of increasing job resources. Thus, we focus on the proactive behavior of asking for feedback and support, and creating or seeking autonomy and opportunities for development.

2.2 | Integrating a basic COR premise in JD-R theory

Conservation of resources (COR) theory (Hobfoll, 1989) was originally developed to explain how people respond to major stress. A central assumption of COR theory is that even when individuals do not experience stress, they are motivated to obtain, retain and protect their resources. Hobfoll practises the term ‘resources’ somewhat broadly to refer to a range of personal, social and material resources that can be used to deal with threats in various life

domains. An interesting principle proposed by COR-theory and that will be tested in the present study is the principle of resource investment. Accordingly, employees must invest resources in order to protect against resource loss, and to gain new resources (Chen, Westman, & Hobfoll, 2015).

Resources aid the process of growth and adaptation, because 'initial resource gain begets future gain, thus generating "gain spirals"' (Chen et al., 2015; p. 97). When initial gains are made, more resources become available, which may further be used to gain new resources. Hakanen, Perhoniemi, and Toppinen-Tanner (2008) found evidence for such a process in a study among Finnish dentists. Their findings showed that job resources indicative of skill variety and performance feedback led to increased work engagement, which, in turn, led to greater personal initiative and innovative behavior. Consequently, innovative behavior predicted increased job resources over time, suggesting a gain spiral of resource investment. In a similar vein, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009) found in their longitudinal study among Dutch technicians that job resources predicted personal resources and work engagement, which further spiralled and predicted future job and personal resources.

3 | THE PRESENT STUDY

In the present study, we investigate how proactively mobilizing job resources (job crafting) helps health care professionals to gain resources and to reduce hindrance job demands. On the basis of JD-R theory (Bakker & Demerouti, 2014), we argue that job crafting is positively related to job resources (opportunities for development and performance feedback). Job crafting implies that nurses and doctors take the initiative to ask for support, feedback and training. The sheer act of engaging in job crafting may foster the perception that one is able to control the work environment, and achieve one's goals, i.e., reach self-efficacy (Van den Heuvel, Demerouti, & Peeters, 2015; Van Wingerden et al., 2016). If successful, job crafting optimizes the objective work environment in terms of an increase in available job resources (Tims & Bakker, 2010), and there is indeed evidence for this effect (Tims et al., 2013; Van Wingerden et al., 2016).

We expand previous research using COR-theory and claim that work engagement is needed to successfully use job crafting as a strategy to increase job resources. Work engagement refers to an affective-motivational state of vigour, dedication and absorption (Schaufeli & Bakker, 2010). Engaged employees are full of energy and passionate about their work. Engaged workers are often so enthusiastic about their work that they get completely immersed into it – they forget about time and their immediate work environment. The energy and enthusiasm that is characteristic of engagement will function as energetic resources that help health care professionals to mobilize new resources in their work environment. Indeed, Van Woerkom, Oerlemans, and Bakker (2016) found that engineers were more proactive in the weeks they were highly engaged in their work. Engagement will most likely also help job crafters to convince their colleagues that they should provide resources.

Furthermore, previous research has shown that work engagement crosses over between colleagues and improves their performance. For example, Bakker and Xanthopoulou (2009) showed that employees who regularly communicate at work influence each other's levels of vigour, dedication and absorption. In a similar vein, Bakker, Van Emmerik, and Euwema (2006) have shown that work engagement is contagious in work teams, and is transferred from one team member to the other. Since engagement has also been related to organisational citizenship behaviour (Christian, Garza, & Slaughter, 2011), it can be argued that individuals who are exposed to engaged employees who seek resources will also become engaged and will be inclined to provide help, support and feedback. Social exchange theory proposes that cooperation in social relationships at work is based on the norm of reciprocity (Blau, 1964; Gouldner, 1960), which means that cooperative behaviour of one person will be responded to by a cooperative move of the other (see also, Christian et al., 2011; Saks, 2006). This implies that health care professionals will reciprocate the help and solidarity received from their engaged colleagues who are seeking job resources (i.e., job crafting). Thus, work engagement will help nurses and doctors to succeed in their job crafting actions.

Hypothesis 1: Job crafting and engagement have an interaction effect on job resources ((1) opportunities for development and (2) performance feedback). Specifically, job crafting is more positively related to job resources when work engagement is high vs. low.

We further investigate how proactively mobilizing job resources (job crafting) helps nurses and doctors to reduce their hindrance job demands. Note that this differs from Tims et al.'s (2013) analysis that investigated how job crafting in the form of decreasing hindrance job demands (not increasing job resources) was related to hindrance demands. Although JD-R theory does not explain the direct link between (crafting) job resources and job demands, using COR-theory (Chen et al., 2015; Hobfoll, 1989), it can be argued that proactively increasing job resources will help to reduce hindrance job demands. COR theory generally proposes that resource gain is most essential when job stress is high. By actively seeking performance feedback, health care professionals will reduce their perceived role ambiguity, because the feedback will inform them about what is expected at work. Additionally, the instrumental support and coaching that is the consequence of job crafting in the form of increasing job resources will help nurses and doctors deal with bureaucracy problems. This will be particularly true when the level of work engagement is high, because engagement offers the ability, motivation and persistence to make the job crafting attempt successful (Bakker & Demerouti, 2014). Moreover, job crafting theory (Tims & Bakker, 2010) and the argument above imply that proactively optimizing one's work environment leads to a better fit between the person and the organisation (i.e., P-O fit) – particularly when work engagement is high. The P-O fit refers to the situation where a person's abilities and preferences are aligned with the organisational demands. Thus, we predict (see Figure 1 for an overview of the hypotheses):

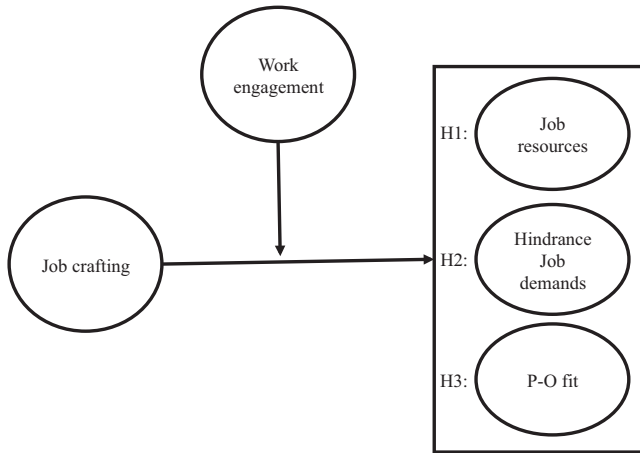


FIGURE 1 Hypothesized job crafting model

Hypothesis 2: Job crafting and engagement have an interaction effect on hindrance job demands ((1) role ambiguity and (2) bureaucracy). Specifically, job crafting is more negatively related to hindrance job demands when work engagement is high vs. low.

Hypothesis 3: Job crafting and engagement have an interaction effect on P-O fit. Specifically, job crafting is more positively related to P-O fit when work engagement is high vs. low.

4 | METHOD

4.1 | Participants and procedure

The present study was conducted in collaboration with a company for personal training and development, and a personnel recruitment company – both located in the Netherlands. The University Research Ethics Committee approved the study. Organisations were recruited through a national campaign ('Care for Health Care') in newspapers, on websites, and through the client base of the two human resources companies. Health care organisations could participate for free. Representatives of the participating organisations contacted the human resource companies, with whom we collaborated to disseminate the questionnaire.

The central proposition was that health care organisations should monitor their employees' levels of job demands and resources, as well as their levels of work engagement. The management of 35 different health care organisations agreed to participate in the study. A total of 5,272 health care professionals filled out the questionnaire, resulting in a response rate of 55%. Approximately 78% of the sample was nurse, including various specialties such as general nurses, intensive care nurses, emergency room nurses, home care nurses, nurse practitioners, etc. Approximately 22% was doctor or (medical) specialist, again including various specialties, such as cardiologists, genealogists, neurosurgeons, oncologists, general practitioners, psychologists and physiotherapists; the vast majority of the sample was

female (85%), and the sample included all age categories: <30 years (14.1%), 30–40 years (20.1%), 41–50 (27.5%), >50 years (29.3%), missing (9.0%). In terms of educational level, 26.3% completed high school, 33.2% basic vocational education, 31.0% higher vocational training and 9.0% held a university degree (0.5% missing). The majority of the participants (84.5%) had a steady contract with their organisation.

4.2 | Measures

The validity and reliability of the instruments used in this study was established before the current study. Specifically, all the scales used proved to be reliable and valid in previous research. For example, Tims, Bakker, and Derks (2012) validated the job crafting scales. In addition, all the job demands, resources and the P-O fit measures have been tested for psychometric qualities in previous studies (e.g., Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Xanthopoulou et al., 2007).

Job crafting was measured with the two-five-item scales from the job crafting scale (Tims et al., 2012) that are indicative of increasing structural job resources and social job resources. Example items are, 'I ask others for feedback on my job performance', 'I try to develop my capabilities', and 'I ask colleagues for advice'. Participants could respond to these items with answer categories ranging from 1 = never to 5 = very often. The reliability of the job crafting index in which all items were summed was acceptable in the present study, Cronbach's alpha = .79.

Work engagement was assessed with the nine-item version of the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2010). Example items are: 'At my job I feel strong and vigorous' (vigour), 'I am enthusiastic about my job' (dedication), and 'I am immersed in my work' (absorption). All items were scored on a seven-point rating scale ranging from 0 ('never') to 6 ('always'). Although confirmatory factor analyses have supported the three-dimensional structure of the UWES, the dimensions are very closely related. We therefore created one overall score for work engagement. Cronbach's alpha = .92.

Job resources. The questionnaire included two job resources, namely opportunities for professional development and performance feedback. Both scales were operationalized with three items.

Opportunities for professional development was measured with the scale of Bakker et al. (2003), including 'My work offers me the opportunity to learn new things', and 'I have sufficient possibilities to develop myself at work' (1 = totally disagree, 5 = totally agree). Cronbach's alpha = .88.

Performance feedback was assessed with items based on Karasek's (1985) job content instrument. For example: 'I receive information from my supervisor about how well I do my job' (1 = never, 5 = always). Cronbach's alpha = .74.

Hindrance job demands. Two hindrance job demands were included in the questionnaire, namely role ambiguity and bureaucratic problems. Role ambiguity was assessed with a five-item scale based on Rizzo, House, and Lirtzman (1970). An example item is 'At my

work, I know exactly what is expected from me' (1 = totally disagree, 5 = totally agree; reverse-coded). Cronbach's alpha = .81. Bureaucratic problems was measured with a five-item scale that we constructed ourselves, including 'For everything we do, we need to fill out a form', and 'New ideas are frustrated by bureaucratic procedures' (1 = totally disagree, 5 = totally agree). All responses were coded such that higher scores referred to more bureaucratic problems. Cronbach's alpha = .84.

Finally, person-organisation fit was assessed with a four-item scale based on French, Caplan, and Harrison (1982). Sample items are: 'I am well able to meet the demands of my work', and 'I have sufficient knowledge and skills to carry out my work tasks properly' (1 = totally disagree, 5 = totally agree). Cronbach's alpha = .92.

5 | RESULTS

5.1 | Descriptive statistics

The means, standard deviations and correlations between the study variables are presented in Table 1.

5.2 | Hypotheses testing

Each of the hypotheses proposes that job crafting and work engagement have an interactive effect on job characteristics. Therefore, all hypotheses were tested using hierarchical linear regression. In the first step of the equation, we entered the three control variables that related consistently to the dependent variables, namely age, education, and job position. In the second step, the main effects were entered. The job crafting * work engagement interaction term was entered in the third step.

According to hypothesis 1, job crafting is more positively related to (1) opportunities for development and (2) performance feedback when work engagement is high vs. low. As can be seen in Tables 2 and 3, job crafting has a positive relationship with both resources, after controlling for age, education and job position. More important for the present analysis, job crafting and work engagement had a significant interaction effect on both job resources, after controlling for the main effects. As can be seen in Figure 2 (Panel a and b), job crafting is more positively related to both job resources when work engagement is high

than when work engagement is low. This means that hypothesis 1 is supported.

Hypothesis 2 states that job crafting is more negatively related to (1) role ambiguity and (2) bureaucratic problems when work engagement is high vs. low. The results of the hierarchical regression analyses are consistent with these hypotheses. Tables 4 and 5 show that the interaction term made a significant, although small, contribution to explaining variance in both hindrance job demands. More importantly, the interaction patterns in Figure 3 (Panel a and b) show that the crafting of job resources was only negatively related to role ambiguity and bureaucracy when work engagement was high (vs. low). Thus, hypothesis 2 is supported as well.

Finally, according to hypothesis 3, job crafting is more positively related to P-O fit when work engagement is high vs. low. The results in Table 6 and Figure 4 offer empirical support for this hypothesis. As can be seen in the table, the job crafting * engagement interaction is significant after controlling for the significant and positive main effects. Additionally, the pattern of the interaction is as predicted: job crafting relates more strongly positively to P-O fit when work engagement is high than when work engagement is low. This means that hypothesis 3 is also supported.

6 | DISCUSSION

Recent years have seen an increasing interest in the study and application of job crafting – the proactive behaviour employees use to optimize their own job demands and resources. The present survey study among a sizeable sample of health care professionals contributes to the job crafting literature by showing that the link between job crafting and possible outcomes, including P-O fit, is contingent on employee work engagement. Using JD-R and COR theories, we hypothesized and found that job crafting is most beneficial when nurses and doctors are highly engaged in their work. Engagement seems to function as an energetic resource that helps health care professionals to mobilize new job resources. Engagement also seems to enable individuals to take care of their hindrance job demands. In what follows, we will discuss the most important contributions of the present study.

TABLE 1 Means, standard deviations (SD), correlations and reliabilities (Cronbach's alpha; on the diagonal) of the study variables, $n = 5,272$

	Mean	SD	1	2	3	4	5	6	7
Men	-	-	-	-	-	-	-	-	-
1 Job crafting	3.31	0.53	(.79)	-	-	-	-	-	-
2 Work engagement	4.20	1.02	.29	(.92)	-	-	-	-	-
3 Opportunities	3.70	0.81	.30	.38	(.88)	-	-	-	-
4 Feedback	3.60	0.67	.28	.39	.58	(.74)	-	-	-
5 Role ambiguity	2.33	0.60	-.16	-.40	-.35	-.73	(.81)	-	-
6 Bureaucratic problems	2.74	0.73	-.15	-.22	-.22	-.27	.20	(.84)	-
7 P-O fit	4.21	0.58	.14	.38	.34	.46	-.50	-.22	(.92)

All correlations are significant at the $p < .01$ level.

Variable	Model 1			Model 2			Model 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Age	0.01	0.01	.01	0.00	0.01	.01	0.01	0.01	.01
Education	0.01	0.01	.02	0.03	0.01	.05***	0.03	0.01	.05***
Job position	0.20	0.02	.14***	0.13	0.02	.10***	0.13	0.02	.09***
Job crafting	-	-	-	0.14	0.01	.17***	0.14	0.01	.17***
Work engagement	-	-	-	0.27	0.01	.33***	0.28	0.01	.34***
Interaction term	-	-	-	-	-	-	0.02	0.01	.03*
R ²	.02			.19			.20		
F for change in R ²	36.06***			516.00***			4.08*		

TABLE 2 Summary of hierarchical regression analysis for variables predicting opportunities for development ($n = 5,272$)

Job crafting and work engagement were centred at their means. Interaction term = Job crafting * Work engagement.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

TABLE 3 Summary of hierarchical regression analysis for variables predicting performance feedback ($n = 5,272$)

Variable	Model 1			Model 2			Model 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Age	0.03	0.04	.04**	0.03	0.01	.04**	0.03	0.01	.04**
Education	-0.03	0.01	-.06***	-0.02	0.01	-.03*	-0.02	0.01	-.03*
Job position	0.11	0.02	.10***	0.06	0.02	.05***	0.06	0.02	.05***
Job crafting	-	-	-	0.13	0.01	.19***	0.12	0.01	.19***
Work engagement	-	-	-	0.22	0.01	.33***	0.23	0.01	.33***
Interaction term	-	-	-	-	-	-	0.02	0.01	.03*
R ²	.01			.19			.19		
F for change in R ²	20.32***			527.89***			5.60*		

Job crafting and work engagement were centred at their means. Interaction term = Job crafting * Work engagement.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

6.1 | Theoretical contributions

The results of this study show that job crafting in the form of increasing job resources is positively related to opportunities for professional development, performance feedback and P-O fit, particularly when work engagement is high (vs. low). Although the cross-sectional design of the study makes it impossible to make causal inferences, these findings are consistent with one of the main propositions in the extended JD-R theory (Bakker, 2011; Bakker & Demerouti, 2014; Tims & Bakker, 2010). Accordingly, engaged workers want to stay engaged, and therefore they invest their engagement in the mobilization of new resources. By asking for feedback and social support, and by creating their own opportunities for growth, engaged nurses and doctors proactively create a work environment that fits with their personal needs and preferences. Job crafting seems to foster the fit between the person and the environment,

particularly for those who are most likely to invest their energetic resources in this strategy (i.e., those high in work engagement).

The present findings are also consistent with the broader claim of COR-theory (Chen et al., 2015; Hobfoll, 1989) that individuals who have most (energetic) resources are most likely to mobilize new resources by investing their resources. The majority of previous studies has focused on the positive relationship between work engagement and job crafting (Bakker, Tims, & Derks, 2012; Lu, Wang, Lu, Du, & Bakker, 2014), but has ignored the possibility that engagement and job crafting may have a multiplicative impact on the work environment and P-O fit. Crafting in the form of increasing one's job resources seems much more effective when done while high in work engagement, presumably because engaged workers have a positive impact on others and are most willing to help their colleagues. Such behaviours are likely to be reciprocated,

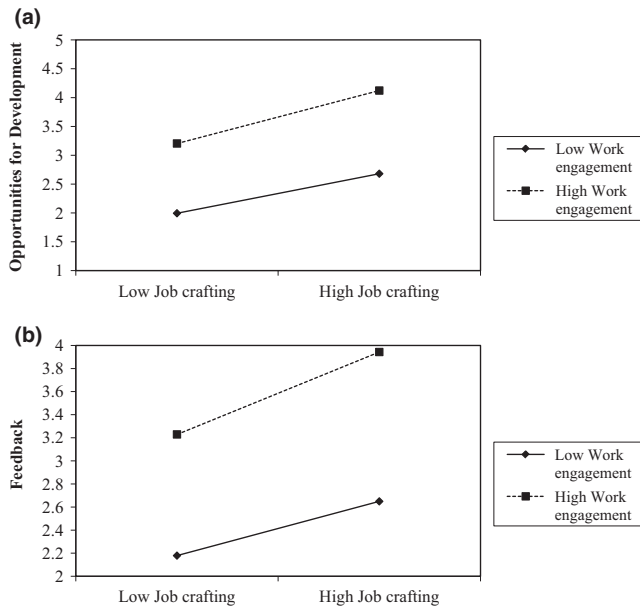


FIGURE 2 Interaction effect of job crafting and work engagement on opportunities for development (Panel a) and performance feedback (Panel b)

and therefore engaged job crafters are most likely to receive the resources they are looking for.

Consistent with COR-theory, job crafting in the form of increasing job resources was also related to reduced hindrance job demands, but only when engagement was high (not when engagement was low). According to the theory, the investment and mobilization of resources helps to deal with stressors, and this is what the current results seem to confirm. These findings also expand JD-R theory, since they show how increasing job resources may help to reduce stressful job demands – this is a relationship that is understudied in JD-R theory (Bakker & Demerouti, 2014). Importantly, this relationship was also qualified by work engagement: only highly engaged health care professionals manage to reduce their hindrance job demands by increasing their job resources.

A final contribution of the present study is that it expands the job crafting literature by uncovering important correlates of job crafting. Previous research on job crafting focused particularly on its psychological and organisational outcomes, including meaningfulness, employee work engagement, task performance, and organisational citizenship behaviours (Tims et al., 2013; Wrzesniewski et al., 2013). In line with JD-R theory, the results showed that job crafting is positively related to job resources and P-O fit, and negatively related to hindrance job demands, particularly when work engagement is high.

Taken together, the findings suggest that job crafting is linked to an optimized work environment, and that engaged health care professionals are most likely to profit from proactive job crafting efforts. These findings may also indicate that for those low in work engagement, it is hard to profit from attempts to proactively change aspects of the work environment. We propose two possible reasons: one possibility is that those low in work engagement have limited job control (see Bakker & Demerouti, 2014), and do not have the discretion to improve their working conditions. Task discretion is declining for most workers in Europe (Gallie, 2007), and thus organisations that care about employee well-being and want to empower their employees should start with the provision of structural job resources. A second possibility is that individuals low in work engagement have reached a point where they do not have the necessary energy and dedication to effectively use the job resources they mobilize (i.e., are unable to persist in an extensive training or deal with critical feedback). Future research should investigate the possible barriers and facilitators of job crafting for various groups of health care professionals.

7 | LIMITATIONS AND AVENUES FOR FUTURE RESEARCH

The current study has several strengths and limitations. Whereas our research included a large sample of health care professionals, we

TABLE 4 Summary of hierarchical regression analysis for variables predicting role ambiguity (n = 5,272)

Variable	Model 1			Model 2			Model 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Age	-0.03	0.01	-.05***	-0.02	0.01	-.03*	-0.02	0.01	-.03*
Education	0.06	0.01	.13***	0.04	0.01	.09***	0.04	0.01	.08***
Job position	-0.03	0.02	-.03*	0.00	0.01	.00	0.01	0.01	.00
Job crafting	-	-	-	-0.05	0.01	-.08***	-0.04	0.01	-.07***
Work engagement	-	-	-	-0.21	0.01	-.36***	-0.22	0.01	-.37***
Interaction term	-	-	-	-	-	-	-0.03	0.01	-.06***
R ²	.02			.17			.17		
F for change in R ²	33.07***			421.38***			17.33***		

Job crafting and work engagement were centred at their means. Interaction term = Job crafting * Work engagement.

* p < .05.
 ** p < .01,
 *** p < .001.

TABLE 5 Summary of hierarchical regression analysis for variables predicting bureaucracy problems ($n = 5,272$)

Variable	Model 1			Model 2			Model 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Age	0.02	0.01	.03 [*]	0.03	0.01	.04 ^{**}	0.03	0.01	.04 ^{**}
Education	-0.06	0.01	-.12 ^{***}	-0.08	0.01	-.15 ^{***}	-0.08	0.01	-.16 ^{***}
Job position	-0.17	0.02	-.14 ^{***}	-0.15	0.02	-.12 ^{***}	-0.15	0.02	-.12 ^{***}
Job crafting	-	-	-	-0.02	0.01	-.02	-0.01	0.01	-.02
Work engagement	-	-	-	-0.18	0.01	-.25 ^{***}	-0.19	0.01	-.25 ^{***}
Interaction term	-	-	-	-	-	-	-0.02	0.01	-.03 [*]
R^2	.04			.11			.11		
F for change in R^2	73.40 ^{***}			169.62 ^{***}			5.32 [*]		

Job crafting and work engagement were centred at their means. Interaction term = Job crafting * Work engagement.

^{*} $p < .05$.

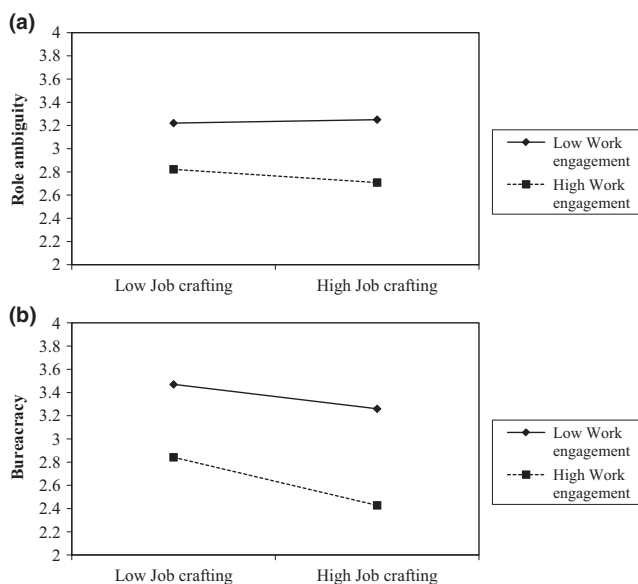
^{**} $p < .01$.

^{***} $p < .001$.

used a cross-sectional design implying that we do not have a grip on the causal direction of the relationships. We argue that nurses and doctors who engage in job crafting optimize their work environment, particularly when they are engaged. However, engagement has also been identified as an outcome of job crafting (e.g. Tims et al., 2013), suggesting that job crafting and engagement are reciprocal (cf. Bakker & Demerouti, 2014). Nevertheless, the present study suggests that the combination of job crafting and engagement is important for the realization of a resourceful work environment and fit between person and organisation. In addition, our recruitment procedure implied that we included only the organisations that were interested in the topic of 'Care for Health Care', and who had the time to do so. This means that our large sample may have been biased (Whitehead, 2007). The reason to participate in the study may have ranged from acknowledgement of health care professionals' problems (high work pressure; signals

of job stress) to acknowledgement of the importance to keep staff motivated. Since we do not have information from non-responders, we cannot compare participating organisations with non-participating organisations. However, we did have a large sample size, and we were particularly interested in relationships between variables (most notably: interaction patterns) – not in the prevalence of job characteristics and job crafting. This means that the exact composition of the sample is somewhat less important for testing the hypotheses.

Another drawback of the present study is that we limited the assessment of job crafting to 'increasing job resources'. Previous research has shown that workers also increase their challenge job demands and decrease their hindrance job demands. It remains therefore unclear whether work engagement can also strengthen the impact of these other two job crafting strategies. Whereas increasing job challenges has been shown to result in increased well-being and performance (e.g. Bakker et al., 2012), decreasing job demands has not been consistently related to well-being and performance (Demerouti & Bakker, 2014). It is conceivable that work engagement also qualifies the decreasing hindrance job demands – outcomes relationship. Work engagement offers the motivation and ability to reduce such demands as role conflict and role ambiguity, with the aim to optimize the work environment. When engagement levels are high, employees solve role problems in order to perform effectively. However, when engagement levels are low, individuals may try to reduce role problems by avoiding them. Such a strategy is most likely not effective in the long run. Future studies should also investigate the interaction between job crafting in the form of increasing and decreasing job demands on the one hand, and work engagement on the other.

**FIGURE 3** Interaction effect of job crafting and work engagement on role ambiguity (Panel a) and bureaucratic problems (Panel b)

8 | PRACTICAL IMPLICATIONS FOR NURSE MANAGERS AND NURSING MANAGEMENT

Our study suggests that job crafting is positively related to resources and negatively related to job demands, particularly when work

TABLE 6 Summary of hierarchical regression analysis for variables predicting P-O fit ($n = 5,272$)

Variable	Model 1			Model 2			Model 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Age	0.20	0.03	.09***	0.22	0.03	.10***	0.22	0.03	.10***
Education	0.11	0.02	.07***	0.11	0.02	.07***	0.11	0.02	.07***
Job position	1.80	0.05	.46***	1.72	0.05	.44***	1.71	0.05	.44***
Job crafting	-	-	-	0.24	0.03	.10***	0.22	0.03	.09***
Work engagement	-	-	-	0.18	0.03	.08***	0.20	0.03	.09***
Interaction term	-	-	-	-	-	-	0.12	0.03	.06***
R^2	.24			.26			.27		
F for change in R^2	514.54***			66.90***			19.32***		

Job crafting and work engagement were centred at their means. Interaction term = Job crafting * Work engagement.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

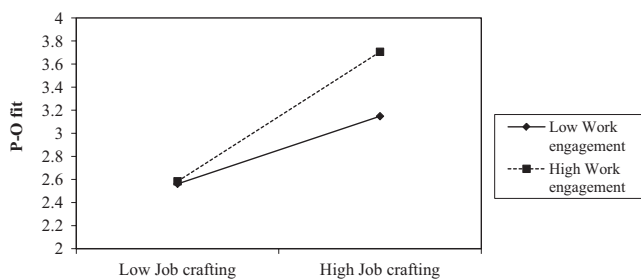


FIGURE 4 Interaction effect of job crafting and work engagement on P-O fit

engagement is high. This means that interventions aimed at fostering job crafting should be tailored to the motivation of health care professionals. Nurses and doctors low in engagement do not seem to profit from job crafting in the form of increasing structural and social job resources. These groups should be identified, and may need a specific intervention in which work engagement is first targeted through empowering and inspirational leadership (Breevaart et al., 2014). Nurses and doctors high in engagement seem to profit more from job crafting. Highly engaged professionals may follow job crafting training in which they learn to identify the aspects of work they want to change proactively. Previous research has shown that job crafting interventions can have a favourable impact on well-being and performance through a change in job characteristics, also among nurses (Gordon et al., 2017; Van Wingerden et al., 2016). Furthermore, the present study suggests that job crafting in the form of mobilizing job resources, when combined with high levels of enthusiasm and energy, can reduce the level of hindrance job demands. This is an important finding, since previous research has shown that hindrance demands are significant predictors of job strain and reduced performance (LePine et al., 2005). Job crafting may thus be an effective tool for nursing management to reduce job stress and increase job performance. Human resource managers of

health care organisations may offer job crafting training to nurses and doctors, so that they learn to optimize their own work environment (Van den Heuvel et al., 2015). Managers may also consider giving health care professionals sufficient autonomy to decide how to optimize the work environment by getting rid of their hindrance job demands.

9 | CONCLUSION

This study suggests that job crafting is positively related to job resources. Health care professionals who show job crafting behaviour seems to increase their job resources, but only if they are high in work engagement. Moreover, engaged workers who mobilize their job resources seem to reduce their hindrance job demands and improve the fit between the organisation and their own preferences and abilities. Since an optimal combination of job demands and resources has been found to be predictive of occupational well-being and performance, the current findings suggest that job crafting is a powerful strategy with which nurses and doctors can optimize their own functioning in the workplace.

ETHICAL APPROVAL

Schouten University Research Ethics Committee.

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