



Daily work engagement and positive emotions in the workplace: Job crafting as a mediator

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I combined the broaden-and-build and job demands–resources theories, and examined the effect of employees' daily positive emotions outside the workplace before work on work engagement, and the mediating roles of (a) seeking resources and challenges and (b) reducing demands, in this daily job-crafting relationship. I collected data from 103 medical staff daily for 5 days, resulting in 515 data points, and used a multilevel model for data analysis. Results show that positive emotions directly and positively predicted work engagement, and also predicted work engagement indirectly and positively through seeking resources and challenges. Further, the effect of positive emotions was mediated by job crafting during the day through seeking resources and challenges, but not through reducing demands. These results emphasize the importance in subsequent work engagement of employees' emotions experienced in their personal life.

Keywords

positive emotions; job crafting; work engagement; seeking resources; seeking challenges; reducing demands

Article Highlights

- Positive emotions experienced outside the workplace before work directly and positively predicted work engagement during the day.
- Positive emotions experienced outside the workplace before work indirectly and positively predicted work engagement during the day through seeking resources and challenges.
- The effect of positive emotions was mediated by job crafting through seeking resources and challenges during the day, but not through reducing demands.

Employees' devotion to their work is a positive psychological quality for an organization (Bakker et al., 2008). Currently, organization managers motivate their employees to be more active by being fully engaged, energetic, and maintaining enthusiasm for work, and being dedicated to high-quality performance standards (Bakker et al., 2008). Researchers have identified employees' *work engagement* as an experiential state that fluctuates daily, and this fluctuation is triggered by positive emotions (Ouweneel et al., 2012). When positive emotions are higher, they fluctuate more upward. However, the relationship between employees' positive emotions outside the workplace before work, and work engagement on the day has not been examined. Knowledge of this relationship is important if organization managers are to understand what leads to a good working day, that is, when employees are active and energetic, with a high level of work engagement.

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Job crafting has been conceptualized as seeking resources and challenges, and reducing demands (Tims et al., 2012), which entails proactive self-initiated behavior (Zhang & Parker, 2019) by which employees can spontaneously make subtle adjustments to their work content on a daily basis (Bakker et al., 2020) to achieve personal or work goals and to adjust job demands and job resources. Previous studies have indicated that daily job crafting results in greater engagement and better performance through a process whereby employees craft autonomous interests to make their work more playful (Bakker et al., 2020; Kooij et al., 2020), as well as gaining momentary satisfaction of basic psychological needs (Bakker & Oerlemans, 2019). However, daily job crafting requires employees to expend energy for self-regulation (Bakker & Oerlemans, 2019); in other words, there are preconditions for how employees designate energy to their work each day. Although Zhang and Parker (2019) systematically summarized the antecedent variables of job crafting, for example, connection, affective commitment, and time perspective, few researchers have examined how job crafting occurs daily.

Costantini and Sartori (2018) have shown that interventions based on stimulation for the encouragement of positive emotions can improve individual job crafting and work engagement. Sonnentag et al. (2019) pointed out that reattachment to work and positive emotional preparation before starting work in the morning can be crucial to the whole working day. Therefore, I hypothesized that employees' emotional preparation before commencing their daily work is necessary for their self-regulation, and provides the necessary emotional components for an optimal work state. Thus, I predicted that daily job crafting by reducing demands and by seeking resources and challenges would mediate the influence of employees' prework emotions on their work status (see Figure 1).

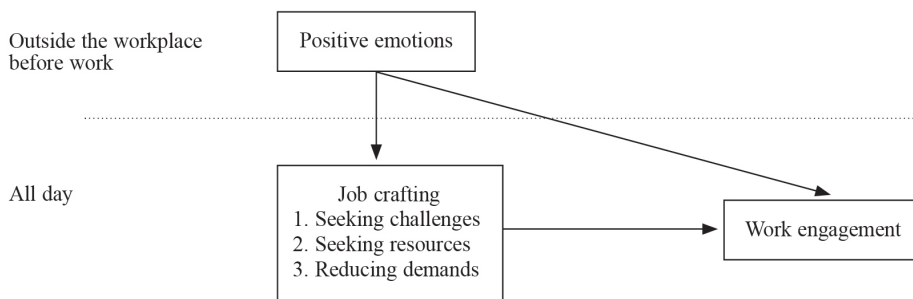


Figure 1. *Conceptual Model*

Broadening and Building Toward Work

It is posited in broaden-and-build theory that the function of positive emotions is to broaden an individual's momentary thought–action repertoires and build enduring personal resources (Fredrickson, 2013), leading to an heuristic global mode of information processing that allows an individual to focus on ongoing activities. This theory comprises two core components: broadening and building (Fredrickson, 2013). The broadening component holds that positive emotions broaden the scope of attention, cognition, and action. The building component holds that these broadened mindsets bring enduring, stable, and adaptive benefits, including physical, intellectual, emotional, and social support.

Employees' emotional state directly drives their work-oriented behaviors. Bledow et al. (2011) found in their exploration of the day-to-day affective motivation process that the dynamic interaction of emotions increases work engagement fluctuation. Ouweneel et al. (2012) tested the broaden-and-build hypothesis of positive emotions at work on a daily level, and found that employees' positive emotional experience on one

day indirectly affects their vigor, dedication, and absorption on the subsequent day. Positive emotions may thus serve an incentive function on a day-by-day basis. Therefore, I proposed the following hypothesis:

Hypothesis 1: Positive emotions outside the workplace before work will positively predict work engagement during the day.

As proactive behavior is characterized by instability, such behavior is easily affected by emotion. Ohly and Fritz (2010) found that emotion can be transformed into daily proactive behavior. According to broaden-and-build theory, positive emotions not only increase individuals' ability to actively cope with adversity in the moment, but also increase their resources in the long term (Fredrickson, 2013). Russo et al. (2021) showed that high arousal is positively correlated with job crafting, and Costantini and Sartori (2018) reported in their intervention study that increased positive emotions are conducive to the integration of resources. Further, Bakker and Oerlemans (2019) found that reducing demands is an emotion protection strategy negatively correlated with positive emotions. Therefore, I proposed the following hypothesis:

Hypothesis 2: Positive emotions outside the workplace before work will positively predict seeking resources and challenges, and negatively predict reducing demands, during the day.

Integration of Individual Resources

Job demands–resources theory posits that all work has demands and resources characteristics (Tims et al., 2016). *Job demands* refer to material, psychological, social, or organizational requirements that are associated with certain costs for the employee. Correspondingly, *job resources* refer to specific aspects that promote personal growth and development, reduce related physical and mental consumption, and enable the employee to achieve organizational goals. Proactive people seek the match (abilities–demand fit) between themselves and the environment rather than passively adapting to the status quo (Tims et al., 2016). Job demands are responsible for the health impairment process; fewer demands reduce job stress and job burnout. In contrast, the resource-based job crafting process directly increases work motivation, and demand-based job crafting reduces work pressure and further increases work motivation (Bakker & Demerouti, 2017).

Using job demands–resources theory as a framework, Demerouti et al. (2015) found that the active job crafting behaviors of seeking resources and challenges were positively correlated with work engagement, and avoidance of the reducing demands job-crafting behavior was negatively correlated with work engagement. Bakker and Oerlemans (2019) found that simplifying the everyday workflow does not necessarily improve work engagement, and that daily job crafting can have both positive and negative implications for daily work. In addition, Tims et al. (2013) found that increasing resources is positively associated with changes in work engagement, but reducing demands is unrelated to work engagement.

Individuals with positive emotions can be defensive about protecting their affective state and may avoid tasks with the potential to dampen their mood (Elfenbein, 2007). Bakker and colleagues (2020) found that when employees seek work resources or respond to the work needs of the day, they arrange their work carefully and may try to make their work playful. Daily positive emotions provide emotional and cognitive preparation for this self-initiated work design (Xanthopoulou et al., 2012). According to job demands–resources theory, a high (vs. low) positive emotional state before work may induce a motivational (vs. health impairment) process (Bakker & Demerouti, 2017). Thus, employees with positive emotions are more likely to perceive the beneficial aspects of work that is boring and monotonous, and design it as a task more in line with their own experience. This results in an accumulation of more positive emotions, allowing these employees to focus on their work (Sonnentag et al., 2019). Therefore, I proposed the following hypothesis:

Hypothesis 3: Job crafting by reducing demands, seeking resources, and seeking challenges will mediate the effect of positive emotions outside the workplace before work on work engagement on a daily level.

Method

Participants

Medical staff at four public hospitals in southern China voluntarily participated in this study. I obtained 103 valid responses from 40 (45.8%) men and 63 (58.8%) women. Participants' ages ranged from 21–51 years ($M = 29$, $SD = 7.09$), and their work experience ranged from 1–33 years ($M = 6.40$, $SD = 6.93$). On each study day, participants' positive emotions were measured at 8 a.m. when they began work, and work engagement and job crafting were measured after work at 6 p.m. Appointed personnel distributed the questionnaires to participants. To motivate participants, I provided lunch subsidies for them during the five study days.

Survey items were translated into Chinese and proofread by professional non-English academically qualified personnel who had studied English as a second language. The whole measurement process (paper-and-pen survey) followed the principles of voluntary participation and anonymity of participants.

Measures

Daily Level of Positive Emotions

We measured daily positive emotions using the 10-item Positive Emotion Scale, which has been widely used to assess momentary positive emotions (Ouweneel et al., 2012). A sample item is “I feel excited.” Participants rate the items on a 5-point Likert scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Cronbach's alpha was .94 in this study.

Daily Level of Job Crafting

We measured daily job crafting by adopting the three dimensions of the Daily Job Crafting Scale (Petrou et al., 2012). The seeking resources dimension comprises four items, for example, “I have asked colleagues for advice” (Cronbach's $\alpha = .86$). The seeking challenges dimension comprises three items, for example, “I have asked for more responsibilities” (Cronbach's $\alpha = .81$). The reducing demands dimension comprises three items, for example, “I have made sure that my work is mentally less intense” (Cronbach's $\alpha = .84$). Participants rate the items on a 5-point Likert scale ranging from 1 (*not true at all*) to 5 (*totally true*).

Daily Level of Work Engagement

I measured daily work engagement using the nine-item Utrecht Work Engagement Scale-9 (Schaufeli et al., 2006). The items were adapted to measure work engagement on a daily basis (Breevaart et al., 2012). A sample item is “In a day's work, I am full of vitality.” Participants rate the items on a 7-point Likert scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). Cronbach's alpha was .95 in this study.

Data Analysis

I used SPSS 25.0 for descriptive statistics and correlation analysis. Then, I constructed a multilevel structural equation model to test my hypotheses (Preacher et al., 2011), and applied a Bayesian estimation with default (noninformative) priors and means for point estimates.

Results

Preanalysis Results

Means, standard deviations, correlations, and intraclass correlation coefficients, ICC(1), among the study variables are presented in Table 1. All variables showed pairwise correlation suitable for further analysis. ICC(1) values ranged from .10 to .15 (medium size), indicating sufficient within- and between-person variance for all study variables.

Table 1. Descriptive Statistics, Intraclass Correlation Coefficients, and Correlations for Study Variables

Variable	<i>M</i>	<i>SD</i>	ICC	1	2	3	4	5
1. Daily positive emotions	29.48	10.91	.14	1				
2. Daily seeking resources	12.41	4.09	.10	.83**	1			
3. Daily seeking challenges	9.07	3.20	.15	.77**	.85**	1		
4. Daily reducing demands	9.03	3.36	.15	-.69**	-.75**	-.80**	1	
5. Daily work engagement	31.16	12.53	.12	.91**	.90**	.82**	-.73**	1

Note. ICC = intraclass correlation coefficient. 103 persons, 5 days, and 515 occasions.
 ** $p < .01$.

Hypothesis Testing

I conducted a multilevel regression analysis. The results show that positive emotions positively predicted both daily work engagement, and seeking resources and challenges (see Table 2), but negatively predicted reducing demands (see Table 3). Therefore, Hypotheses 1 and 2 were supported. In addition, seeking resources positively predicted work engagement and seeking challenges positively predicted work engagement, but reducing demands did not predict work engagement (see Table 2). I conducted a Bayesian multilevel structural equation modeling analysis. The results show an indirect positive effect of positive emotions on daily work engagement through day-level seeking resources and challenges, but not through day-level reducing demands (see Table 4). Therefore, Hypothesis 3 was partly supported.

Table 2. Multilevel Models Predicting Day-Level Work Engagement

Variables	Null model			Model 1			Model 2		
	Estimate	<i>SE</i>	<i>t</i>	Estimate	<i>SE</i>	<i>t</i>	Estimate	<i>SE</i>	<i>t</i>
Intercept	31.18	2.01	15.97***	0.42	3.44	0.12	31.18	0.19	160.54***
Positive emotions				1.05	0.02	47.96***	0.62	0.03	20.16***
Seeking resources							0.26	0.12	2.16*
Seeking challenges							1.16	0.10	11.84*
Reducing demands							-0.04	0.09	-0.45
-2 × log			-2005.94			-3492.71			-569.86
Δ -2 log						-1486.77			-3077.15
Variance	18.86	12.79	1.48	0.81	0.67	1.21	0.01	0.03	0.83

Note. $N = 515$ occasions (5 days nested in 103 persons).
 * $p < .05$. *** $p < .001$.

Table 3. *Multilevel Models Predicting Day-Level Seeking Resources and Challenges, and Reducing Demands*

Variables	Seeking resources			Seeking challenges			Reducing demands		
	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>
Intercept	9.07	0.05	5.12***	12.41	0.19	62.53***	9.04	0.25	1.27
Positive emotions	0.22	0.01	24.96***	0.31	0.01	31.75***	-0.20	0.01	-19.62***
-2 × log Variance			-3016.61			-3080.67			-3103.02
	5.06	0.13	1.29	0.13	0.11	1.15	0.26	0.20	1.27

Note. *N* = 515 occasions (5 days nested in 103 persons).

*** *p* < .001.

Table 4. *Bayesian Multilevel Structural Equation Modeling: Within-Person Indirect Effects With 95% Confidence Intervals*

	Estimate	Bayesian 95% CI	
		LL	UL
Indirect path			
Positive emotions → Seeking resources → Work engagement	0.06*	0.005	0.109
Positive emotions → Seeking challenges → Work engagement	0.36***	0.302	0.429
Positive emotions → Reducing demands → Work engagement	0.01	-0.028	0.044

Note. CI = confidence interval; LL = lower limit; UL = upper limit.

* *p* < .05. *** *p* < .001.

Discussion

I explored the relationships among employees' positive emotions outside the workplace before work, and job crafting and work engagement during the day. My focus was primarily on the mediating effects of reducing demands, seeking resources, and seeking challenges (job crafting) in the relationship between employees' positive emotions outside the workplace before work, and work engagement during the day.

Theoretical Implications

An employee being in a positive mood before work had a direct positive impact on the whole day's work engagement, which aligns with previous results showing positive emotions positively predicted work engagement on a daily basis (Bledow et al., 2011; Ouweneel et al., 2012). These findings are also consistent with broaden-and-build theory (Fredrickson, 2013), according to which, positive emotions momentarily change individuals' cognitive model, making them more focused on the current task. By taking participants' measurements before and after work, I not only improved the ability to imply causality, but also found that positive emotions before work set the tone of the day's work.

When participants experienced more (vs. less) frequent positive emotions before work, they sought more challenges and resources at work, which is consistent with previous findings (Costantini & Sartori, 2018; Russo et al., 2021). Consistent with broaden-and-build theory (Fredrickson et al., 2008), according to which

positive emotions increase individuals' enduring personal resources over time, my findings suggest that positive emotions before work drive daily resource-seeking behavior in the workplace. This implies that employees can successfully establish personal resources on a daily basis. I also found that positive emotions negatively predict reducing demands, which confirms Bakker and Oerlemans' (2019) finding that reducing demands is closely associated with individual emotions and can be an emotion protection strategy. My findings supplement the antecedent variables of daily job crafting discussion and enrich the explanation of daily resources construction in broaden-and-build theory.

I also found that seeking challenges and resources mediated the positive emotions–work engagement relationship, but reducing demands did not. Previous studies have shown that job crafting by seeking resources improves daily work engagement through momentary psychological satisfaction. However, crafting by reducing demands reduces daily work engagement through momentary energy consumption (Bakker & Oerlemans, 2019). My results further show that employees with positive emotions before work tended to actively increase their work resources and challenges, and maintained their motivation to focus on tasks. Previous results regarding reducing demands are inconsistent with my finding that reducing demands did not mediate the impact of positive emotions on work engagement. This may be because reducing demands involves fewer seeking challenges and resources behaviors (Bakker & Oerlemans, 2019), and may trigger a health impairment process by reducing job burnout through the reduction of job stress, rather than generating work engagement (Bakker & Demerouti, 2017). My findings help clarify employees' individual roles (e.g., self-design) on a work day with high work engagement (Sonnentag et al., 2019), whereby employees constantly adjust job-crafting processes in their daily work to focus on work goals and protect their emotional state.

Practical Implications

As employees' work engagement benefits from positive emotions before work, managers can support their employees in maintaining this high positive mood by designing a short encouragement plan at the start of each working day. For example, mindfulness meditation training for positive emotions can be carried out before work begins. My results specifically show that employees with high positive emotions devote themselves to their work via adequate job crafting, namely, seeking resources and challenges at a high level. Hence, managers who pay attention to feedback and encourage employee autonomy can optimize the motivational value of employees' positive emotions. It is even more important that managers reduce obstructions to work demands, such as workload, time pressure, and tense interpersonal relationships.

Limitations and Directions for Future Research

This study has some limitations. First, I assumed that employees gradually accumulate resources in their daily work. However, longitudinal research should be conducted to examine how employees build stable resources over time. Second, data were collected outside the workplace before work and at the end of the working day. My research method did not provide accurate information regarding where and when job crafting occurred during the working day, and if the specific workplace and environmental context of job crafting plays a role in employees' work experience and dedication. Finally, the limitations of self-reported data and my not controlling for positive emotions during the working day should be addressed by future researchers.

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