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PERSONAL RESOURCES AND WORK ENGAGEMENT: A TWO-WAVE STUDY ON THE ROLE OF JOB RESOURCES CRAFTING AMONG NURSES

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Building upon the job demands-resources and conservation of resources theories, the central aim of the study was to investigate the role of job resources crafting in the relationship between personal resources – self-efficacy and optimism – and work engagement. In order to reach this goal, we conducted a two-wave longitudinal study among 107 nurses – a specific occupational group known to have very high job demands. We assessed personal resources and job resources crafting behaviors at Time 1, and work engagement at Time 2 (one month after). The results of our two-wave longitudinal study provided support for the hypothesized research model. When nurses reported high levels of personal resources at Time 1, they were also more inclined to craft structural and social job resources. This, in turn, led to higher work engagement at Time 2. The findings of this study indicate that, even if employees work in unfavorable work situations, they can mobilize their personal resources and experience high work engagement by proactive interaction with their work environment.

Keywords: personal resources, work engagement, job crafting, longitudinal study, nurses

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Personal resources reflect individuals' sense of resilience and ability to control and impact upon environment successfully (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Within

the work setting, personal resources encompass confidence, perseverance, and optimism about the future (Luthans, Youssef, & Avolio, 2007). As such, they are positively associated with various beneficial work outcomes, including work engagement – a positive, fulfilling, work-related state characterized by vigor, dedication, and absorption (Avey, Luthans, Smith, & Palmer, 2010; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009).

However, studies on the concrete processes through which personal resources realize their beneficial effects on work engagement are still scarce. One exception is a study among 228 construction workers by Lorente, Salanova, Martínez, and Vera (2014), who demonstrated that personal resources (i.e. self-efficacy, mental and emotional competences) are associated with the perception of job resources (i.e. job control and supervisor social support), which, in turn, affects work engagement and self-rated performance. Similarly, in a daily diary study among a heterogeneous sample of employees, Tims, Bakker, and Derks (2014) showed that daily job crafting strategies and daily work enjoyment partly explain the associations between daily self-efficacy being one aspect of personal resources, and self-rated work performance.

Building upon the Job Demands-Resources theory (JD-R) (Bakker & Demerouti, 2016; Demerouti & Bakker, 2011) and the Conservation of Resources theory (COR) (Hobfoll, 2002), the main aim of the present study was twofold. First, using a two-wave research design, the present study aimed to contribute to the existing literature by investigating whether self-efficacy and optimism, two specific types of personal resources, foster employees to craft their job resources. Crafting of job resources represents behaviors initiated by employees that aim to sustain and modify existing or to create new job resources – physical, social, psychological and/or organizational aspects of the job that can facilitate attainment of work goals, reduce job demands, and stimulate personal growth and development, such as social support, opportunities for development, and adequate feedback (Tims, Bakker, & Derks, 2013).

Second, we aimed to examine whether crafting of job resources at Time 1 could explain the positive relations between self-efficacy, optimism, and work engagement at Time 2 (one month later). In other words, we aimed to test whether the crafting of job resources mediates the relationship between personal resources, assessed at Time 1, and work engagement assessed at Time 2. In this way, the current study aims to add to our knowledge by examining how self-efficacy and optimism can work towards building a better workplace by accumulating more resources (Hobfoll, 2002), which might further stimulate work engagement, a positive affective-motivation state.

The study was conducted among nurses, a specific occupational group, known to have very high job demands (Bakker, Le Blanc, & Schaufeli, 2005; Demerouti, Bakker, Nachreiner, & Schaufeli, 2000). More concretely, being a nurse is a very specific and highly demanding job that requires making quick and critical decisions, involvement with patients and their families in very difficult circumstances, and under time pressure (e.g. Montgomery, Spânu, Băban, & Panagopoulou, 2015). These job tasks are clearly very important as well as highly demanding, and this makes the nursing profession often very stressful. Thus, this study aims to provide further insights into the complexities of the nursing profession.

THEORETICAL BACKGROUND

Personal resources as antecedents of job crafting. Building upon the JD-R theory approach, Tims, Bakker, and Derks (2012) operationalized job crafting behavior as employees' strivings to change the levels of the personal and job resources they have, as well as the adjustment of the levels of challenge and hindrance demands they have to deal with. In this study, we focused on crafting of job resources in particular because job resources have a crucial role in fostering positive aspects of the work environment (Demerouti, Van den Heuvel, Xanthopoulou, Dubbelt, & Gordon, 2017). Job resources can serve as intrinsically motivating factors by contributing to goal attainment, personal growth, and learning new skills. However, job resources can also have an extrinsically motivating effect through instrumental support in goal attainment, as well as through buffering the negative effects of high job demands (Bakker & Demerouti, 2016). The present study especially focused on the crafting of structural and social resources, namely: a) increasing structural job resources, which includes increasing autonomy, skill variety, and/or positive aspects of one's work place; and b) increasing social job resources, which entails nurturing or developing positive relations with colleagues and supervisors, for instance, asking for feedback and support, as well as providing support and advice.

Several studies specifically investigated the role of individual differences in job crafting. For instance, Bipp and Demerouti (2015) showed that employees scoring high on approach temperament tend to seek resources and demands, whereas employees scoring high on avoidance temperament tend to reduce hindering demands in the workplace. Also, Bakker, Tims, and Derks (2012) demonstrated that employees who were characterized by a proactive personality were most likely to craft their jobs (increase their structural and social job resources, and increase their job challenges), which, in turn, predicted work engagement and colleague-ratings of in-role per-

formance. A daily diary study among a heterogeneous sample of employees by Tims et al. (2014) revealed that employees who felt more self-efficacious on a given day were more likely to mobilize their job resources on that day. This was, in turn, positively associated with work enjoyment, and indirectly associated with performance.

These findings indicate the importance of different personal characteristics and skills as antecedents of job crafting behaviors. We posit that employees, who have a strong sense of confidence in their own abilities to attain intended outcomes, as well as a positive outlook on the current situation and future prospects, are likely to put sufficient effort in their work and to seek and build new resources. High self-efficacy and optimism may enable employees to come up with and engage in various adaptive behavioral and relational strategies that facilitate positive work outcomes, such as developing resources, nurturing positive relationships, and effectively coping with high job demands. In other words, highly self-efficient and optimistic employees could be prone to behavioral strategies aimed at increasing different types of resources, depending on their needs. In line with this reasoning, we formulate our second hypothesis:

Hypothesis 1a. Self-efficacy has significant positive associations with job resources crafting.

Hypothesis 1b. Optimism has significant positive associations with job resources crafting.

Personal resources and work engagement. Personal resources stimulate goal achievement, personal growth and development (Xanthopoulou et al., 2009). As such, they have an essential role in the JD-R theory because they contribute to explaining the variance in positive and negative work-related well-being indicators, along with job demands and job resources (Avey et al., 2010; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2012). In this study, we particularly focused on a) self-efficacy, a sense of confidence to put effort in challenging tasks; and b) optimism, a positive outlook on the current situation and future prospects about succeeding (Avey et al., 2010).

Existing literature revealed a strong positive association between personal resources and work engagement (Gruman & Saks, 2011; Xanthopoulou et al., 2009). For instance, Bakker and Xanthopoulou (2013) showed that respondents with the highest personal resources (i.e., self-efficacy and resilience) had also the highest ratings of work engagement. These positive associations between personal resources and work outcomes imply that personal resources represent important capacities

and skills that affect the ways individuals perceive, react, and engage with their work environment. High self-efficacy and optimism seem to be beneficial because they provide internal support and tools entailing a sense that one can influence and act upon the work environment, that things can and will work out well, as well as a sense of acceptance of difficult situations as inevitable aspects of life (Luthans, Avolio, Avey, & Norman, 2007). These characteristics enable employees to deal with their work environment with a positive outlook in an appropriate, effortful, and focused way, which may foster their sense of dedication, energy, and fulfilment in their work. Based on these findings and theoretical notions, we formulate our first hypothesis:

Hypothesis 2a. Self-efficacy assessed at Time 1 has significant positive associations with work engagement assessed at Time 2 (one month later).

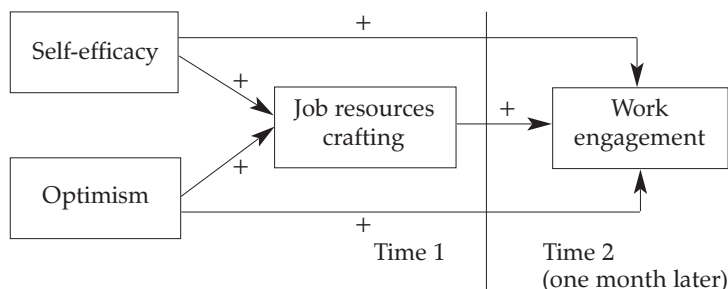
Hypothesis 2b. Optimism assessed at Time 1 has significant positive associations with work engagement assessed at Time 2 (one month later).

The mediating role of job resources crafting. Crafting of job resources refers to behavioral strategies aimed at changing the content or approach to work tasks (e.g. seeking more autonomy, seeking social support) that can increase job resources. These actions have a strong motivational potential because high job resources enable employees not only to deal with job demands, but also to foster work engagement and meaningfulness of one's work (Tadić, Bakker, & Oerlemans, 2014). According to COR theory (Hobfoll, 2002) individuals not only tend to protect the resources they have, but they also tend to accumulate them. Furthermore, previous research showed that employing strategies to increase job resources has positive consequences for work engagement (e.g. Tims et al., 2013). In line with these notions, we assume the following role of job resources crafting:

Hypothesis 3. Crafting of job resources (structural and social) assessed at Time 1 is positively and significantly related to work engagement assessed at Time 2 (one month later).

Finally, using two measurement waves, this study aims to expand the existing literature by examining whether high self-efficacy and optimism at Time 1 can stimulate proactive behavior tendencies aimed at nurturing the existing and creating new aspects of environment that support employees' work engagement at Time 2, one month later. The overall hypothesized research model is presented in Figure 1.

➔ FIGURE 1
Overall hypothesized
research model



We posit that highly self-efficient and optimistic nurses have sufficient confidence, positive outlook, and capacities to assess what they can modify in their workplace according to their needs, and that these capacities support them to proactively work towards creating new and sustaining the existing job resources. Moreover, we argue that these purposeful behaviors aimed at building resources, such as finding social support, seeking feedback, providing support for colleagues, as well as creating a more autonomous and task-diverse job setting, can eventually lead to higher work engagement. Although the positive associations between personal resources and work engagement can also be explained by other psychological mechanisms and traits (e.g. positive affectivity), nonetheless we posit that the crafting of structural and social job resources has, at least, a partial indirect effect on the relationship between self-efficacy and optimism, and work engagement. Based on this reasoning, we formulate our fourth and final hypothesis:

Hypothesis 4. Crafting of job resources (structural and social) mediates the relationship between personal resources (a) self-efficacy, and (b) optimism, and work engagement.

METHOD

Participants

At Time 1, 216 nurses working in health organizations throughout Croatia completed the survey. At Time 2, the number of participants was 107, which represents a response rate of 49.5%. We performed a drop out analysis in order to check whether the participants who filled out questionnaires for both Time 1 and Time 2 differ from those who provided data only at Time 1. The results revealed no significant differences regarding the sociodemographic variables between the two groups, and no significant differences regarding any of the study variables, which indicated that dropouts were not a concern in our study.

In line with gender distribution of the population of nurses in Croatia, most of the participants were female ($N = 196$; 87%) (Mihajlović, 2014). At the time of the study, the age of

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nurses ranged from 22 to 62, with a mean age of 41.01 years ($SD = 10.36$). Most of the nurses in our sample had either a bachelor's or a master's degree (66.5%), and about one third of the nurses had a vocational education (33.5%). On average, participants worked as nurses for 23.68 years ($SD = 22.72$), and mostly worked between 40 and 50 hours per week (62.9%). The sample of nurses in our study worked in different types of health organizations. Whereas the minority of nurses worked in private health care organizations (14.2%), most of them worked in the public health care system (85.8%), including primary (27.8%), secondary (10.6%), and tertiary health care (54.2%), as well as educational organizations (5.1%), and retirement homes (2.3%).

Procedure

We applied a snowball sampling strategy, and contacted by telephone and e-mail a sample of 58 head nurses working throughout Croatia in different health care sectors. We explained to them the main aims of the study, and kindly asked them to e-mail the invitation for participation in a study entitled "Well-being at work among nurses in Croatia" to nurses in their departments.¹ This e-mail provided a link to the survey used to collect the data. The potential participants received information on the purpose of the research, expected duration and procedures, and we informed them that they have the right to decline to participate and to withdraw from the research once it has started. Most of the contacted head nurses (75%) agreed to forward the study invitation to the nurses in their departments. However, we could not establish the number of head nurses who have actually e-mailed the invitation or the number of nurses who received the invitation for research participation; hence, we could not determine the exact response rate.

Data collection took place over three months, from April to July 2015. Participation in this research was voluntary, and respondents were ensured anonymity. Participants' identities were not known to the researcher, and nobody except the researcher had access to the data collected. The study did not involve any form of deception or risk to the participants, and was executed according to all standards of psychological research. In the study, we used a self-developed online survey, entitled "Well-being at work among nurses in Croatia". In the first wave, a hyperlink in the invitation mail directed participants to the online questionnaire. In the second wave, all participants received an e-mail with a hyperlink to the questionnaire. After thanking participants for their willingness to take part in our survey, the participants were presented with the survey questions in two time-points. The first question-

¹ This study was carried out within the larger international project "Tuscany: A Global Laboratory for Quality of Life". More information can be obtained at: <http://www.polionellobonfanti.it/tuscany-a-global-laboratory-for-quality-of-life-2/>

naire (Time 1) assessed the main sociodemographic information, work characteristics, personal resources and job crafting strategies. One month after that, the nurses were invited by e-mail to fill out a second, follow-up questionnaire (Time 2). The follow-up questionnaire was shorter, and consisted of work-related well-being indicators, namely work engagement. The two questionnaires were matched by unique anonymous personal codes.

Measures

Time 1. At Time 1, participants reported basic sociodemographic information, the information on their careers, characteristics of their work environment, and they rated their personal resources and job crafting strategies.

Control variables. Bearing in mind that many studies demonstrated that it is important to control for covariates like socio-demographics (e.g. Schaufeli, Bakker, & Salanova, 2006), in our analyses we controlled for *gender* and *age*. Specifically, work engagement is typically weakly positively related with age and gender (e.g. Schaufeli et al., 2006). Moreover, women seem to experience emotions more intensely compared to men (Fujita, Diener, & Sandvik, 1991), and emotional experiences generally become less intense (e.g., Diener, Sandvik, & Larsen, 1985) and more positive (Carstensen et al., 2011) with age.

Personal resources. We used the two subscales of the Psychological Capital Questionnaire (PCQ) (Luthans et al., 2007) to assess *self-efficacy* and *optimism*. The PCQ was back translated (English-Croatian-English) by two independent bilingual researchers, and the items of the scales remained similar after the translation process. Self-efficacy scale consisted of six items (e.g., *I feel confident in representing my work area in meetings with management*); and optimism consisted of four items (e.g., *I always look on the bright side of things regarding my job*). Respondents rated all items on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Previous research showed that each of these two components are conceptually and empirically valid (Avey, Luthans, & Jensen, 2009; Avey et al., 2010; Luthans et al., 2007). The self-efficacy subscale demonstrated high reliability with Cronbach $\alpha = 0.92$, and optimism subscale demonstrated sufficient reliability of Cronbach $\alpha = 0.72$.

Crafting of job resources was measured using the two subscales from the Job Crafting Scale (JCS) developed by Tims et al. (2012). The JCS was back translated (English-Croatian-English) by two independent bilingual researchers, and the items of the scales remained similar after the translation process. The present study used a composite score of crafting job resources consisting of two subscales: a) Increasing structural

job resources, assessed using four items that include increasing autonomy, skill variety, and/or positive aspects of one's work place (e.g., *I try to learn new things at work*; Cronbach $\alpha = 0.84$); and b) Increasing social job resources, which entails nurturing or developing positive relations with colleagues and supervisors, and is assessed using five items (e.g., *I ask colleagues for advice*; Cronbach $\alpha = 0.78$). Participants responded to these items using a 7-point Likert scale ranging from 1 (*never*) to 7 (*very often*). This composite score serves as an indicator of overall employee proactive behaviors aimed at increasing job resources, such as autonomy, skill variety, and positive relations within the workplace (Cronbach $\alpha = 0.79$).

To test whether personal resources and job resources crafting represented empirically different constructs/aspects of work life, we ran a set of confirmatory factor analyses (CFA) using Mplus (Muthén & Muthén, 1998–2011) on self-efficacy, optimism, structural and social job crafting scales' items. This also enabled us to check whether the common method bias (CMB; Podsakoff et al., 2003; Williams & McGonagle, 2016) could affect the relationship between self-efficacy, optimism, and crafting of job resources, which, in turn, could influence the mediation analyses. We expected the four-factor model to provide the best fit (self-efficacy, optimism, structural, and social job resources crafting), nonetheless, we also tested two more parsimonious, yet theoretically plausible CFA models.

First, we tested a one-factor model, in which all of the items load on a single common factor, which provided very poor fit ($\chi^2[209] = 905.744, p = 0.00$; CFI = 0.634; TLI = 0.595; RMSEA = 0.126; SRMR = 0.110). Second, we checked the two-factor solution, suggesting that the items measure two distinct dimensions: personal resources and job resources crafting, which showed better, but still poor fit ($\chi^2[208] = 613.891, p = 0.00$; CFI = 0.787; TLI = 0.763; RMSEA = 0.096; SRMR = 0.086).

Third, we tested the expected four-factor model including two dimensions of personal resources and two dimensions including job resources crafting, which showed much better, albeit not satisfactory fit ($\chi^2[203] = 412.968, p = 0.00$; CFI = 0.891; TLI = 0.876; RMSEA = 0.070; SRMR = 0.070). Factor loadings of each item on its respective factor were moderate to high within this model, except for the three items that had factor loadings below 0.3. This was not surprising as two of the three items were the negatively phrased items of the optimism scale, and the third item was an item of crafting structural job resources *I decide on my own how I do things*, which is quite different in terms of content and meaning from the rest of the scale. Thus, we fitted two further models: a) a four-factor model with a method-factor associated with negatively

worded items, and b) a four-factor model in which we omitted the three problematic items. The results showed that the four-factor model with the omitted three items had better fit ($\chi^2[146] = 297.617, p = 0.00; CFI = 0.917; TLI = 0.903; RMSEA = 0.070; SRMR = 0.057$) than the model with a method-factor associated with negatively worded items ($\chi^2[201] = 392.385, p = 0.00; CFI = 0.899; TLI = 0.884; RMSEA = 0.067; SRMR = 0.063$). Finally, in the final four-factor model without the three problematic items, we freed paths between the self-efficacy items *I feel confident in discussions about the functioning of the institution I work in* and *I feel confident when I contact people outside the institution I work in* as indicated by model modification indices. This model provided the best fit ($\chi^2[145] = 279.115, p = 0.00; CFI = 0.926; TLI = 0.913; RMSEA = 0.066; SRMR = 0.057$). These results of the confirmatory factor analyses suggest that the self-report scales used to measure optimism, self-efficacy, and crafting of social and structural job resources can be conceptualized as statistically distinct, and that the variance in the variables seems to be due to the constructs being evaluated and not to the method used.

Time 2. One month after the first questionnaire, the participants responded to a follow-up questionnaire consisting of the work engagement scale. All of the items used were adapted so that they referred to the participants' work-related well-being during the last month. As can be seen in detailed descriptions below, these modifications did not reduce the reliability and validity of the measurement scale.

Work engagement. Work engagement was assessed using the 9-item version of the Utrecht Work Engagement Scale (UWES), which has been validated in previous research (Schaufeli et al., 2006), also on a Croatian sample (Tadić et al., 2014). The UWES items refer to three dimensions each assessed using three items: a) vigor (e.g., *Last month at my work, I felt strong and vigorous*), dedication (e.g., *Last month, my job inspired me*), and absorption (e.g., *Last month I got carried away when I was working*). All items were scored on a 7-point rating scale ranging from 1 (*not at all*) to 7 (*all the time*). The reliability of the scale was excellent with Cronbach's $\alpha = 0.96$.

RESULTS

Descriptive statistics

Table 1 presents the overall means, standard deviations, and zero-order correlations among the variables included in the study, including the correlations between the two measurement waves.

	M (SD)	1.	2.	3.	4.	5.
Time 1 (N = 216)						
1. Self-efficacy	5.43 (1.49)					
2. Optimism	5.18 (1.05)	0.61**				
3. Crafting of structural job resources	6.12 (0.96)	0.47**	0.40**			
4. Crafting of social job resources	4.67 (1.48)	0.26**	0.31**	0.45**		
5. Crafting of job resources (composite score)	5.39 (1.02)	0.44**	0.42**	0.88**	0.83**	
Time 2 (N = 107)						
6. Work engagement	4.20 (1.68)	0.34**	0.36**	0.32**	0.31**	0.37**

TABLE 1
Means, standard deviations, and correlations for the study variables

Note. M = Mean SD = standard deviation. All variables had a response range from 1 to 7.
** $p < 0.01$.

Hypotheses testing

The main goal of the present study was to investigate the direct and indirect associations between personal resources, crafting of job resources, and work engagement.

Direct effects. Using multiple regression analyses (Tabachnik & Fidell, 2007), with age and gender as control variables, we first tested the three hypotheses on the direct associations between personal resources and crafting of job resources at Time 1 (Hypotheses 1a and 1b), and work engagement at Time 2 (Hypotheses 2a and 2b). Thereafter, we tested the association between crafting of job resources and work engagement (Hypothesis 3).

TABLE 2
Hierarchical regression models results for work engagement and crafting of job resources (N = 107)

	Crafting of job resources		Work engagement		
	Model 1 B (SE)	Model 2 B (SE)	Model 3 B (SE)	Model 4 B (SE)	Model 5 B (SE)
Constant	0.02 (0.04)	0.02(0.04)	4.13 (0.16)**	4.14 (0.16)**	4.32 (0.95)**
Control variables					
Age	0.05 (0.04)	0.06 (0.04)	0.06 (0.17)	0.09 (0.17)	0.01 (0.02)
Gender	-0.03 (0.04)	-0.03 (0.04)	-0.16 (0.17)	-0.15 (0.17)	-0.60 (0.59)
Main effects					
Self-efficacy	0.23 (0.04)**	n/a	0.61 (0.19) **	n/a	n/a
Optimism	n/a	0.29 (0.06)	n/a	0.84 (0.23)**	n/a
Crafting of job resources	n/a	n/a	n/a	n/a	1.01 (0.25)**
R ²	0.17	0.15	0.12	0.16	0.15
Adjusted R ²	0.15	0.13	0.09	0.13	0.13
F	12.19**	10.43**	4.41**	4.65**	6.06**

Note. B = Unstandardized regression coefficients. SE = standard error. n/a = not applicable.
* $p < 0.05$; ** $p < 0.01$.

In Hypotheses 1a and 1b, we proposed that nurses, who report high levels of self-efficacy and optimism at Time 1, would also have a high tendency to craft their job resources at Time 1. As can be seen in Table 2 in Models 1 and 2 of the multiple regression analyses, the results confirmed the hypotheses by showing that self-efficacy ($t = 5.35, p < 0.001$) and optimism ($t = 4.85, p < 0.001$) significantly and positively related to job resources crafting. Hypotheses 2a and 2b stated that highly self-efficient and optimistic nurses at Time 1 would also be highly engaged at Time 2. The direct effect estimates (Models 3 and 4 in Table 2) showed both personal resources, namely, self-efficacy ($t = 3.24, p < 0.001$) and optimism ($t = 3.72, p < 0.001$), were significantly and positively related to work engagement, which supports Hypothesis 2.

Finally, in order to test Hypothesis 3, which posited that crafting of job resources at Time 1 will be positively and significantly related to work engagement at Time 2, we employed regression analyses with composite score of job resources crafting on work engagement. Model 5 in Table 2 provides support for Hypothesis 3, as the results demonstrated that job resources crafting at Time 1 is strongly and positively related to work engagement at Time 2 ($t = 3.95, p = 0.000$).

Indirect (mediation) effects. The final hypothesis was the mediation hypothesis, which assumes process-intervening variables or mediators (M) – through which an independent variable (X) affects a dependent variable (Y) (Preacher & Hayes, 2008). More concretely, Hypothesis 4 stated that job resources crafting strategies represent mechanisms that can, at least in part, explain the positive associations between personal resources at Time 1 and work engagement at Time 2.

Bearing in mind the context of the study and prior theory, we performed several regression analyses using the PROCESS macro (Hayes, 2013) for IBM SPSS Statistics for Windows, version 24 (IBM Corp., Armonk, N.Y., USA). This procedure estimates confidence intervals for the population value of the unstandardized indirect effect (ab), which are derived using bias-corrected and accelerated (BCa) bootstrapping. Bootstrapping is a nonparametric resampling procedure, and is recommended by Preacher and Hayes (2008) for testing mediation because it does not impose the assumption of normality of the sampling distribution. In order to appropriately test and interpret the associations between the variables included in the study, in the analyses we used grand-mean centered predictor variables – self-efficacy and optimism – and a grand-mean centered composite score reflecting overall crafting of job resources.

The hypothesized model (Model 4 in the PROCESS template) separately tested the influence of the two personal resources (i.e. self-efficacy and optimism) on work engagement

via crafting of structural and social job resources. The models included gender and age as covariates. More concretely, our hypothesis 4a predicted that self-efficacy will be indirectly (positively) related to work engagement via the processes of using job resources crafting strategies. The results are presented in Table 3.

Model	Direct effect (SE)	t	Work engagement	
			LL 95% CI	UL 95% CI
Self-efficacy on work engagement	0.47 (0.24)	1.97*	- 0.01	0.94
Optimism on work engagement	0.61 (0.24)	2.57**	0.14	1.08
	Boot indirect effect	Boot SE	LL 95% CI	UL 95% CI
Self-efficacy – via crafting of job resources – on work engagement	0.26	0.13	0.06	0.57
Optimism – via crafting of job resources – on work engagement	0.23	0.11	0.06	0.51

TABLE 3
 Results of the mediation analyses of crafting of job resources in the relationship between personal resources and work engagement (N = 107)

Note. Bias corrected and accelerated 95% bootstrap confidence intervals are reported. Boot-strap sample size = 10000. CI = confidence interval; LL = lower limit; UL = upper limit. Control variables = age, gender. * $p < 0.05$; ** $p < 0.01$.

As shown in Table 3, the unstandardized indirect effect (ab) and bootstrapped confidence intervals support the proposed hypothesis by showing our prediction that the indirect effect of self-efficacy on work engagement (via job resources crafting) is significant and positive. Furthermore, our analyses provide evidence that job resources crafting is also a significant mediator in the relationship between optimism and work engagement, supports the Hypotheses 4a and 4b.

DISCUSSION

The main goal of this two-wave study was to examine whether job resources crafting strategies can explain, at least in part, the associations between personal resources (self-efficacy and optimism) assessed at Time 1 and work engagement, assessed at Time 2 (one month later). In this way, the study aimed to bring novel insights into the antecedents of job resources crafting, as well as into the processes that could explain the associations of personal resources and work engagement among nurses. The results of our two-wave longitudinal study among 107 nurses provided support for the hypothesized research model. More concretely, nurses who reported high (vs low) levels of self-efficacy and optimism were more inclined to increase their structural and social job resources at Time 1.

This, in turn, was associated with higher work engagement reports one month later, at Time 2.

Theoretical contributions

The findings of the current study make several important contributions to the existing literature. First, the study revealed that crafting of job resources – increasing structural and social resources – are conceptually and empirically valid constructs that can be used to assess the ways employees proactively interact and impact their work environment.

Second, the study provided a better understanding of the role of personal resources as antecedents of work engagement, as well as of the underlying mechanisms through which personal resources are translated to work engagement. On one hand, previous studies already indicated the importance of job crafting for sustaining well-being within the workplace, and a few studies showed the importance of different personal characteristics for involvement in job crafting behaviors (Tims et al., 2013; Tims et al., 2014). On the other hand, personal resources, as conceptualized by self-efficacy and optimism, have been shown to be an important and strong predictor of work-related well-being (Avey et al., 2010). However, the psychological mechanisms through which personal resources affect work-related well-being have not yet been thoroughly explored.

Specifically, the results showed that job resources crafting strategies can be seen as concrete, behavioral manifestations of personal resources that can foster work engagement even after one month. This means that employees who have a high sense of self-efficacy and optimism tend to self-initiate proactive and growth-oriented behaviors, such as asking for help, asking the supervisor for coaching, trying to learn new things at work, and making sure that they use their capacities to the fullest. This, in turn, helps them to experience high levels of vigor, dedication, and energy in their work.

It is important to note that there are other traits and mechanisms that could also play a relevant role in the relationships between personal resources and work engagement, such as autonomous motivation for work, proactivity, and extraversion. Still, our findings are important because they demonstrate how employees can take responsibility for themselves in a constructive way by influencing their job resources. Not all work environments offer sufficient job resources, and many employees do not have many possibilities to expect top-down (system and management level) interventions aimed at fostering their well-being, which is particularly true for public health care organizations in Croatia. Thus, the study results indicate that, even if employees work in unfavorable work situations, their self-efficacy and optimism can enable

them to find a way to deal with these demands and interact with their work environment in a proactive way to mobilize their job resources.

Limitations and future studies recommendations

The current study has few limitations that should be acknowledged. We assessed nurses' reports only on two measurement occasions, and we did not assess work engagement at Time 1, which would enable the testing of the effects of predictors in explaining work engagement with statistical control of initial level of work engagement. Future studies should try to measure all of our constructs at all of the measurement occasions in order to enable causal conclusions, while controlling for previous levels of personal resources, job resources crafting behaviors, and work engagement.

Moreover, although the study has a longitudinal research design, nurses' reports are in fact retrospective reports of relatively recent episodes (Miron-Shatz, Stone, & Kahneman, 2009). This notion leads to the question whether the employees' perception of their personal resources, job crafting behaviors, and work engagement would be any different if measured on a daily basis or during the actual work activities, rather than after the employee has had some time distance from the event. This could be addressed in future studies using intensive longitudinal methods, such as daily or weekly diaries, the day reconstruction method (DRM), and experience sampling methodology (ESM), in order to monitor specific events, personal and job resources, challenge and hindrance demands, job crafting, and their effects on work engagement, as well as work performance (Bolger & Laurenceau, 2013).

Finally, the present study focused on nurses in particular, which has both strengths and limitations. On the one hand, the current study provides novel and detailed insights into the complexities of nurses' work environment, and the interplay between some of their personal characteristics (i.e. personal resources), some of their behaviors (i.e. crafting of job resources), and personal experiences of work (i.e. work engagement). On the other hand, the focused sample poses questions on the generalizability of our findings, hence; future studies among nurses as well as other professions should use longer term longitudinal research designs with more measurement occasions to replicate present findings and enable causal conclusions. Nonetheless, the study revealed some of the mechanisms that might shield employees when encountering high job demands and that enable employees to develop and sustain positive affective and motivational states at work.

Practical implications and conclusions of the study

The present study indicates the importance of nurturing and developing strong personal resources for work engagement, and of the potentials of job resources crafting strategies. This is important because, for many people, regardless of their occupational context, putting effort in work can represent one of the ways to fulfill basic psychological needs and promote well-being in everyday life. The research insights revealed may be particularly relevant for nurses who work in intense contact with patients because maintaining high levels of work engagement has proven to be beneficial not only for employees themselves, but also for the people they work and live with (Ilies, Wilson, & Wagner, 2009). Indeed, research has shown that employees who view their work not only as economic means, but also as a meaningful and valuable calling tend to be highly engaged in their work and find a lot of satisfaction in it (Gagné & Deci, 2005).

Moreover, the way employees experience their work is highly important not only for their own lives, but also for the organization as a whole. Hence, training nurses to become aware of and use their personal resources and different job crafting strategies aimed at promoting more optimal work environments could enable them with tools to make them feel and function better at work. For example, nurses can see the value of putting effort into increasing job resources, which can help them to effectively deal with many job demands, such as a large number of complex work tasks, which may help nurses to experience high work engagement. This is important because employees who are highly engaged in their work are typically hard working, proactive, open to learning new things, enthusiastic about their jobs, and tend to experience positive emotions (Bakker & Demerouti, 2016; De Neve, Diener, Tay, & Xuereb, 2013), which is beneficial for organizations as a whole, as well as for individual beneficiaries (i.e. patients, colleagues).

REFERENCES

- Avey, J. B., Luthans, F., & Jensen, S. M. (2009). Psychological capital: A positive resource for combating employee stress and turnover. *Human Resource Management, 48*(5), 677–693. <https://doi.org/10.1002/hrm.20294>
- Avey, J. B., Luthans, F., Smith, R. M., & Palmer, N. F. (2010). Impact of positive psychological capital on employee well-being over time. *Journal of Occupational Health Psychology, 15*(1), 17–28. <https://doi.org/10.1037/a0016998>
- Bakker, A. B., & Demerouti, E. (2016). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273–285. <https://doi.org/10.1037/ocp0000056>

- Bakker, A. B., Le Blanc, P. M., & Schaufeli, W. B. (2005). Burnout contagion among intensive care nurses. *Journal of Advanced Nursing*, 51(3), 276–287. <https://doi.org/10.1111/j.1365-2648.2005.03494.x>
- Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations*, 65(10), 1359–1378. <https://doi.org/10.1177/0018726712453471>
- Bakker, A. B., & Xanthopoulou, D. (2013). Creativity and charisma among female leaders: The role of resources and work engagement. *The International Journal of Human Resource Management*, 24(14), 2760–2779. <https://doi.org/10.1080/09585192.2012.751438>
- Bipp, T., & Demerouti, E. (2015). Which employees craft their jobs and how? Basic dimensions of personality and employees' job crafting behaviour. *Journal of Occupational and Organizational Psychology*, 88(4), 631–655. <https://doi.org/10.1111/joop.12089>
- Bolger, N., & Laurenceau, J.-P. (2013). *Intensive longitudinal methods: An introduction to diary and experience sampling research*. New York: Guilford Press.
- Carstensen, L. L., Turan, B., Scheibe, S., Ram, N., Ersner-Hershfield, H., Samanez-Larkin, G. R., Brooks, K.P., & Nesselroade, J. R. (2011). Emotional experience improves with age: Evidence based on over 10 years of experience sampling. *Psychology and Aging*, 26(1), 21–33. <https://doi.org/10.1037/a0021285>
- De Neve, J.-E., Diener, E., Tay, L., & Xuereb, C. (2013). The objective benefits of subjective well-being. In J. Helliwell, R. Layard, & J. Sachs (Eds.), *World happiness report 2013* (pp. 54–79). New York: United Nations.
- Demerouti, E., & Bakker, A. B. (2011). The job demands-resources model: Challenges for future research. *SA Journal of Industrial Psychology*, 37(2), 01–09. <https://doi.org/10.4102/sajip.v37i2.974>
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2000). A model of burnout and life satisfaction amongst nurses. *Journal of Advanced Nursing*, 32(2), 454–464. <https://doi.org/10.1046/j.1365-2648.2000.01496.x>
- Demerouti, E., Van den Heuvel, M., Xanthopoulou, D., Dubbelt, L., & Gordon, H. J. (2017). Job resources as contributors to wellbeing. *The Routledge Companion to Wellbeing at Work*, 269. <https://doi.org/10.1002/9781118539415.wbwell019>
- Diener, E., Sandvik, E., & Larsen, R. J. (1985). Age and sex effects for emotional intensity. *Developmental Psychology*, 21(3), 542–546. <https://doi.org/10.1037/0012-1649.21.3.542>
- Fujita, F., Diener, E., & Sandvik, E. (1991). Gender differences in negative affect and well-being: The case for emotional intensity. *Journal of Personality and Social Psychology*, 61(3), 427–434. <https://doi.org/10.1037/0022-3514.61.3.427>
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331–362. <https://doi.org/10.1002/job.322>
- Gruman, J. A., & Saks, A. M. (2011). Performance management and employee engagement. *Human Resource Management Review*, 21(2), 123–136. <https://doi.org/10.1016/j.hrmmr.2010.09.004>

- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, 6(4), 307. <https://doi.org/10.1037/1089-2680.6.4.307>
- IBM Corp. Released 2016. *IBM SPSS Statistics for Windows*, Version 24.0. Armonk, NY: IBM Corp.
- Ilies, R., Wilson, K. S., & Wagner, D. T. (2009). The spillover of daily job satisfaction onto employees' family lives: The facilitating role of work-family integration. *Academy of Management Journal*, 52(1), 87–102. <https://doi.org/10.5465/amj.2009.36461938>
- Lorente, L., Salanova, M., Martínez, I. M., & Vera, M. (2014). How personal resources predict work engagement and self-rated performance among construction workers: A social cognitive perspective. *International Journal of Psychology*, 49(3), 200–207. <https://doi.org/10.1002/ijop.12049>
- Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, 60(3), 541–572. <https://doi.org/10.1111/j.1744-6570.2007.00083.x>
- Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital: Developing the human competitive edge*. Oxford, UK: Oxford University Press.
- Mihajlović, A. (2014). The number of nurses in the Republic of Croatia: Yesterday, today, tomorrow. (Master thesis). Available at <https://repositorij.mef.unizg.hr/islandora/object/mef:295/preview>
- Miron-Shatz, T., Stone, A., & Kahneman, D. (2009). Memories of yesterday's emotions: Does the valence of experience affect the memory-experience gap? *Emotion*, 9(6), 885–891. <https://doi.org/10.1037/a0017823>
- Montgomery, A., Spânu, F., Băban, A., & Panagopoulou, E. (2015). Job demands, burnout, and engagement among nurses: A multi-level analysis of ORCAB data investigating the moderating effect of teamwork. *Burnout Research*, 2(2-3), 71–79. <https://doi.org/10.1016/j.burn.2015.06.001>
- Muthén, L. K., & Muthén, B. O. (1998–2011). *Mplus User's Guide*, 6th Edition. Los Angeles, CA: Muthén & Muthén.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66(4), 701–716. <https://doi.org/10.1177/0013164405282471>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*, 5th Edition. Needham Height, MA: Allyn & Bacon.

- Tadić, M., Bakker, A. B., & Oerlemans, W. G. M. (2014). Challenge versus hindrance job demands and well-being: A diary study on the moderating role of job resources. *Journal of Occupational and Organizational Psychology*, 88(4), 702–725. <https://doi.org/10.1111/joop.12094>
- Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of Vocational Behavior*, 80(1), 173–186. <https://doi.org/10.1016/j.jvb.2011.05.009>
- Tims, M., Bakker, A. B., & Derks, D. (2013). The impact of job crafting on job demands, job resources, and well-being. *Journal of Occupational Health Psychology*, 18(2), 230–240. <https://doi.org/10.1037/a0032141>
- Tims, M., Bakker, A. B., & Derks, D. (2014). Daily job crafting and the self-efficacy – performance relationship. *Journal of Managerial Psychology*, 29(5), 490–507. <https://doi.org/10.1108/JMP-05-2012-0148>
- Williams, L. J., & McGonagle, A. K. (2016). Four research designs and a comprehensive analysis strategy for investigating common method variance with self-report measures using latent variables. *Journal of Business and Psychology*, 31(3), 339–359. <https://doi.org/10.1007/s10869-015-9422-9>
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, 14(2), 121–141. <https://doi.org/10.1037/1072-5245.14.2.121>
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior*, 74(3), 235–244. <https://doi.org/10.1016/j.jvb.2008.11.003>
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2012). A diary study on the happy worker: How job resources relate to positive emotions and personal resources. *European Journal of Work and Organizational Psychology*, 21(4), 489–517. <https://doi.org/10.1080/1359432X.2011.584386>

Osobni resursi i radna angažiranost: longitudinalna studija o ulozi samostalnoga dorađivanja radnih resursa među medicinskim sestrama

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Polazeći od teorija radnih zahtjeva i resursa i teorije očuvanja resursa, glavni cilj ovog istraživanja bio je ispitati ulogu samostalnoga dorađivanja resursa na poslu u odnosu između osobnih resursa – samopouzdanja i optimizma – i radne angažiranosti. Istraživanje je provedeno longitudinalno u dvije točke mjerenja, a u istraživanju je sudjelovalo 107 medicinskih sestara, koje su specifična radna skupina

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karakterizirana visokom razinom radnih zahtjeva. U prvoj točki mjerenja ispitani su osobni resursi medicinskih sestara i samostalno dorađivanje resursa na poslu, a u drugoj točki mjerenja (mjesec dana kasnije) ispitana je i radna angažiranost. Rezultati su pokazali da su visoko samopouzdana i optimistične medicinske sestre sklone samostalno dorađivati strukturne i društvene resurse u radnoj okolini, što je bilo pozitivno povezano s visokom radnom angažiranosti mjesec dana kasnije. Ovi rezultati pokazuju da čak i kada su radni uvjeti nepovoljni, zaposlenici mogu mobilizirati svoje osobne resurse i biti visoko angažirani u svojem poslu kroz proaktivnu interakciju sa svojim radnim okruženjem, odnosno kroz pronalaženje i stvaranje raznih strukturnih i društvenih radnih resursa.

Ključne riječi: osobni resursi, radna angažiranost, samostalno dorađivanje posla, longitudinalna studija, medicinske sestre



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