

**How needs based off job crafting may buffer against affective rumination over unfinished  
tasks**

Max Günther

S4385624

Department of Psychology, University of Groningen

PSB3E-BT15 Bachelor Thesis

Mentor Group: 2324 2a 26 EN

Supervisor: Dr. Oliver Weigelt

Second evaluator: Roxana Bucur

Email: [m.gunther.1@student.rug.nl](mailto:m.gunther.1@student.rug.nl)

2nd July, 2024

### **Abstract**

Unfinished work tasks can cause workers to engage in affective rumination over them in their off-job time. Affective rumination in turn has been linked to having negative effects on workers' health. Thus, we wanted to investigate whether needs based off-job crafting (NBOJC) could act as a buffer between unfinished tasks and affective rumination. NBOJC describes the act of trying to create experiences that fulfill specific psychological needs during non-work time. Our goal was to test whether engagement in NBOJC would, when interacting with unfinished tasks, predict lower scores on affective rumination. In a cross-sectional study, we analyzed a sample of 199 primarily European workers from various occupations. While the link between unfinished tasks and affective rumination was once again confirmed, our results failed to establish an interaction effect between NBOJC and unfinished tasks that predicted affective rumination scores. Despite this, our study found a significant direct link between affective rumination and NBOJC. As the first study investigating the combination between these variables, we contribute to the growing body of research investigating the needs based crafting theory as well as which variables affect affective rumination over unfinished tasks during off-job time.

*Keywords:* affective rumination, unfinished tasks, work, needs based crafting, off job behavior, needs satisfaction

## Introduction

Imagine yourself returning home from a stressful day. The new show you've been excited about for weeks has finally started and all your friends are already watching. Yet once you sit down on your sofa, you remember something. Isn't there this huge project at work you still haven't finished? What does this say about your skills and work ethic, can you just relax like this? Thoughts about the unfinished task keep running through your head and by the end of the day, you head to bed with negative work related thoughts. This would fit under the term *affective rumination*.

What could seem as an ode to someone who was just really stressed and tired, might be a window into a big problem concerning the mental reality of a multitude of busy workers. Instead of engaging in an off-work activity in accordance with one's current needs, the affected individual starts *ruminating about unfinished tasks*, something which can easily creep into and disrupt a worker's personal life. (see Weigelt et. al 2019 and Syrek et. al. 2017). While the link between unfinished tasks and affective rumination seems robust in research (Weigelt et. al 2019), research on alleviating the negative consequences through certain behavioral strategies to provide reliable counter measures is still rare. Our goal is to add to this important topic by investigating a potential candidate for such a counter measure which covers a large range of factors (De Bloom et. al. 2020), namely *needs based off-job crafting*. A flexible behavioral strategy like needs based off-job crafting, in our opinion, seems promising in forming a crucial variable for a relationship between negative work-related concepts like unfinished tasks and affective rumination with many facets and a robust relationship. (Weigelt et. al 2019)

### Work related rumination and unfinished tasks

The "*Zeigarnik effect*" offers a starting point to explain the relationship between unfinished tasks and affective rumination. It describes how people can more easily recall unfinished tasks even after they're supposed to work on them. (Zeigarnik 1927). According to

*control theory*, a worker will typically set themselves a goal and then adapt their behavior through various internal and external feedback loops to work towards its completion (Carver et. al. 1982 ). Not being able to reach the goal one set for themselves is correlated to lower well-being, specifically for certain needs like competence or affiliation (Sheldon et. al. 2009). Unfinished tasks can reflect such a discrepancy and have been empirically linked to affective rumination (Weigelt et. al. 2019).

In order to conceptualize the many facets of rumination, we will focus on the tripartite conceptualization by Cropley and Zijlstra (2011) in this paper: Detachment from work or the absence of work related rumination, problem solving pondering and affective rumination, which describes intrusive and recurring negative thoughts about work (Cropley and Zijlstra 2011).

Affective rumination, an affective state characterized by negative work related thoughts, (Cropley & Zijlstra 2011), was shown to correlate with a multitude of negative effects on workers and their job attitudes during off job time. Examples include a relationship between negative work related thoughts and physical complaints, low work satisfaction and a higher burnout risk (Jimenez et. al 2017). Weigelt et. al. additionally found that affective rumination negatively predicts satisfaction with life and positively predicts fatigue and psychosomatic problems (2023). It has also been shown that affective rumination mediates the relationship between sleep impairment and unfinished tasks (Syrek et. al. 2017).

Avoiding unfinished tasks is not always possible and the negative effects of it are a valid reason for concern. However, research on off-job behavior may cover behavioral strategies that could prevent unfinished tasks from spilling over into off-job time.

### **Related research on off job behavior**

There is a broad body of research for actively switching off from work and avoiding the negative consequences and stressors from work that may impact a worker's life. During off job time, many workers engage in various activities that may invoke a feeling of relaxation, joy,

relatedness, mastery (Sonnentag 2001) or immersion to further a sense of detachment from the “ordinary life” (Lukka 2014) when partaking in them, most of which are correlated to positive affect and a better mood in the evening after work (Sonnentag and Binnewies 2008).

In order to grasp how people may utilize these positive effects during off-job time, we suggest that a model would need to encapsulate the following topics: What is their (workers) behavior; Why are they engaging in it and can their efforts to fulfill specific needs successfully help in buffering against negative effects of job stressors like affective rumination over unfinished tasks?

The *needs based model of crafting* fits these criteria and suggests that each individual has a multitude of needs and unique crafting behavior depending on external and internal factors. Different activities may be used to cover different needs, depending on the individual (De Bloom et. al. 2020).

Assuming that affective rumination is a consequence of unfinished work tasks due to their empirically proven link (Weigelt et. al. 2019), crafting for needs that are threatened by unattained goals (Sheldon et. al. 2009) may be a way to alleviate the link between unfinished tasks and affective rumination. Needs based off-job crafting (NBOJC) could potentially lead to off-job behavior that incorporates the behavior and resulting positive effects many researchers, including Sonnentag (2001), have studied. The openness of the model in regards to how and which needs are covered (De Bloom et. al. 2020) further solidifies the idea that NBOJC could tie a broad range of off-job behavior together to create a flexible tool to deal with the threats unfinished tasks pose on well-being.

Focusing on needs based off-job crafting (NBOJC) for off-job behavior is to our knowledge still a relatively unexplored domain. Within the current research on positive off job behavior related to buffering against negative effects from work, recovery activities form a noticeable trend (Alameer et. al 2023). However, recovery activity related models and theories have been criticized by for example Alameer et. al (2023) for being too simplistic for not

accounting that various free time activities can combine multiple characteristics. For example, they mentioned that team sports foster a feeling of relatedness while also being physically demanding and that various categories can be somewhat correlated or true within a single activity. The models also show a rather narrow focus on specific activities, with less common activities being harder to find in psychological literature. Therefore, we came to the idea that it could be good to shift the focus from a specific activity based approach in research on buffering against negative effects from work to one in which the individual and what they want to achieve with their off job behavior forms the core. The issue of focusing on a narrow group of activities and which needs they usually cover would lose importance, putting the focus back on what the individual's perception of their behavior is. NBOJC could potentially fill this role. Investigating a specific set of needs and the crafting behavior that is done in order to fulfill them appears to be a more straightforward approach. It may limit the amount of additional variables compared to the amount that go into explaining the positive effects of off-job behavior in activity based approaches (Alameer et. al 2023).

### **Needs based crafting**

The needs based crafting model suggests that people have different needs in their various personal identities like the private self and the worker self and use different behaviors to craft these needs into these identities (De Bloom et. al. 2020). De Bloom and colleagues worked out 6 important needs that will build the basis for this paper: The *DRAMMA needs* consisting of *Detachment, Relaxation, Autonomy, Mastery, Meaning and Affiliation*. These different needs then shape the crafting of one's behavior in accordance with one's different identities in a deliberate effort to satisfy them. A spill-over between the different domains may occur. The crafting may resume with or without gaining the desired identity relevant outcomes. In case of a negative outcome, the behavior will be adjusted, similar to the model in control theory. In case of a positive result, the person will enjoy the positive effects the fulfillment of their needs brought

them with the possibility of another spill-over (De Bloom et. al. 2020). The spill-over from the off-job domain to the work related domain will form the crucial aspect on why we predict a positive influence from NBOJC, as it has been shown that positive and successful experiences from NBOJC during off-job time can improve crafting behavior in on job time, leading to improved reported well-being (Kujanpää et. al. 2022). Additionally, crafting for needs threatened by unfinished tasks may be another way to alleviate the link.

### **Needs categorization**

The DRAMMA needs can further be separated into two separate categories. The approach needs of autonomy, mastery, meaning and affiliation as well as the avoidance needs of detachment and relaxation. In needs based crafting, “avoidance needs” describe needs that are means to distance oneself from the negative aspects of work. Meanwhile “approach needs” cover needs that include seeking out certain feelings or experiences. Approach needs require a more proactive behavior than their counterpart, since they involve crafting a scenario where something occurs, rather than crafting a scenario where something does not occur. Thus, it may be possible that for some workers, approach needs are more difficult to fulfill (De Bloom et. al. 2020). It may also hinder people in effectively crafting experiences that could lead them to experience mastery due to how these needs may require more effortful and time consuming crafting, judging by the example set by the original researchers. Additionally, people with more proactive personalities have shown to be more engaged in crafting for the “harder” approach needs, while crafting for avoidance can be linked to stressful life situations (Kujanpää et. al. 2022). Both internal and external factors may influence the reaction of an individual worker to unfinished tasks and affective rumination over them, which the NBOJC theory may be able to adapt to to reflect different strategies and life situations of affected workers.

### **Needs and Need fulfillment**

Some of the needs De Bloom et. al. focused on in their theory have been part of past research on dealing with work related rumination in the context of recovery activities. It seems reasonable to assume that crafting for said needs to experience them will lead to similar positive results, based on finding by Kujanpää et. al. (2022). Psychological detachment is the most commonly investigated one and was often believed to measure the same variables as work related rumination, but current papers suggest that both are different yet highly correlated (Weigelt et. al. 2023). Psychological detachment refers to how well a person can mentally separate their private life from their work life and is positively correlated with feelings of being relaxed and negatively correlated with negative morning affect (Park et. al. 2015). Detachment can be facilitated by using strategies to efficiently block out work related distractors (Reinke et. al. 2023), by creating a favorable environment with other people during social activities (Feuerhahn et. al. 2012) and through self-suggestion to foster immersion into the activity (Lukka 2014). Immersion into a detaching activity was shown to help in buffering against negative intrusive thoughts combined with a task that also included a degree of mastery, namely playing the video game Tetris (James et. al. 2015). Relaxation in the evening has been related to serenity (Sonnentag and Binnewies 2008) and social activities, which also foster affiliation, have proven effective in helping workers abstain from work related thoughts (Brummelhuis & Bakker 2012) and were shown to make various other activities more effective in how they help participants cover their other needs (Alameer et. al. 2023). The autonomy need mirrors the needs which control theory describes, which as previously mentioned are what may be threatened through unfinished work tasks (Weigelt et. al. 2019) and their fulfillment is also correlated with positive valence (Dettmers et. al. 2016). The accumulated research on the positive effects the fulfillment of DRAMMA needs included in the needs based crafting model lead us to the assumption that each person would ideally try to craft for the needs they feel are not satisfactorily met due to current job stressors, like unfinished tasks and the affective rumination that tracks with them, in order to best alleviate their effects (De Bloom et. al. 2020).



Therefore the hypothesis of this paper is, under the assumption that the link between unfinished tasks and affective rumination holds:

*Hypothesis 1:* Unfinished tasks and needs-based off-job crafting interact to predict affective rumination. Needs based off job crafting alleviates the link between unfinished tasks and affective rumination.

## Methods

### Recruitment

We recruited participants by sending an invitation via various social media platforms. The only condition to participate was to be working at least part-time. Participants' responses were gathered through questionnaires. We received responses from 268 participants, from which we excluded 69. We excluded 68 participants because of incomplete data: 19 participants did not answer any questions, 11 participants gave their consent but did not participate further, 17 participants stopped the survey after consenting and filling in their demographic information and 21 participants were removed because they forgot to fill in at least one item in each of our core variables of interest, affective rumination and unfinished tasks. One participant did not consent. Out of the 199 remaining participants, five participants did not answer at least one of the questions on the NBOJC scale and two participants did not answer at least one question on the unfinished tasks scale, resulting in a slight imbalance between the sample sizes of unfinished tasks, affective rumination and NBOJC. The remaining answers by these participants were kept in the data due to not meaningfully impacting the core analysis. This led to a sample of  $n = 197$  for Unfinished tasks and  $n = 194$  for NBOJC. Affective rumination remained at  $n = 199$ .

### Participants

Our convenience sample contains people of different nationalities, most being from Germany ( $n = 107$ ), Austria ( $n = 24$ ), and Spain ( $n = 22$ ) (see appendix for more details on

participants' nationalities). Seventy-five participants conducted the survey in English and  $n = 124$  participants conducted the survey in German. Participants from non-German speaking countries exclusively conducted the survey in English, while a few participants from Germany, Austria and Switzerland ( $n = 13$ ) also chose to conduct the survey in English. Most participants were between 55 and 64 years old (32.2%). 40.2 percent of the sample were male ( $n = 80$ ), 59.3 percent female ( $n = 118$ ) and one participant identified as non-binary/other. The occupations are diverse with most participants working in healthcare, education, and legal positions. Most participants are working around 40 hours a week with a mean of 39.6 hours ( $SD = 12.6$ ). Participation was optional, and participants could stop the survey at any time. The study was exempt from formal examination by the Ethics Committee of the University of Groningen and fast tracked into approval.

## **Procedure**

We designed a cross-sectional questionnaire comprising validated scales addressing the main effect of unfinished tasks on affective rumination and psychological detachment. The independent variables of peace of mind, self-compassion, stress mindset and needs based off-job crafting served as moderating variables to this effect. Recruitment of our participants involved outreach via social networking platforms like Instagram and WhatsApp. We also used a snowball sampling technique in order to increase the reach of our survey, spreading recruitment messages via our social networks. The survey was conducted individually and took an approximate duration of 10 minutes to complete. Participants were given two weeks to complete the survey upon its rollout date. We provided all of the materials of the study in English and German. Participants selected their preferred language upon starting the survey, but were able to switch at any time. No rewards or compensation are provided for finishing the survey. No deception and debriefing were used.

*Unfinished tasks* were measured using the scale of Syrek et al. (2017); we assessed how frequently the respondents had incomplete work tasks left. The scale consists of six items (e.g., “I have not finished important tasks that I had planned to do”) to which responses were given using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

*Affective rumination* was measured using the scale developed by Cropley et al. (2011). For our study, we used the first factor, consisting of five items related to the emotional experience of being unable to switch off from work-related thoughts, labeled ‘affective rumination.’ This version of the scale has already been applied and validated in among others Weigelt et. al. 2019 paper as well as a paper by Pauli et. al. (2023) and consists of first-person statements (e.g., “I become tense when I think about work-related issues during my free time.”). Responses were given using a five-point Likert scale (1 = very seldom or never, 2 = seldom, 3 = sometimes, 4 = often, 5 = very often or always).

*Needs based off-job crafting* was measured using the scale by Kujanpää. et. al. (2022). This scale includes 18 statements about crafting one's activities according to one's needs during off-job time, preceded by an explanation of the concept and the relevant timeframe. The statements were solely first-person statements (e.g. “I’ve made sure to familiarize myself with new ideas, expand my knowledge or interests during off-job time.”) The scale is divided into 6 individual sub-factors: Detachment, Relaxation, Autonomy, Mastery, Meaning and Affiliation. Responses were given using a five-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = very often)

## **Data analysis**

Our hypothesis was tested using a multiple linear regression analysis predicting affective rumination with the interaction effect between the variables unfinished tasks and needs based off-job crafting. Prior to that, we tested the reliability of our measurements and plot descriptive statistics alongside correlations of our variables to have an initial look at our data and check

initial tendencies related to our hypothesis. Consequently, we test the assumptions of a linear regression analysis. We used residual plots to test for the assumptions of linearity and homoscedasticity. The assumption of normality was tested using a Q-Q plot and multicollinearity is tested by checking the variance inflation factor (VIF). All of our analyses were conducted using the software packages SPSS (Version 28) and JASP (Version 0.18.3), with SPSS being used for combining the scores on the question of each scale into a combined variables while the factor analysis, correlation analysis, linear regression analysis and the corresponding tests were conducted in JASP.

## **Results**

### **Preliminary steps**

In accordance with the formal conduct of a Bachelor thesis at the University of Groningen, this survey was carried out by a group of researchers, each investigating their own personal hypothesis. Psychological detachment, peace of mind, self-compassion and stress mindset were not relevant to the hypothesis of this paper and thus not included into the analysis.

For the analysis, items measuring the same construct were combined into one variable by summing up all scores within a construct and dividing by the number of items. Combined variables for unfinished tasks, affective rumination and needs based off-job crafting have been computed for this analysis to assess the effect of the constructs as a whole. The mean score for Unfinished Tasks was notably low at  $M = 2.203$  ( $SD = 0.771$ ), while Affective rumination was slightly higher at  $M = 2.594$  ( $SD = 0.855$ ). The mean value for the combined NBOJC variable was  $M = 3.483$ ,  $SD = 0.665$ .

### **Preliminary analysis**

We used Cronbach's alpha coefficient to check our internal consistency reliability. The reliability of our scales was consistently satisfactorily high ( $\alpha = .87$  for unfinished tasks,  $\alpha = .90$  for affective rumination, and  $\alpha = .93$  for NBOJC).

A factor analysis was conducted to check for noticeable individual sub-factors in the Needs based off-job crafting scale. The factor analysis ( $\chi^2 = 269.736$ ,  $df = 102$ ,  $p < .001$ ) showed a distinction between affiliation as its own unique factor, while most questions for avoidance needs loaded onto a combined factor, as did the remaining approach needs. However, within these factor groups most items did not reach a value above .7. For the whole factor matrix, see the appendix Table A4. In line with the theory behind needs based off-job crafting, the original one factor model will be chosen over the factors from the factor analysis for the remainder of the analysis. The correlations in the factor matrix are not universally high enough between the theoretical factors (above .7) to justify disregarding the original scale. Findings by Ho et. al. (2024) further support the use of a combined NBOJC factor.

A correlation analysis was run between the variables working hours, affective rumination and unfinished tasks to identify if people working less hours in part-time positions might skew the data. The correlation between affective rumination and working hours was weak ( $r = .104$ ) and not significant. The correlation between unfinished tasks and working hours was also rather weak ( $r = .192$ ), but significant with a p-value of  $p = .007$ . Due to these weak links, we did not deem it necessary to include working hours as a weighted factor into the main analysis.

### **Hypothesis test**

A correlation analysis (Table 1) was run between the variables NBOJC, affective rumination and unfinished tasks. The results show a moderate correlation between affective rumination and unfinished tasks  $r = .40$ ,  $p < .001$  and weak negative correlations between NBOJC and affective rumination  $r = -.21$ ,  $p = 0.004$  and unfinished tasks  $r = -.33$ ,  $p < .001$ .

A linear regression of Affective Rumination on Unfinished Tasks (Table 2) was performed to establish a link between the two constructs for the basis of the main analysis. The relevant

residual and Q-Q plots did not indicate any violations of the assumptions. The analysis yielded a correlation of  $r = .403$ . The corresponding model produced an unstandardized intercept of 1.622 and an unstandardized regression coefficient of  $y = .0445$ . The corresponding t-test ( $df = 1$ ) yielded a score of  $t = 6.144$  and a corresponding p-value of  $p = <.001$ , making the result significant at the  $\alpha = .05$  level. 16.2% of the variance in affective rumination was explained by the model.

**Table 1***Intercorrelations between Variables*

	Unfinished Tasks	Affective Rumination	NBOJC
Unfinished Tasks	-	.40**	-.33**
Affective Rumination		-	-.21*
NBOJC			-

Note:  $N = 199$

\*\* $p < .01$

\* $p < .05$

**Table 2***Coefficients - Reduced model*

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.622	.17		9.593	<.001		
Unfinished tasks	.45	.07	.40	6.144	<.001	1.000	1.000

Note: Affective rumination is the outcome variable.

**Table 3***Coefficients - Full model*

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF

(Constant)	1.635	.79		2.063	.04		
Unfinished Tasks	.58	.30	.54	1.924	0.06	.06	17.378
NBOJC	.03	.22	.02	0.123	.90	.15	6.629
Interaction	-.06	.09	-.17	-0.633	.53	.06	16.458

Note: Affective rumination is the outcome variable.

Interaction: Unfinished Tasks × NBOJC

We conducted a linear regression to test whether the interaction effect between unfinished tasks and NBOJC had a significant effect on the scores of affective rumination (Table 3). The variables were included manually, with unfinished tasks being added first NBOJC being added second and the interaction effect was added last. The relevant residual and Q-Q plots did not indicate any violations of the assumptions. However, there appeared to be multicollinearity issues with values well above 5 (Table 3). The t-tests for interaction effect between unfinished tasks and NBOJC in the extended model was not significant at  $t = -0.633$ ,  $p = 0.527$ . The t-test for the NBOJC variable in the model also yielded a non-significant result with  $t = 0.123$ ,  $p = 0.902$ . The model explained 16% of the variance within affective rumination. These results do not align with our hypothesis that NBOJC would alleviate the link between unfinished tasks and affective rumination, for which we expected a significant interaction effect in the model.

Meanwhile, the significant connection between affective rumination and NBOJC does somewhat align with our hypothesis by showing that NBOJC may be an important variable for affective rumination. However the missing interaction effect with unfinished tasks indicates that the relationship works differently than what we've assumed.

### **Additional analysis**

Additionally, based on the correlation results a simple linear regression was conducted to gather more information about the direct relationship between affective rumination and NBOJC. The relevant residual and QQ plots did not indicate any violations of the assumptions. The

regression yielded a significant result with a T-statistic of  $t = -2.917$  and a corresponding p-value of  $p = 0.004$ . The unstandardized intercept of the corresponding model holds a value of  $= 3.500$ , with the unstandardized regression coefficient of NBOJC being  $-0.262$ , indicating that higher scores on NBOJC lead to people reporting slightly lower scores on affective rumination. The correlation between the two variables was  $r = 0.206$ .  $R^2 = 0.042$  showed that 4.2% of the variance in Affective rumination can be explained by NBOJC.

### **Discussion**

We wanted to investigate whether needs based crafting during off job time would buffer against affective rumination over unfinished work tasks. Following the model by De Bloom et. al. (2020), the relationship between the two constructs was assessed for the first time. Because NBOJC is a flexible theory on how and which needs people cater to in their life, with an established spill-over effect between different life domains (Kujanpää et. al. 2022), we predicted that NBOJC may alleviate the link between unfinished tasks and affective rumination for workers. We also assumed that crafting for specific and relevant needs that are threatened by unfinished tasks may be a crucial variable to counter negative aspects of affective rumination.

In a cross-sectional study, we sent out a questionnaire in English and German, which yielded a sample of mostly European workers. The goal was to assess whether there was an interaction effect between NBOJC and unfinished tasks to predict affective rumination. The results of our study ended up not aligning with our hypothesis that needs based off-job crafting would alleviate the link between affective rumination and unfinished tasks. While the link between unfinished tasks and affective rumination was re-confirmed, the contribution of NBOJC to the model and the interaction effect between NBOJC and unfinished tasks were not significant. However, a significant relationship between NBOJC and affective rumination was present, thereby we can assume NBOJC may be a relevant variable to predict affective rumination in a way different than we initially believed.



## Limitations and strengths

While the snowballing sampling we also utilized had the positive effect of reaching a larger and fairly pan-European sample, it still led to a somewhat homogeneous mostly western sample in both educational background and job positions of the participants. The participants were often highly educated and worked in governmental/EU official positions, law and education. The low average scores for unfinished tasks results also showed that many participants did not experience them frequently.

A few participants noted that the survey provided them a nice opportunity to reflect on a central issue within their life, thus the chosen scales and concepts seem to appear as highly relevant and even helpful to some people. This could also point in favor of the flexibility of the needs based crafting model, as the above average mean score for NBOJC indicates that many people saw their behavior reflected in the scale. De Bloom et. al. established that crafting is highly individualized (2020) and the reception indicates that this may be a recommended behavioral strategy to reflect and reach a multitude of people where they stand.

The fact that we provided a bilingual survey may have improved our reach and also lowered the barrier of entrance for fluent speakers of German, but the validation study of the German version of the NBOJC scale is currently still under revision so it may have worsened the validity of our measures as well.

As is often the case in cross-sectional studies, common method variance may affect the validity of our results and construct reliability (Podsakoff et al. 2024). When participants respond to different scales in the same format, they may reply in a more consistent manner due to a lack of motivation. This may enhance the relationships between different measures (Podsakoff et al. 2024).

Additionally, because our study was based on correlations without any experimental control, our claims generally can not equal causation (Aldrich 1995).

### **Theoretical and practical implications**

As the needs based crafting theory is not yet strongly researched, we hope that our study may contribute to a growing body of studies that delve into the strengths and potential shortcomings of needs based crafting and its different applications. Significant negative correlation with unfinished tasks and affective rumination show that the theory may be suited to be applied for related issues in the fields of unfinished tasks and rumination.

A lack of perceived nonwork time may also explain the non-significant interaction. NBOJC behavior could potentially not be utilized if the participants lack off-job time. Thereby, the questions may not reach participants who are currently affected by unfinished tasks, making the theory better suited for investigating phenomena and people who do not consider their mental resources to be occupied by work and work-like activities. A few participants mentioned care work as such an instance, but the model of De Bloom et. al. (2020) does account for time spent with family in the “affiliation” subscale. This could mean that care work may not get universally recognized as needs based crafting behavior for affiliation. This proposes a similar problem to what Alameer et. al saw in recovery activity literature: Activities that get associated with certain needs in literature may not be used to cover these needs (2023). This could also hold for NBOJC. In this example, care work and spending time with one's family could be associated with crafting for affiliation because of the time spent on it, but it doesn't reflect the individual's experience of their needs and thus is not perceived as NBOJC. A different explanation could be that NBOJC is only recognized as such when it arises from the individual's effort to actively craft for a certain need, since this is the core of the theory (De Bloom et. al. 2020). Care work could for example fall out of this, since it will be something the individual gets confronted with even without crafting for it.

For both theoretical and practical purposes, it might be worth thinking about the robustness of unfinished tasks and the following affective rumination. Techniques that work to

alleviate stress and other negative feelings might just lack the strength to intervene with the relationship between the two variables, since rumination may be a natural reaction.

Alternatively, the affective rumination validated by the Weigelt et. al. study (2019) could measure a type of rumination that might have too severe consequences. They have brought up issues following from affective rumination over unfinished tasks like burnout as potential consequences, for which NBOJC might not be strong enough to alleviate the link. Recovery activities, as described by among others Sonnentag and Binnewies (2008) focus on experiencing needs satisfaction through certain activities, which may have more noticeable effects than crafting.

### **Future outlook**

Looking into explanatory variables might be a suitable extension of the needs based crafting theory. Due to comments regarding lack of nonwork time, boundary management came to our mind as a relevant variable. Kossek et. al. (2012) worked on identifying clusters based around the importance workers placed on their career and their family and how well they were able to separate non-work life from work behavior through boundary management. They identified clusters of workers who are not able to put boundaries between the two domains and thus engage in for the domain unfitting behavior (e.g. work behavior during off-job time). The needs based crafting model implies that positive effects of crafting do spillover between off job time and on job time (De Bloom et. al. 2020), which has been validated by Kujanpää et. al. (2022), implying that the model assumes a non-strict boundary between the two domains. Future research could investigate whether workers with less boundary management are more strongly affected by NBOJC spill-over into the work domain, which could affect the relationship between work related issues such as unfinished tasks and NBOJC. It could also investigate whether “fitting” behavior for a life domain leads to a stronger spill-over effect than “unfitting” behavior (Kossek et. al. 2012) for the relevant domain.

Kujanpää et. al.'s study already established a link between personality traits as well as life events and certain crafting behavior (2022), so future research might use personality traits as moderating variables when investigating possible links between NBOJC and concepts such as affective rumination. If certain personality traits make workers more prone to craft for certain needs, these needs may be the ones that are significantly correlated to affective rumination when combined with unfinished tasks.

Additionally, research with younger participants, more workers from non-western European cultures and more diverse fields could greatly improve the generalizability of such studies to give insight into differences among age groups in how they handle affective rumination or crafting of their off-job time and if differences occur.

## **Conclusion**

Overall, according to our results, NBOJC by itself can not alleviate the link between unfinished tasks and affective rumination. However, the model is still relatively new and each study that implies a relevant link to other constructs, such as ours through the correlation to unfinished tasks and affective rumination, helps us to expand the theory. Meanwhile, the link between unfinished tasks and affective rumination still seems robust and the negative consequences of it (Weigelt et. al. 2019) will likely continue to be a relevant research problem in the future.

## References

- Alameer, K. M., Uitdewilligen, S., & Hülshager, U. R. (2023). What are the active ingredients in recovery activities? Introducing a dimensional approach. *Journal of Occupational Health Psychology, 28*(4), 239–262. <https://doi.org/10.1037/ocp0000354>
- Aldrich, J. (1995). Correlations genuine and spurious in Pearson and Yule. *Statistical Science, 10*(4). <https://doi.org/10.1214/ss/1177009870>
- Brummelhuis, L. L. T., & Bakker, A. B. (2012). Staying engaged during the week: The effect of off-job activities on next day work engagement. *Journal of Occupational Health Psychology, 17*(4), 445–455. <https://doi.org/10.1037/a0029213>
- Carver, C. S., & Scheier, M. F. (1982). Control theory: A useful conceptual framework for personality–social, clinical, and health psychology. *Psychological Bulletin, 92*(1), 111–135 <https://doi.org/10.1037/0033-2909.92.1.111>
- Cropley, M., & Zijlstra, F. R. H. (2011). Work and rumination. In J. Langan-Fox & C. L. Cooper (Eds.), *Handbook of stress in the occupations* (pp. 487–501). Northampton, MA: Edward Elgar Publishing.  
<http://dx.doi.org/10.4337/9780857931153.00061>
- De Bloom, J., Vaziri, H., Tay, L., & Kujanpää, M. (2020). An identity-based integrative needs model of crafting: Crafting within and across life domains. *Journal of Applied Psychology, 105*(12), 1423–1446. <https://doi.org/10.1037/apl0000495>

- Dettmers, J., Vahle-Hinz, T., Bamberg, E., Friedrich, N., & Keller, M. (2016). Extended work availability and its relation with start-of-day mood and cortisol. *Journal of Occupational Health Psychology, 21*(1), 105–118. <https://doi.org/10.1037/a0039602>
- Feuerhahn, N., Sonnentag, S., & Wöll, A. (2012). Exercise after work, psychological mediators, and affect: A day-level study. *European Journal of Work and Organizational Psychology, 23*(1), 62–79. <https://doi.org/10.1080/1359432x.2012.709965>
- James, E. L., Bonsall, M. B., Hoppitt, L., Tunbridge, E. M., Geddes, J., Milton, A., & Holmes, E. A. (2015). Computer game play reduces intrusive memories of experimental trauma via Reconsolidation-Update mechanisms. *Psychological Science, 26*(8), 1201–1215. <https://doi.org/10.1177/0956797615583071>
- Jimenez, W. P., Hu, X., & Xu, X. V. (2021). Thinking about thinking about work: A meta-analysis of off-Job positive and negative work-related thoughts. *Journal of Business and Psychology, 37*(2), 237–262. <https://doi.org/10.1007/s10869-021-09742-7>
- Kossek, E. E., Ruderman, M. N., Braddy, P. W., & Hannum, K. M. (2012). Work–nonwork boundary management profiles: A person-centered approach. *Journal of Vocational Behavior, 81*(1), 112–128. <https://doi.org/10.1016/j.jvb.2012.04.003>
- Kujanpää, M., Syrek, C., Tay, L., Kinnunen, U., Mäkikangas, A., Shimazu, A., Wiese, CW., Brauchli, R., Baue,r GF., Kerksieck, P., Toyama, H., de Bloom, J. (2022) Needs-based off-job crafting across different life domains and contexts: Testing a novel conceptual and measurement approach. *Front. Psychol.* 13:959296. doi: 10.3389/fpsyg.2022.959296

- Lukka, L. (2014). The psychology of immersion. *The cutting edge of nordic larp*, 81-92.  
ISBN, 9163752174, 9789163752179
- Ho, K. L., Mäkikangas, A., Kerksieck, P., Morstatt, A. I., de Bloom, J., & Bauer, G. F. (o. J.). Job and off-job crafting profiles: Time-lagged relationships with job, home and personal resources and well-being outcomes. *Journal of Occupational and Organizational Psychology*, n/a(n/a). <https://doi.org/10.1111/joop.12506>
- Park, Y., Fritz, C., & Jex, S. M. (2015). Daily Cyber Incivility and Distress: The moderating roles of resources at work and home. *Journal of Management*, 44(7), 2535–2557.  
<https://doi.org/10.1177/0149206315576796>
- Podsakoff, P. M., Podsakoff, N. P., Williams, L. J., Huang, C., & Yang, J. (2024). Common method bias: It's bad, it's complex, it's widespread, and it's not easy to fix. *Annual Review of Organizational Psychology and Organizational Behavior*, 11(1), 17–61.  
<https://doi.org/10.1146/annurev-orgpsych-110721-040030>
- Reinke, K., Niederkrome, L., & Ohly, S. (2023). Boundary work tactics and their effects on information and communication technology use after hours and recovery. *Journal of Personnel Psychology*. <https://doi.org/10.1027/1866-5888/a000335>
- Sheldon, K. M., Abad, N., Ferguson, Y., Gunz, A., Houser-Marko, L., Nichols, C. P., & Lyubomirsky, S. (2009). Persistent pursuit of need-satisfying goals leads to increased happiness: A 6-month experimental longitudinal study. *Motivation and Emotion*, 34(1), 39–48. <https://doi.org/10.1007/s11031-009-9153-1>

- Sonnentag, S. (2001). Work, recovery activities, and individual well-being: A diary study. *Journal of Occupational Health Psychology*, 6(3), 196–210.  
<https://doi.org/10.1037/1076-8998.6.3.196>
- Sonnentag, S., Binnewies, C., & Mojza, E. J. (2008). “Did you have a nice evening?” A day-level study on recovery experiences, sleep, and affect. *Journal of Applied Psychology*, 93(3), 674–684. <https://doi.org/10.1037/0021-9010.93.3.674>
- Syrek, C. J., Weigelt, O., Peifer, C., & Antoni, C. H. (2017). Zeigarnik’s sleepless nights: How unfinished tasks at the end of the week impair employee sleep on the weekend through rumination. *Journal of Occupational Health Psychology*, 22(2), 225–238. <https://doi.org/10.1037/ocp0000031>
- Weigelt, O., Syrek, C. J., Schmitt, A., & Urbach, T. (2019). Finding peace of mind when there still is so much left undone—A diary study on how job stress, competence need satisfaction, and proactive work behavior contribute to work-related rumination during the weekend. *Journal of Occupational Health Psychology*, 24(3), 373–386.  
<https://doi.org/10.1037/ocp0000117>
- Weigelt, O., Seidel, J., Erber, L., Wendsche, J., Varol, Y. Z., Weiher, G. M., Gierer, P., Sciannimanica, C., Janzen, R., & Syrek, C. J. (2023). Too Committed to switch off—Capturing and organizing the full range of work-related rumination from detachment to overcommitment. *International Journal of Environmental Research and Public Health*, 20(4), 3573. <https://doi.org/10.3390/ijerph20043573>



Zeigarnik, B. (1927). *Das Behalten erledigter und unerledigter Handlungen*.

<http://ci.nii.ac.jp/ncid/BA17885471>

## Appendix

**Table A1**

*Complete Variables Captured in Survey*

---

Unfinished Tasks
Affective Rumination
Psychological Detachment
Self-Compassion
Peace of Mind
Stress Mindset
Needs-Based Off-Job Crafting

---

**Table A2**

*What is your nationality?*

---

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Austria	24	12.1	12.1	12.1
	Belgium	9	4.5	4.5	16.7
	Bulgaria	1	.5	.5	17.2
	Croatia	1	.5	.5	17.7
	Denmark	1	.5	.5	18.2
	Estonia	3	1.5	1.5	19.7
	Finland	1	.5	.5	20.2
	France	3	1.5	1.5	21.7
	Germany	107	53.8	54.0	75.8
	Greece	2	1.0	1.0	76.8
	Hungary	1	.5	.5	77.3
	Italy	3	1.5	1.5	78.8
	Latvia	1	.5	.5	79.3
	Lithuania	1	.5	.5	79.8
	Netherlands	2	1.0	1.0	80.8
	Poland	7	3.5	3.5	84.3
	Portugal	1	.5	.5	84.8
	Romania	1	.5	.5	85.4
	Russia	1	.5	.5	85.9
	Spain	22	11.1	11.1	97.0
	Switzerland	2	1.0	1.0	98.0
	United Kingdom	1	.5	.5	98.5
	United States	3	1.5	1.5	100.0
	Total	198	99.5	100.0	
Missing	System	1	.5		
Total		199	100.0		

---

**Table A3**

*Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std. Deviation
Unfinished Tasks	197	1.0	4.7	2.2	0.8
Affective Rumination	199	1.0	5.0	2.6	0.9
NBOJC	194	1.0	5.0	3.5	0.7

**Table A4***Factor analysis NBOJC***Factor Loadings**

	Factor 1	Factor 2	Factor 3	Uniqueness
NBOJC_Detache3	0.884			0.308
NBOJC_Detache2	0.868			0.329
NBOJC_Relax2	0.777			0.393
NBOJC_Detache1	0.724			0.479
NBOJC_Relax1	0.696			0.529
NBOJC_Auto1	0.586			0.431
NBOJC_Auto2	0.584			0.361
NBOJC_Relax3	0.527			0.684
NBOJC_Mastery3		0.881		0.388
NBOJC_Mastery2		0.822		0.460
NBOJC_Mean1		0.701		0.475
NBOJC_Mastery1		0.596		0.445
NBOJC_Mean3		0.561		0.521
NBOJC_Mean2		0.516		0.612
NBOJC_Auto3		0.504		0.410
NBOJC_Afilli2			0.888	0.248
NBOJC_Afilli1			0.883	0.224

Note. Applied rotation method is promax.

**Table A5***Coefficients - NBOJC \_ Affective rumination*

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3.500	.32		11.005	<.001		

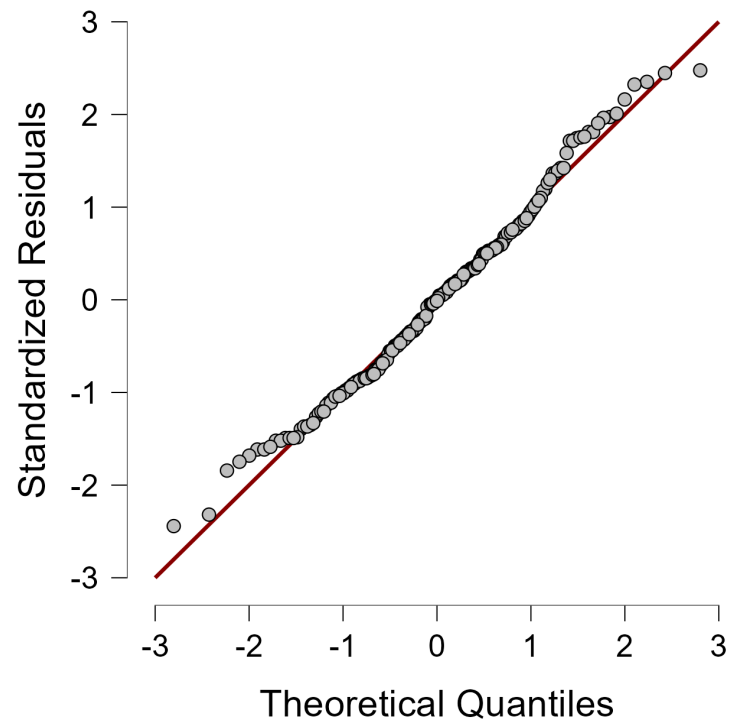
$\bar{NBOJC}$	-.26	.09	-.21	-2.917	0.004	1.000	1.000
---------------	------	-----	------	--------	-------	-------	-------

---

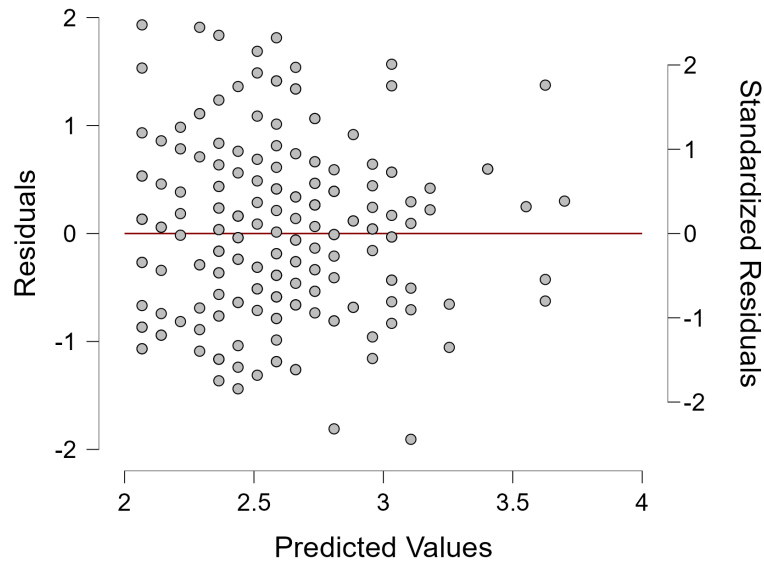
Note: Affective rumination is the outcome variable.

**Figure A1**

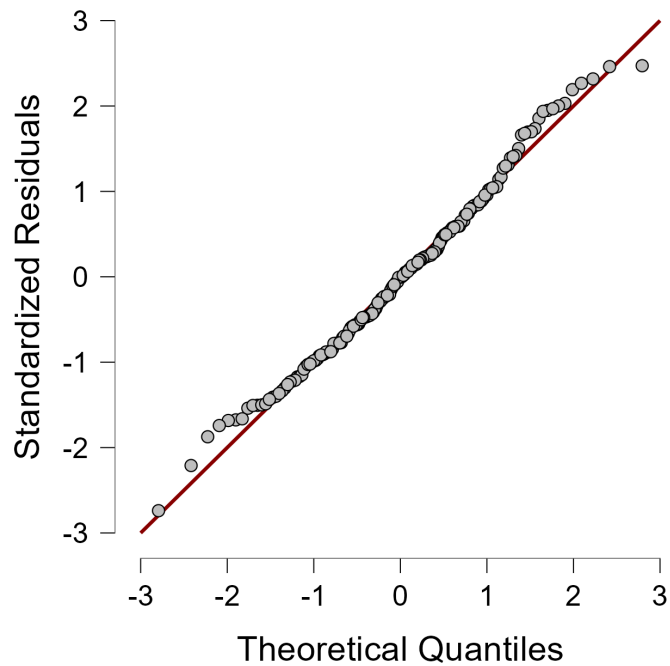
Q-Q Plot - Unfinished tasks \_ affective rumination

**Figure A2**

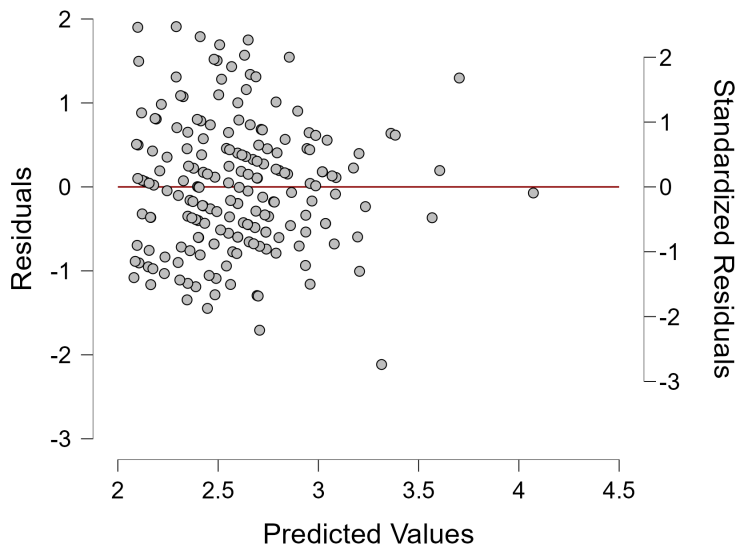
Residual Plot - Unfinished tasks \_ affective rumination

**Figure A3**

*Q-Q Plot - Unfinished tasks x NBOJC \_ affective rumination*

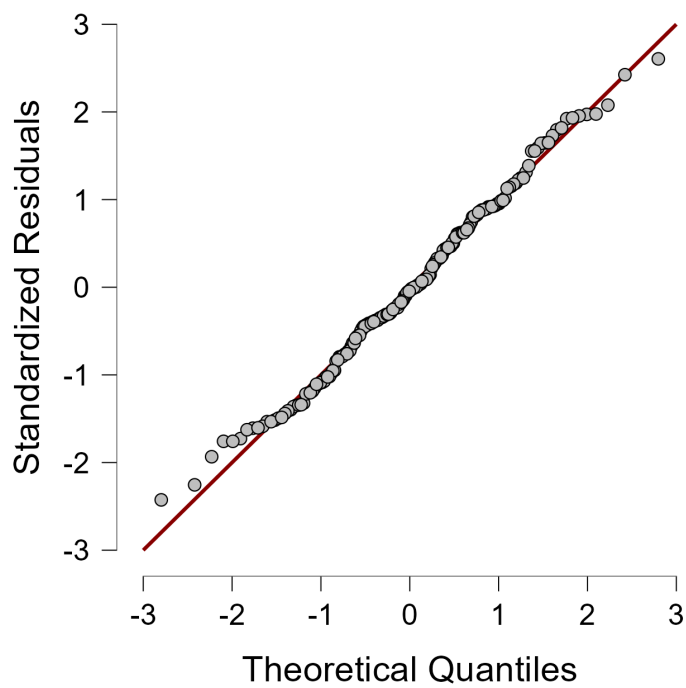
**Figure A4**

*Residual Plot - Unfinished tasks x NBOJC \_ affective rumination*



**Figure A5**

*Q-Q Plot - NBOJC\_ affective rumination*



**Figure A6**

*Residual Plot - NBOJC\_ affective rumination*

