
Creating a perfect job on a daily basis

A Day Reconstruction Study

Master thesis

This master thesis examines the relationships between job crafting, psychological need satisfaction, work engagement and job performance on a general, daily and task-level.

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“The greatest achievement of the human spirit is to live up to one's opportunities and make the most of one's resources.”

Vauvenargues, Marquis de

Abstract

This day reconstruction study investigated whether and how day-level job crafting influences work engagement and in turn how this influences job performance of employees. The satisfaction of psychological basic needs, on the task-level, was studied as a possible underlying process that can further qualify the relationship between job crafting and work engagement. On the basis of the Job Demands-Resources model and the Self-Determination Theory, several hypotheses were formed. A total of 80 participants, mostly from the consultancy and educational branch, filled in a general questionnaire and a day reconstruction diary study, providing 297 days of data with a total of 2270 tasks. The results of the multilevel analyses offered partial support for the hypotheses. The findings show that employees can contribute daily to their own work engagement by increasing their own structural resources. In addition, by daily increasing structural and social resources, they can enhance their own task-level work engagement, through the mediation of task-level psychological need satisfaction. This implies that the more the task satisfies the employee's need for autonomy, competence and relatedness, the more engaged the employee will be to that task. In addition, the task-level work engagement is contingent on the day-level work engagement. These findings illuminate the benefits of job crafting and an underlying process explaining them.

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1. Introduction

In former days, when the scientific management movement was at its peak, employees did not enjoy much autonomy on the work floor (Taylor, 1967). Nowadays, they decide for a large part what they do and how they do it (Oldham, & Hackman, 2010). These proactive employees also take a more active part in shaping their job to fit their personal needs and desires. This phenomenon is called job crafting (Berg, Dutton, & Wrzesniewski, 2008; Wrzesniewski & Dutton, 2001). Where in former days job (re)design was done by the organization (top-down), job crafting is job (re)design done by the employee (bottom-up) (Hornung et al., 2010). Job crafting is not always known to management or in line with the goals of the organization. Nevertheless it can be beneficial for the organization.

Job crafting can, for example, help an employee to cope with ongoing changes in turbulent times. This makes job crafting a strategic advantage during times of change (Van den Heuvel, Demerouti, Bakker & Schaufeli, 2010). Another reason why job crafting can be beneficial for the organization, according to recent studies, is because it is positively related to work engagement (Bakker, 2010; Bakker, 2011; Petrou, Demerouti, Peeters, Schaufeli & Hetland, 2012). Work engagement is a positive state of mind related to the job that is characterized by vigor, dedication and absorption (Demerouti & Bakker, 2007). In turn, work engagement, measured as a general well-being indicator, has been found to be positively related to individual job performance (Bakker, 2009; Halbesleben & Wheeler, 2008). When job crafting leads to work engagement and work engagement in turn leads to better performance, it can be argued that job crafting is beneficial for organizations.

Little research focused on the processes underlying the relationship between job crafting and work engagement. Recent studies took a closer look at the influence of psychological need satisfaction on work engagement (Deci, Ryan, Gagné, Leone, Usunov & Kornazheva, 2001; Howell, Chenot, Hill and Howell, 2011; Reis, Sheldon, Gable, Roscoe and Ryan, 2000; Van den Broeck, Vansteenkiste, and De Witte, 2008). Van den Broeck et al. (2008) studied the role of psychological need satisfaction in the relationships between job characteristics, burnout and work engagement. The results of this study suggest that need satisfaction intervenes in the relationship between job characteristics and the dimension vigor of work engagement. The other two dimensions of work engagement, dedication and absorption, were not examined.

More recently, the focus has shifted from general measurements of work engagement and well-being, to measurements of daily fluctuations in work engagement (Bakker & Bal, 2010; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009). In a recent study (Xanthopoulou et al., 2009) work engagement measured on a daily basis was a significant predictor of day-level financial returns. These diary studies acknowledge within-person fluctuations as considerable and valuable information. Between-person studies examine general tendencies, in contrast to within-person studies that focus on the role of momentary states (Xanthopoulou et al., 2009). These studies regard questions about fluctuations between days. The day reconstruction method (DRM; Kahneman, Krueger, Schkade, Schwarz & Stone, 2004) focuses on an even more detailed measurement level by assessing how people spend their time and how they experience various activities within the day.

Even with the growing number of studies examining job crafting, a lot of questions have remained unanswered. For instance, evidence on correlates of job crafting and its effect on daily work behavior and work outcomes is still scarce. In this master thesis job crafting will be explored further. This study aims to respond to the request of Berg, Wrzesniewski & Dutton (2010) to deepen the understanding of patterns and consequences of this important form of employee proactivity. The main goal of this master thesis is to contribute to the job crafting literature by expanding the knowledge about the relationship between job crafting and work engagement. This will be done on the general level, the day-level and even on the task-level. The relationship between daily work engagement and daily performance will also be studied. Finally, the role of psychological need satisfaction will be explored on the within-person, activity level, and on the between-person level. The research questions of this thesis are: (1) “Does daily job crafting have positive outcomes on the day-level for both the employee (work engagement) and the employer (performance) and (2) “Can this relationship be further qualified by examining the role of psychological need satisfaction on the task-level as an underlying process?”

To answer these questions, first the concept of job crafting is defined in accordance with the Job Demands-Resources model (JD-R model) of Bakker and Demerouti (2007). Secondly is hypothesized, about the relationship between four types of day-level job crafting and work engagement. Thirdly is discussed, the self-determination theory of Deci and Ryan (2000), and in particular the concept of psychological need satisfaction, as a possible underlying process that can further qualify the relationship between job crafting and work

engagement. Finally, the relationship between day-level work engagement and day-level job performance is examined.

2. Job crafting, psychological need satisfaction, work engagement and performance

2.1. Job crafting: conceptualization

The phenomenon job crafting is a proactive work behavior that describes actions employees take to shape their job to fit their personal needs and desires (Tims & Bakker, 2010). The originators of the phenomenon job crafting defined it as physical and cognitive changes individuals make in the task or relational boundaries of their work (Wrzesniewski & Dutton, 2001). Both definitions imply that job crafting is an action and those who undertake it can be called job crafters.

According to Wrzesniewski and Dutton (2001), employees can craft their job by changing three aspects of their work boundaries, namely their task boundaries, their cognitive task boundaries and/or their relational boundaries. Even in very strict and routine jobs employees have some degree of freedom to influence certain aspects of their work. Examples of changing task boundaries are altering the type of tasks or the number of tasks one performs. Changing cognitive task boundaries can be done by altering the view of work. This way not the job is changed but the way one sees the job. For instance, cleaning workers in a hospital may change the view of their job by realizing that their work contributes greatly to the health of the patients, because of the importance of a hygienic environment during recovery. An example of changing relational boundaries is altering with whom one interacts at work. For instance, arranging to work more with colleagues one likes and less with colleagues one dislikes (Wrzesniewski & Dutton, 2001).

In this study, job crafting operationalized in accordance with the Job Demands-Resources model (JD-R model) of Bakker and Demerouti (2007). This operationalization focuses on specific job characteristics that can be crafted (Tims, Bakker & Derks, 2012). According to this conceptualization, job crafters can either shape their job by changing their job resources or by changing their job demands. Moreover, when framed in the JD-R model, job crafting activities can be divided into four conceptually different dimensions, namely; (1) increasing the level of structural resources, (2) increasing the level of social resources, (3) increasing the level of challenging job demands, and (4) decreasing the level of hindrance job demands (Tims & Bakker, 2010). Employees can, for example, increase their own structural resources by increasing their autonomy and seek for learning opportunities and ways to develop their own skills.

They can increase their social resources by seeking feedback and social support of colleagues or of their supervisor. Increasing job demands can, for example, be done by taking on more challenging tasks or tasks in line with their talents and interests. Giving up tasks to make sure their work is mentally less stressful is an example of decreasing hindrance job demands (Tims et al., 2012). In the current study the conceptualization of job crafting provided by Tims et al., (2012) will be used to further explore the correlates of job crafting.

To understand the different dimensions, proposed by Tims et al. (2012), it is important to understand what job resources and job demands are and how they are related to work engagement. Therefore, the Job Demands-Resources model (JD-R model) of Bakker and Demerouti (2007) will be discussed below.

2.2. The Job Demands – Resources model

The JD-R model is a heuristic balance model of employee well-being that proposes an interaction between two sets of work characteristics, namely job demands and job resources. Moreover, the JD-R model involves two processes, the energetic process and the motivational process. These dual processes play a role in the development of job strain and motivation. The energetic process is related to the presence of job demands and the absence of job resources and is related to burnout. The motivational process is related to the presence of job resources and is related to work engagement (Schaufeli & Bakker, 2004; Van den Broeck, van Steenkiste, de Witte & Lens, 2008).

Job demands and job resources are both characteristics of the job. Job demands require sustained effort and can be physical, emotional and/or mental. They can be seen as the costs of the job. According to the JD-R model they can be defined as evoking job strain. Examples of job demands are work pressure, emotional demands and demands from the physical environment. Job resources, on the other hand, work as buffers that help the employee to deal with the demands. They are defined as characteristics of the job that help to achieve work goals and stimulate personal growth and development of the employee. According to the JD-R model they are positively related to motivation. Examples of job resources are feedback, social support and autonomy (Bakker & Demerouti, 2007).

Job resources are very important predictors of positive work outcomes, such as work engagement (Bakker, Demerouti & Euwema, 2005). Especially jobs with both high demands and high resources can lead to high work engagement (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007).

Work engagement can be defined as a positive state of mind that is related to the job and can be characterized by vigor, dedication and absorption. Vigor means having high levels of energy, putting a lot of effort in the job and not giving up easily when confronted with difficulties. Dedication is defined as a willingness to work hard, being enthusiastic about the job and feeling challenged by the job. The characteristic absorption is conceptualized as being fully concentrated and focused on the job (Bakker & Demerouti, 2007). An engaged employee is intrinsically motivated to work hard and willing to go the extra mile.

2.3. Job crafting and work engagement: day-level

As mentioned before, job resources are positively related to work engagement. Therefore, it is reasonable to expect increasing structural and social resources to enhance work engagement. Moreover, recent studies propose job crafting to be related to work engagement (Bakker, 2010; Bakker, 2011; Petrou et al., 2012). This relationship will be explored further below.

According to the JD-R model, job resources are the main predictors of work engagement and these resources gain their salience in the context of high job demands. Therefore, it is likely that the job crafting dimensions, operationalized in accordance with the JD-R model, are in turn related to work engagement. More specifically, increasing structural and increasing social resources are expected to relate positively to work engagement. Since resources gain their salience in the context of high demands, increasing challenging demands is expected to relate positively to work engagement. Decreasing hindrance demands, on the other hand, is expected to relate negatively to work engagement, since reducing workload also reduces the necessity for action, and in turn, the optimal level of challenge in their daily activities (Csikszentmihalyi, 1990).

In contrast to studies which examined work engagement on a general (trait) level, a recent study of Petrou et al. (2012) focused on work engagement measured on a day-to-day level. They tried to answer the question whether job crafting is continuous or a single incident producing lasting changes. Conceptualizing job crafting as a day-level phenomenon, as opposed to general level job crafting, offers the advantage of capturing the fluctuating nature of job crafting. Job crafting behaviors were studied on a daily basis and linked to daily work engagement. Another advantage of examining daily fluctuations is that recall biases are reduced (Petrou et al., 2012), because the time between the occurrence of events and completing the questionnaire is limited. This method also provides the opportunity to control for general individual tendencies and therefore sheds light on fluctuations within persons.

The current study goes even further by examining fluctuations within the day, on the task level. This will give a more detailed view on the within-day level, wherein variations on the work activity level are examined.

In their diary study Petrou et al. (2012) examined on day-level the relationships of seeking resources, seeking challenging demands and reducing demands with work engagement. The results showed that individuals not only differ from each other in the degree to which they engage in job crafting activities (between), they also differ in the degree to which they engage in job crafting activities from day to day (within). Particularly on days that the employees crafted their job by seeking challenges, they were more engaged. They concluded that seeking challenges was positively related and reducing demands was negatively related to work engagement. However, they found there was no significant relationship between day-level work engagement and seeking resources (both social and structural were taken together) at the within level. They did find that day-level work engagement was significantly related to seeking resources at the between level (Petrou et al., 2012). Based on the study of Petrou et al. (2012) and the previous stated literature regarding the JD-R model, the following hypothesis is formulated (shown in Figure 1):

Hypothesis 1: The dimensions increasing structural resources, increasing social resources and increasing challenging demands of job crafting are positively related to daily work engagement. The dimension decreasing hindrance demands of job crafting is negatively related to daily work engagement.

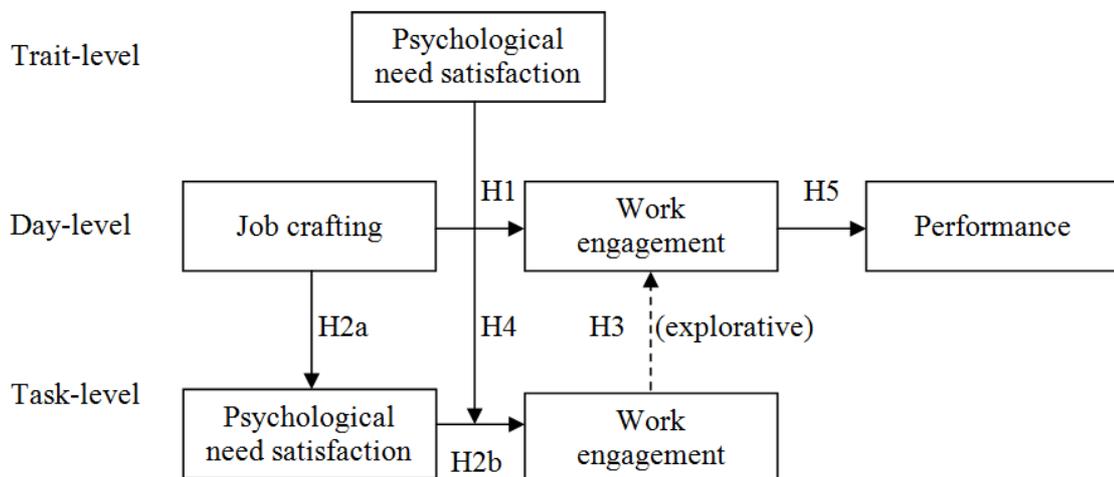


Figure 1. Hypothetical overall model (H2a and H2b are part of the mediation hypothesis 2)

The current study not only examines fluctuations from day-to-day, but even fluctuations between tasks by using the Day Reconstruction Method (DRM; Kahneman, Krueger, Schkade, Schwarz & Stone, 2004). In particular is examined, the potential role of psychological need satisfaction as mediator in the relationship between daily job crafting and work engagement on the task-level (Ryan & Deci, 2000). It is expected that fluctuations of task-level need satisfaction and task-level work engagement, within the day, have considerable influence on that person's day-level work engagement. The self-determination theory of Deci and Ryan (2000) will be discussed below.

2.4. The Self-Determination Theory: psychological need satisfaction

The Self-Determination Theory (SDT) of Deci and Ryan (2000) states that needs are "...innate psychological nutrients that are essential for ongoing psychological growth, integrity, and well-being" (Deci & Ryan, 2000, p. 229). These needs can be divided into three basic needs, namely (1) the need for autonomy, (2) the need for competence and (3) the need for relatedness. The need for autonomy can be described as a desire for being able to make your own decisions and choices and to experience ownership of your own behavior. This does not necessarily mean that the request for a certain activity has to be internally originated, only that when the request is external, the person has to stand behind it and be willing to act on it (e.g. regulation through identification or integrated regulation; Ryan & Deci, 2000). Secondly, the need for competence is defined as the striving to feel capable of mastering the environment and to bring about desired outcomes. Also a general feeling of effectiveness can be contributing to the need for competence. Finally, the need for relatedness is defined as a desire for intimate relationships and to achieve a sense of communion and belongingness (Deci & Ryan, 2000).

As suggested by the definition, the satisfaction of these needs is linked to well-being (Deci & Ryan, 2000; Deci et al., 2001). Van den Broeck et al. (2008) studied the role of need satisfaction in the relationship between job characteristics (i.e. job resources and job demands) and employee well-being, and concluded that need satisfaction is a promising underlying mechanism for employees' thriving at work. The results of this study suggest that psychological need satisfaction intervenes in both the motivational and energetic process. They concluded that the satisfaction of psychological needs partially mediated the relationship between job resources and the dimension vigor of work engagement (Van den Broeck et al., 2008). They also concluded that satisfaction of psychological needs partially mediated the

relationship between job demands and exhaustion. In their study they examined psychological need satisfaction as one variable. Their findings build on the JD-R literature, as they further qualify the relationship between job characteristics and work engagement.

The current study tries to expand the findings of Van den Broeck et al. (2008) and the literature on self determination in various ways. In addition to the dimension vigor, all three dimensions of work engagement are examined in the present study. Another distinction is that this study examines the relationship between job crafting and work engagement, instead of job characteristics and work engagement. Reis et al. (2000) also studied the role of psychological need satisfaction in well-being. They expressed the need to consider both trait and day-level determinants of well-being. The current study responds to this need, by measuring need satisfaction on both day and trait-level and linking it to work engagement. The findings of Reis et al. (2000) show that daily (within-person) fluctuations in emotional well-being can be understood in terms of the degree to which the three needs are satisfied in daily activities.

In short, as mentioned above, the definition of job crafting states that it involves activities that serve to fit the job with the individual's personal needs. This implies a positive relationship between job crafting and need satisfaction. In turn, the study of Reis et al. (2000) showed that daily (within-person) fluctuations in emotional well-being can be understood in terms of the degree to which the three needs are satisfied in daily activity. This implies that the relationship between job crafting and work engagement might be mediated by psychological need satisfaction. Based on the above stated literature the following hypothesis is formulated:

Hypothesis 2: The relationship between daily job crafting and task-level work engagement is mediated by task-level psychological need satisfaction.

More precisely, one example of increasing structural resources is increasing the level of autonomy in the job (Tims et al., 2012), which in turn might be positively related to satisfaction of the need for autonomy. Another example of increasing structural resources is increasing learning opportunities (Tims et al., 2012). In turn, this might be positively related to satisfaction of the need for competence. Furthermore, an example of increasing social resources is increasing social support of colleagues (Tims et al., 2012), which in turn can lead to an increase in satisfaction of the need for relatedness. Finally, increasing challenging demands might increase the feeling of competence.

Therefore, we hypothesize that the relationship between increasing structural resources and work engagement is mediated by satisfaction of the need for autonomy and the need for competence. The relationship between increasing social resources and work engagement is mediated by satisfaction of the need for relatedness and the relationship between increasing challenging demands and work engagement is mediated by satisfaction of the need for competence. The fourth dimension is studied exploratory. According to the study of Petrou et al. (2012) decreasing hindrance job demands is negatively related to work engagement. Whether this relationship is also mediated by psychological need satisfaction will be examined in the present study.

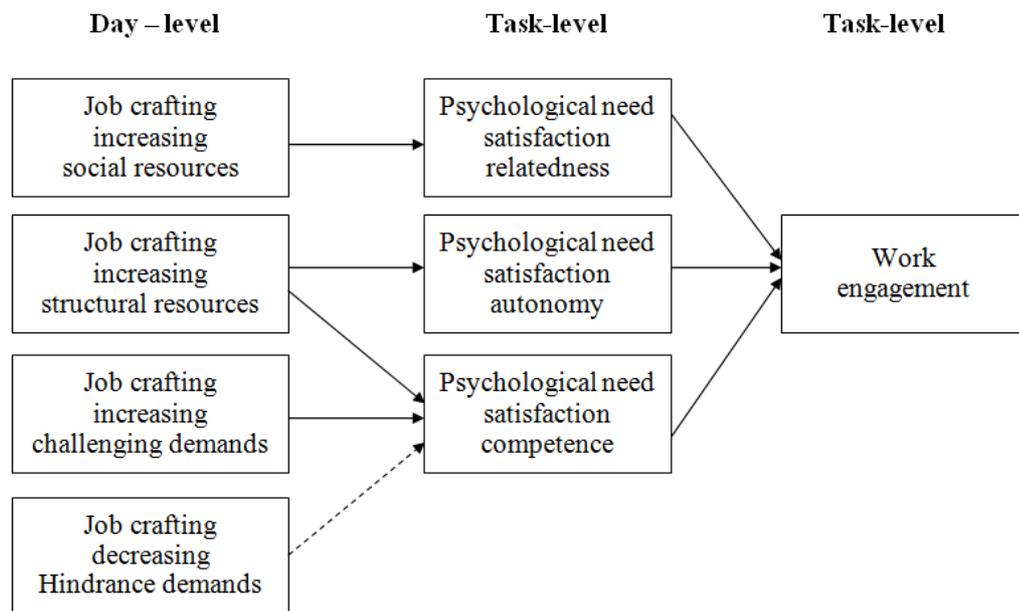


Figure 2. The relationship between daily job crafting and task-level work engagement, mediated by psychological need satisfaction on the task-level

Figure 2 qualifies the total research model (Figure 1) by showing the specific relationships between daily job crafting, psychological need satisfaction on the task-level and task-level work engagement. Daily job crafting activities are expected to influence the need satisfaction on the task-level and the level of need satisfaction on the task-level is expected to have a direct influence on the task-level work engagement.

Furthermore, a person may have a certain level of work engagement over the day, but it is also expected to fluctuate within the day. This study explores whether this work engagement on different tasks within the day will be contingent on that day's general level of work engagement.

In other words, is the day-level work engagement the same as the mean work engagement on the different tasks? The following hypothesis is formulated:

Hypothesis 3: Task-level work engagement is positively related to daily work engagement.

2.5. Sensitization model: cross-level interactions

The sensitization model proposes that the higher the trait-level need satisfaction, the stronger the relationship between need satisfaction and well-being on a daily level. This model is the opposite of the deprivation model, which posits that higher daily need satisfaction levels should have relatively greater influence on the well-being of someone with lower trait-levels of need satisfaction (Reis et al., 2000).

Howell et al. (2011) examined the relationship between need satisfaction and subjective well-being (SWB) by assessing momentary need satisfaction and momentary happiness within the day. They found that hourly behaviors associated with high autonomy and with high relatedness were associated with increased momentary happiness. They also showed that people experiencing higher levels of life satisfaction experience greater increases in momentary happiness as need satisfaction increased for relatedness and autonomy. This supports a sensitization model of well-being within the day. An explanation is that one will only respond to those features of a situation that are important to one's disposition (e.g. template matching; Bem & Funder, 1978). Another explanation is that because satisfied individuals typically experience higher levels of need satisfaction (Ryan & Deci, 2000), their happiness is more dependent on those needs being met (Howell et al., 2011).

This current study tries to expand the findings of both Reis et al. (2000) and Howell et al. (2011) by focusing on task-level work engagement as an activated and positive work-related state (Bakker & Oerlemans, 2011). In particular, the present study will assess whether employees high (vs. low) on trait psychological need satisfaction experience more work engagement during tasks where their psychological needs are being met. Thus, based on the sensitization model, it is expected that:

Hypothesis 4: The relationship between psychological need satisfaction on task-level and work engagement on task-level is stronger for employees with a higher trait-level need satisfaction. This specifically counts for the trait-level and task-level needs that match.

2.6. Work engagement and performance: day-level

There are several explanations for the relationship between work engagement and performance (Bakker & Oerlemans, 2011). For instance, engaged employees are known to experience higher levels of positive emotions, such as happiness and enthusiasm. These positive emotions, according to the broaden-and-build theory of Fredrickson (2001), broaden the thought-action repertoire of the employee. This implies they constantly work on their personal resources (Fredrickson 2001). Another explanation is that the health of engaged employees is proved to be better than the health of non-engaged employees. This way engaged employees will be able to focus and dedicate more of their energy and resources to their work in comparison to non-engaged employees (Bakker, 2009).

More recently, work engagement is studied on a more detailed level in diary studies. These studies have shown that weekly and even daily fluctuations in work engagement are considerable. These fluctuations are important predictors of employee and organizational outcomes, such as in-role performance (Bakker & Bal, 2010; Bakker & Xanthopoulou, 2009; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009). An example of a recent study is the diary study of Xanthopoulou et al. (2009) which found that daily work engagement significantly predicted daily financial returns. These short-term indicators (or within-person changes) of work engagement might even be better predictors of performance in organizations than the long-term indicators (between-person differences).

The performance episodes model (Beal, Weis, Barros, & MacDermid, 2005) offers an explanatory theoretical framework for these findings. Contrary to the traditional performance models, which regarded within-person differences as error variance, the performance episodes model focuses on an individual's variability in performance over short periods of time. These short periods of time are called performance episodes. Performance episodes are defined, by Beal et al. (2005), as naturally segmented units within the daily stream of behaviors engaged in at work. These relatively short episodes are thematically organized around work-relevant immediate goals or desired end states. The ability to perform effectively during these episodes is influenced by coexisting affective states. Their main argument is that individuals perform better when they are fully concentrated on the task and thus highly engaged. Specifically, Beal et al. (2005) proposed that allocation of resources to the task is crucial for successful performance. If employees are not able to allocate all of their resources to the task, for instance when they are constantly interrupted, they will not be able to perform optimally.

Therefore, complementing and preserving (self-regulatory) resources is critical for successful performance during performance episodes and during a day (Beal et al., 2005).

The present study focuses on within-person performance during the workweek on a daily basis. The study predicts that this performance will be contingent on the employee's daily work engagement. Based on previous literature the following hypothesis is formulated:

Hypothesis 5: Daily work engagement is positively related to daily job performance.

3. Method

3.1. Participants

A total of 95 participants volunteered to take part in a five day diary study. The final sample consisted of 80 participants of which 44 were female and 36 were male. 53 of the participants completed the diary five days, the other 27 participants filled out the diary four days or less. Taken together the participants provided 297 days of data with a total of 2270 tasks. The participants all had an informational job. They also had to be working for an employer (no freelancers). The age of the participants ranged from 23 to 69 years, with an average of 45 years ($SD = 10.07$). Of the participants, 35% finished HBO as highest education, and 57.5% finished a scientific education. The other 7.5% finished a lower education. Most of the participants worked in the educational (25%) and consultancy branch (25%), followed by the public sector (13.8%) and health care (11.3%). Moreover, 16 of the participants had a leadership function. The mean number of years employed in the current job was 7.26 ($SD = 6.97$) with a minimum of 0 and a maximum of 32. The mean years in total employment was 20.38 ($SD = 9.63$) with a minimum of 4 and a maximum of 47. The mean hours of work in a week was 34.5 ($SD = 7.9$). Two prizes were allotted to stimulate the response rate, a Sony Reader Touch and a Wattcher (household energy meter).

3.2. Procedure

The data for this study were collected by inviting employees through several media to participate in this diary study. They were invited through social media, through adverts at websites and by emailing personal contacts. The participants were asked to fill in a single questionnaire and a diary during five successive work days in the month May. They were suggested to do this from Monday till Friday, but had the freedom to choose otherwise. They were also recommended to fill in the diary by the end of their work day. They received a personal login code for the internet website and received reminders following their participation until they completed the diary five times. Participants were first asked to complete a general questionnaire measuring several constructs on trait-level. This questionnaire only appeared when they logged in for the first time. The diary consisted of questionnaires aimed at the day-level. Moreover, participants reconstructed their workday by first filling out the time they had spent on each of their work tasks. After reconstructing their

workday in chronological order, the participants answered questions about their level of psychological need satisfaction and work engagement for each work task.

3.3. Measures

In this study validated scales were used to measure the variables in the model. The original items were sometimes converted to the day or even the task level.

3.3.1. General questionnaire – between-person trait-level

Trait-level job crafting was measured by a scale of Tims et al. (2012). Measured job crafting dimensions were; (1) increasing structural resources (2) increasing social resources, (3) increasing challenging job demands, and (4) decreasing hindrance job demands. The first dimension consisted of five items. An example of an item is: “I try to learn new things at work”. The second dimension was also tested with five items. One example item is: “I ask my colleagues for advice”. The third dimension consisted of five items. An example of an item is: “I regularly take on extra tasks, even though I do not receive extra salary for them”. Finally, the fourth dimension was tested with six items. An example of an item of this scale is: “I make sure that my work is mentally less intense”. The answering scale for all of the items ranged from 1 (never) to 5 (very often). All subscales showed good reliabilities (increasing structural resources; $\alpha = .84$; increasing social resources; $\alpha = .75$; increasing challenging demands; $\alpha = .81$; decreasing hindrance demands; $\alpha = .82$).

Trait-level work engagement was measured with the short nine-item version of the Utrecht Work Engagement scale (UWES; Schaufeli, Bakker, and Salanova, 2006). All three dimensions of work engagement were measured; vigor, dedication and absorption. The items were answered on a seven-point likert-scale, ranging from 0 (never) to 6 (always). The total scale showed a very good reliability ($\alpha = .93$). An example of an item measuring vigor is: “At my work, I feel bursting with energy”. This subscale consisted of three items. One example item measuring dedication is: “My work inspires me”. This subscale also consisted of three items. Absorption was also measured with three items. One example item for absorption is: “I am immersed in my work”. All three subscales showed good reliabilities (vigor; $\alpha = .91$; dedication; $\alpha = .87$; absorption; $\alpha = .76$).

Trait-level psychological need satisfaction was measured based on the Basic Need Satisfaction at Work Scale (BNS-W; Deci et al., 2001; Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010). The scale consisted of the three psychological needs; the need for autonomy, the need for competence and the need for relatedness, with a total of 21 items. Answer options ranged from 1 (totally disagree) to 7 (totally agree). The total scale showed a

good reliability ($\alpha=.85$). The subscale need for autonomy consisted of 7 items, one example item is: “I feel like I can pretty much be myself at work”. The reliability of this subscale ($\alpha = .65$) was just below the norm ($\alpha > .70$). The subscale need for competence consisted of 6 items, one example item is: “Most days I have the feeling that I have accomplished something at work”. The subscale need for relatedness consisted of 8 items, one example item is: “People at work care about me”. Both need for competence and need for relatedness showed good reliabilities (competence; $\alpha=.75$; relatedness; $\alpha=.78$).

General performance was measured with the questionnaire of Goodman and Svyantek (1999). The scale consisted of 8 items which could be answered on a seven-point likert-scale, ranging from 1 (totally disagree) to 7 (totally agree). The total scale showed good reliability ($\alpha=.75$). The scale assesses so called in-role (4 items) as well as extra-role performance (4 items). An example of an item assessing in-role performance is: “I take the responsibilities that belong to my job”. An item assessing extra-role performance is: “I help colleagues who are absent”. Both scales showed good reliabilities (in-role performance, $\alpha=.79$; extra-role performance, $\alpha=.72$).

3.3.2. *Diary study – within-person day-level*

Daily job crafting was also measured with the questionnaire of Tims et al. (2012). However, all of the items were converted to the day-level. The day-level scale consisted of 18 items instead of 21. Three items of the trait questionnaire were not suitable for conversion to day-level, namely; (1) ‘When an interesting project comes along, I offer myself proactively as project co-worker’, (2) ‘If there are new developments, I am one of the first to learn about them and try them out’, and (3) ‘When there is not much to do at work, I see it as a chance to start new projects’. These items were more long term and therefore less suited for the day questionnaire. Increasing structural resources consisted of 5 items, one example item is: “I tried to learn new things at work today”. Increasing social resources was also measured with 5 items, for instance: “Today I asked colleagues for advice”. Increasing challenging demands was, for instance, measured with the item: “Today I took on extra tasks, even though I will not get paid extra for those tasks” and consisted of only 2 items. Finally, decreasing hindrance demands was measured with 6 items, one example item is: “Today, I made sure I had less emotionally demanding work to be performed. The subscales increasing structural resources ($\alpha=.71$), increasing social resources ($\alpha=.74$), and decreasing hindrance demands ($\alpha=.85$) all showed good reliabilities, whereas the subscale increasing challenging demands showed poor reliability ($\alpha=.43$). Therefore, this scale is not further used in the analyses. All three items

removed from the questionnaire, because they were not suited for day-level conversion, were from the subscale increasing challenging demands. This might have caused the low reliability.

Daily work engagement was also measured based on the nine-item version of the Utrecht Work Engagement scale (UWES; Schaufeli, Bakker, and Salanova, 2006). The trait items were again converted to the day-level. The total scale showed good reliability ($\alpha=.94$). The subscale vigor was measured with three items, one example item is: “Today, I felt bursting with energy”. The subscale dedication also consisted of three items, one example item is: “Today, my work inspired me”. Furthermore, the subscale absorption also consisted of three items, one example item is: “Today, I was immersed in my work”. All subscales showed good reliabilities (vigor; $\alpha=.91$; dedication; $\alpha=.88$; absorption; $\alpha=.81$).

Daily job performance was assessed with 8 items from the scale developed by Goodman and Svyantek (1999) measuring both in-role performance (4 items) and extra-role performance (4 items). The items were converted to the day-level. The answer options ranged from 1 (totally disagree) to 5 (totally agree). An example of an item measuring in-role performance is: “Today, I fulfilled all the requirements of my job’ and an example of an item measuring extra-role performance is: “Today, I helped colleagues who had a high work pressure’. The reliability of the total scale ($\alpha=.62$) was just below the norm ($\alpha > .70$). The reliability of the subscale in-role performance was poor ($\alpha=.30$), whereas the subscale extra-role performance showed good reliability ($\alpha=.72$). Therefore, only extra-role performance will be used further in the analyses.

3.3.3. *Day-reconstruction study – within-person task-level*

Job activities. A total of 11 activities were offered as options to choose in the Day Reconstruction study. The list of work tasks included: core task, administration, responding to email, contact with external clients, meeting with colleagues, having a break alone, having a break with colleagues, interaction with colleagues, preparing a meeting, preparing a lesson, preparing for a main task. A final option was to select: “Otherwise, namely...”, after which an answer space appeared so that the participants could indicate the other activity they engaged in, that was not listed. The participants were asked to fill in all of the activities the person engaged in from the beginning of the work day until the end of their workday. The off-job activities itself were not analyzed in this study. By chronologically reconstructing the workday, the DRM technique helps employees to accurately recall how they have felt during each of the work tasks (Kahneman et al., 2004). After reconstructing their workday,

participants answered questions on work engagement and psychological need satisfaction for each of the reported tasks.

Task-level work engagement was measured with three items. Every dimension of work engagement; vigor, dedication and absorption, during activities was rated with one item. A scale ranging from 1 (totally disagree) to 7 (totally agree) was used. The items all came from the short nine-item version of the Utrecht Work Engagement scale (UWES; Schaufeli, Bakker, and Salanova, 2006) and were converted to the task-level. The item measuring vigor was: “During this work activity I was bursting with energy”. The item measuring dedication was: “I was enthusiastic about this work activity”. The item that was selected measuring absorption was: “I was immersed in this work activity”. The reliability of the total scale varied from ($\alpha = .60$) to ($\alpha = .90$), depending on the specific task reported.

Task-level psychological need satisfaction also consisted of three items, one for every dimension. The items were selected from the general questionnaire of Deci et al. (2001) and converted to the task-level. The item measuring satisfaction of the need for autonomy was: “Through this work activity I satisfied my need for autonomy”, the item measuring satisfaction of the need for relatedness was: “Through this work activity I satisfied my need for relatedness” and the item measuring the satisfaction of the need for competence was: “Through this work activity I satisfied my need for competence”. The reliability of the total scale varied from ($\alpha = .54$) to ($\alpha = .84$), depending on the specific task reported.

3.3.4. Control Variables

In all of the hypotheses was corrected for 7 demographic variables (gender, age, highest finished education, years worked, job tenure, hours worked per week, leadership position). In addition, was controlled for the general (trait)levels of the outcome variable in the model, which allows for analyzing within-person changes in the outcome beyond a person’s average trait level. Depending on the specific analyses, general level of work engagement, general level of job crafting, or general performance were entered as control variables in the model.

3.4. Statistical analysis

To test the previous mentioned hypotheses several analyses were conducted. The data has a hierarchical structure with days nested within persons and tasks nested within days. Therefore, hierarchical linear modeling was used to analyze the data. All analyses were conducted in the program Multilevel for windows (MLwiN; Rasbash, Browne, Healy, Cameron, & Charlton, 2000). The trait-level (between-person) variables were centered at the

grand mean and the daily and task-level (within-person) variables were centered at the respective person mean.

Table 1
Means, standard deviations and correlations trait-level

Variable	Mean	SD	N	1	2	3	4	5	6	7	8	9	10	11
<i>Trait-level variables</i>														
1. JC Increasing structural resources	3.67	.68	2539	(.84)										
2. JC Increasing social resources	2.38	.58	2539	.37**	(.75)									
3. JC Increasing challenging demands	2.98	.78	2539	.58**	.51**	(.81)								
4. JC Decreasing hindrance demands	1.98	.64	2539	-.07**	.10**	.16**	(.82)							
5. Work engagement	4.64	.98	2571	.61**	.39**	.50**	-.18**	(.93)						
6. Need for autonomy	5.15	.67	2539	.24**	.19**	.21**	-.11**	.50**	(.65)					
7. Need for competence	5.52	.83	2539	.35**	.31**	.28**	-.09**	.67**	.55**	(.75)				
8. Need for relatedness	5.36	.63	2539	.06**	.01	.15**	-.11**	.35**	.32**	.43**	(.78)			
9. Performance	6.03	.44	2539	.16**	.07**	.22**	.05*	.17**	.12**	.45**	.51**	(.75)		
10. In-role Performance	6.33	.52	2539	.12**	-.14**	.06**	.01	.09**	.29**	.37**	.43**	.75**	(.79)	
11. Extra-role Performance	5.73	.60	2539	.13**	.23**	.27**	.06**	.17**	-.07**	.35**	.38**	.82**	.23**	(.72)

.* correlation is significant at level of <.05.

** correlation is significant at level of <.01.

Figures in parentheses are Cronbach's alpha's.

4. Results

4.1. Descriptive statistics

Table 1 reports means, standard deviations, bivariate correlations, and cronbach's alpha's for all of the variables measured on the trait-level. Results show that increasing structural resources has the highest mean (3.67; $SD = .68$) of the job crafting dimensions, whereas decreasing hindrance demands shows the lowest mean (1.98; $SD = .64$). This implies that participants engage on average the most in activities to increase structural resources, and the least in activities to decrease hindrance demands on the trait-level. It also shows that increasing structural resources ($r = .61, p < .01$), increasing social resources ($r = .39, p < .01$), and increasing challenging demands ($r = .50, p < .01$), relate positively to work engagement, whereas decreasing hindrance demands showed a negative relationship ($r = -.18, p < .01$). Furthermore, decreasing hindrance demands showed negative relationships with all three needs (autonomy; $r = -.11, p < .01$; competence; $r = -.09, p < .01$; relatedness; $r = -.11, p < .01$).

Table 2 reports means, standard deviations, bivariate correlations, and cronbach's alpha's for all of the variables measured on the day-level. It shows that mean day-level work engagement was 4.79 ($SD = 1.11$) and mean performance was 4.24 ($SD = .78$). As expected, increasing structural resources ($r = .49, p < .01$), and increasing social resources ($r = .13, p < .01$) were both positively related to work engagement. In contrary, in line with the hypothesis, decreasing hindrance demands is negatively related to daily work engagement ($r = -.21, p < .01$). Furthermore, day-level work engagement showed a positive correlation with day-level performance ($r = .29, p < .01$). Increasing challenging demands will not be further analyzed, because of the low reliability ($\alpha = .43$). Performance shows reliability just below the norm ($\alpha = .62$), when analyzed separately in-role performance shows very poor reliability ($\alpha = .30$), whereas extra-role performance shows good reliability ($\alpha = .72$). Therefore, only extra-role performance will be further examined.

Table 3 reports means, standard deviations, and bivariate correlations for all of the variables measured on the task-level. It shows that all three needs relate positively to task-level work engagement (autonomy; $r = .48, p < .01$; competence; $r = .58, p < .01$; relatedness; $r = .53, p < .01$). The reliabilities are not reported in Table 3, since they vary depending on the particular task. They can be found earlier in the method.

Table 2
Means, standard deviations and correlations day-level

Variable	Mean	SD	N	1	2	3	4	5	6	7	8
<i>Day-level variables</i>											
1. JC Increasing structural resources	4.69	1.03	2549	(.71)							
2. JC Increasing social resources	2.92	1.08	2549	.33**	(.74)						
3. JC Increasing challenging demands	3.17	1.40	2549	.34**	.37**	(.43)					
4. JC Decreasing hindrance demands	2.83	1.19	2549	.10**	.21**	-.03	(.85)				
5. Work engagement	4.79	1.11	2483	.49**	.13**	.30**	-.21**	(.94)			
6. Performance	4.24	.78	2483	.27**	.28**	.26**	-.06**	.29**	(.62)		
7. In-role Performance	5.11	.63	2483	.23**	.07**	.07**	-.17**	.26**	.59**	(.30)	
8. Extra-role Performance	3.37	1.30	2483	.21**	.31**	.28**	.01	.22**	.92**	.22**	(.72)

. * correlation is significant at level of <.05;

. ** correlation is significant at level of <.01;

Figures in parentheses are Cronbach's alpha's

Table 3
Means, standard deviations and correlations task-level

Variable	Mean	SD	N	1	2	3	4	5	6	7
<i>Task-level variables</i>										
1. Work engagement	5.14	1.15	1678							
2. Vigor	5.08	1.29	1678	.88**						
3. Dedication	5.24	1.23	1673	.89**	.72**					
4. Absorption	5.10	1.40	1671	.87**	.62**	.66**				
5. Need autonomy	5.09	1.44	1658	.48**	.42**	.44**	.41**			
6. Need competence	5.02	1.38	1658	.58**	.48**	.53**	.53**	.54**		
7. Need relatedness	4.78	1.53	1658	.53**	.47**	.48**	.45**	.35**	.47**	

. * correlation is significant at level of <.05;

. ** correlation is significant at level of <.01;

Cronbach's alpha's varied depending on the specific task reported

4.2. Testing Hypothesis 1: Daily job crafting and daily work engagement

In hypothesis 1, it was expected that increasing daily structural resources, increasing social resources and increasing challenging demands would be positively related to daily work engagement, whereas decreasing daily hindrance demands was expected to relate negatively to daily work engagement. First a null model that included only the intercept was entered. Secondly, a multi-level regression analysis was conducted on the variable day-level job crafting and the variable day-level work engagement. The three dimensions of job crafting were tested separately. The three dimensions of work engagement were taken together, by using the average score on the 9 items.

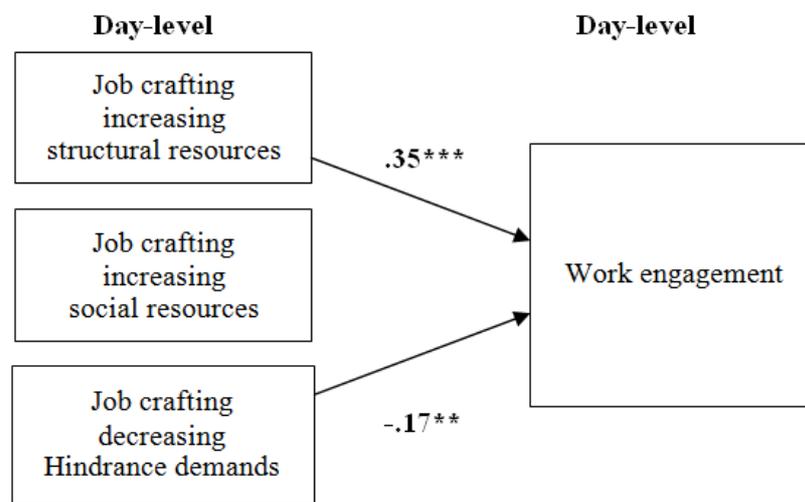


Figure 3. Relationships between day-level job crafting and day-level work engagement
 Note. The numbers in the figure are the unstandardized coefficients. ** $p < .01$; *** $p < .001$

As shown in Table 4, day-level increasing structural resources is positively related to daily work engagement ($b = .35$, $SE = .07$, $T = 5.12$, $p < .001$). The relationship between day-level increasing social resources and daily work engagement was non-significant ($b = .03$, $SE = .06$, $T = .44$, ns). Finally, day-level decreasing hindrance demands was negatively related to daily work engagement ($b = -.17$, $SE = .06$, $T = -2.59$, $p < .01$). As shown in Figure 3, hypothesis 1 is partially supported.

Table 4

Job crafting (Day-level)	Work engagement (Day-level)				<i>Results multi-level analyses relationship day-level job crafting and work engagement</i>
	<i>b</i>	<i>SE</i>	<i>T</i>	<i>p</i>	
Increasing structural resources	.35	.07	5.12	< .001	
Increasing social resources	.03	.06	.44	<i>ns</i>	
Decreasing hindrance demands	-.17	.06	-2.59	< .01	

4.3. *Testing Hypothesis 2: Psychological need satisfaction at the task level as an underlying process*

Hypothesis two was examined using both the method of Baron and Kenny (1986) and the Sobel test (Sobel, 1982; Preacher & Leonardelli, 2001). The method of Baron and Kennys (1986) determines whether a variable is a mediator on the basis of four conditions; (1) the independent and outcome variable must be significantly related, (2) the independent variable and the mediator must be significantly related, (3) the mediator and the outcome variable must be significantly related, and finally (4) the relationship between the independent variable and the outcome variable should either be non-significant or significantly weaker when the mediator is added (Baron and Kenny, 1986). To examine whether the relationship was significantly weaker the Sobel test was conducted. According to the four steps of Baron and Kenny (1986) and the Sobel test our data only shows partial support for hypothesis 2. The steps will be discussed below.

In accordance with the first step of mediation (Table 5), increasing structural resources ($b = .27, SE = .04, T = 7.19, p < .001$) and decreasing hindrance demands ($b = -.08, SE = .04, T = -2.19, p < .05$) were significantly related to task-level work engagement. Increasing social resources ($b = .01, SE = .04, T = .34, ns$) was not related to task-level work engagement.

Table 5

Multi-level results relationship day-level job crafting and task-level work engagement

In accordance with the second step, the results of the analysis showed (Table 6) a positive significant relationship between day-level increasing structural resources and satisfaction of the need for autonomy on task-level ($b = .22$, $SE = .05$, $T = 4.07$, $p < .001$). Also a positive significant relationship was found between increasing structural resources and

Job crafting (Day-level)	Need autonomy				Need competence (Task-level)				Need relatedness			
	<i>b</i>	<i>SE</i>	<i>T</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>T</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>T</i>	<i>p</i>
Increasing structural resources	.22	.05	4.07	<.001	.16	.05	3.32	<.001	.09	.05	1.69	<i>ns</i>
Increasing social resources	-.02	.05	-.35	<i>ns</i>	.04	.04	.96	<i>ns</i>	.11	.05	2.14	<.05
Decreasing hindrance demands	-.03	.05	-.65	<i>ns</i>	-.07	.05	-1.64	<i>ns</i>	-.07	.05	-1.46	<i>ns</i>

satisfaction of the need for competence ($b = .26$, $SE = .05$, $T = 3.32$, $p < .001$). The dimension increasing social resources showed a significant positive relationship with satisfaction of the need for relatedness ($b = .11$, $SE = .05$, $T = 2.14$, $p < .05$).

Table 6

Results multi-level analyses relationship job crafting (day-level) and need satisfaction (task-level)

In the third step, the mediator (need satisfaction task-level) has to be significantly related to the outcome variable (task-level work engagement), when corrected for the initial variable. As shown in Table 7, this was true for all three needs (autonomy: $b = .19$, $SE = .02$, $T = 10.72$, $p < .001$; competence: $b = .24$, $SE = .02$, $T = 12.20$ and $p < .001$; relatedness: $b = .23$, $SE = .02$, $T = 13.47$, $p < .001$).

Job crafting (Day-level)	Work engagement (Task-level)			
	<i>b</i>	<i>SE</i>	<i>T</i>	<i>p</i>
Increasing structural resources	.27	.04	7.19	<.001
Increasing social resources	.01	.04	.34	<i>ns</i>
Decreasing hindrance demands	-.08	.04	-2.19	<.05

Table 7

Results multi-level analyses relationship task-level need satisfaction and work engagement

Psychological need satisfaction (Task-level)	Work engagement (Task-level)			
	<i>b</i>	<i>SE</i>	<i>T</i>	<i>p</i>
Autonomy	.19	.02	10.72	<.001
Competence	.24	.02	12.20	<.001
Relatedness	.23	.02	13.47	<.001

Finally, for full mediation, the relationship between the initial variable (job crafting day-level) and the outcome (task-level work engagement) has to be non-significant, when corrected for the mediator. However, the relationship between increasing structural resources and task-level work engagement was still significant when corrected for task-level need satisfaction ($b = .13$, $SE = .03$, $T = 3.94$, $p < .001$). For partial mediation, the relationship has to be significant weaker when corrected for the mediator. The Sobel test (Preacher & Leonardelli, 2001) was used to examine this.

The results of the Sobel test show that the relationship between increasing structural resources and task-level work engagement is partially mediated by satisfaction of the need for autonomy ($Z = 3.81$, $SE = .01$, $p < .001$). Next, the relationship between increasing structural resources and task-level work engagement is also partially mediated by satisfaction of the need for competence ($Z = 3.20$, $SE = .01$, $p < .001$). Thus, Hypothesis 2 was partially confirmed, with a partial mediation of the relationship between increasing structural resources and task-level work engagement by satisfaction of the need for autonomy and the need for competence.

Therefore, the relationship is partially mediated. The dimensions increasing social resources did not show a relationship with work engagement and is therefore not mediated by psychological need satisfaction, since this was the first condition of mediation. However, as shown in Figure 4, increasing social resources has an indirect effect on task-level work engagement. It is positively related to satisfaction of the need for relatedness, which in turn is related to task-level work engagement.

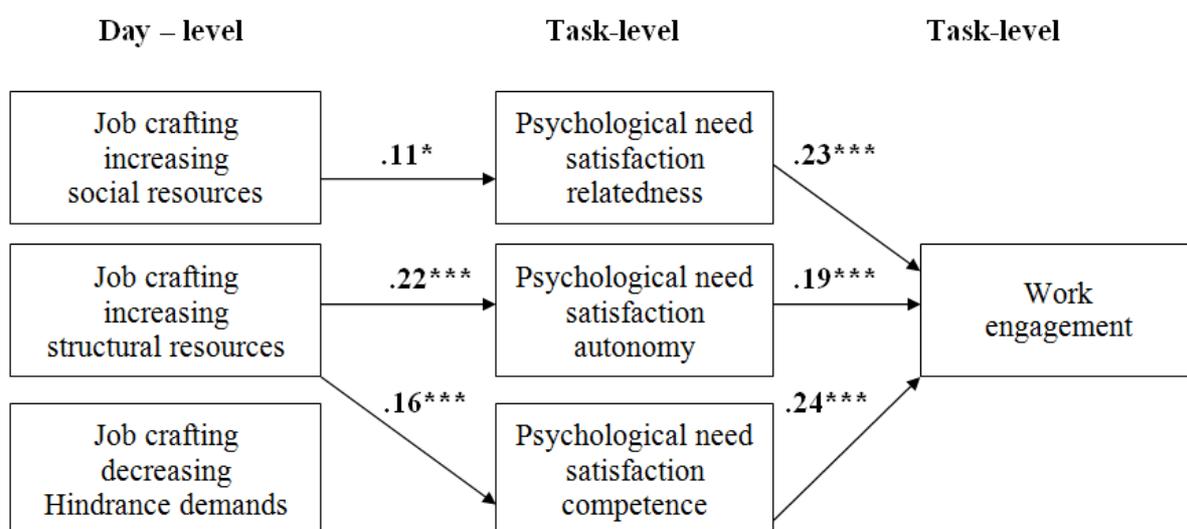


Figure 4. Daily job crafting related to task-level work engagement, through the mediation of need satisfaction on the task-level. Note. The numbers in the figure are the unstandardized coefficients.

* $p < .05$; ** $pp < .01$; *** $p < .001$

4.4. *Testing Hypothesis 3: Task-level work engagement and day-level work engagement*

The third hypothesis stated that task-level work engagement is positively related to day-level work engagement. This hypothesis is, as shown in Table 8, supported by the results of the multi-level analysis ($b = .84, SE = .07, T = 11.47$ and $p < .001$). In addition, when analyzing the three sub dimensions of task-level work engagement separately, all show positive relationships with day-level work engagement (vigor; $b = .34, SE = .08, T = 4.36, p < .001$, dedication; $b = .28, SE = .09, T = 3.10, p < .01$ and absorption; $b = .22, SE = .07, T = 3.30, p < .01$).

Table 8

Work engagement (Task-level)	Work engagement (Day-level)				<i>Multi-level results relationship task-level and day-level work engagement</i>
	<i>b</i>	<i>SE</i>	<i>T</i>	<i>p</i>	
Work engagement	.84	.07	11.47	< .001	
Vigor	.34	.08	4.36	< .001	
Dedication	.28	.09	3.10	< .01	
Absorption	.22	.07	3.30	< .01	

4.5. *Testing hypothesis 4: Cross-level interactions*

The fourth hypothesis stated that the relationship between psychological need satisfaction on the task-level and task-level work engagement is moderated by the general (trait) level of psychological need satisfaction (autonomy, competence and relatedness) of the employee. More specifically, the relationship between psychological need satisfaction on the task-level and task-level work engagement is expected to be stronger for employees with a higher general level of need satisfaction. This hypothesis was not confirmed by our data.

The multi-level findings showed (Table 9) that all three needs were positively related to task-level work engagement (autonomy; $b = .20, SE = .02, T = 11.06, p < .001$, competence; $b = .25, SE = .02, T = 11.95, p < .001$, and relatedness; $b = .23, SE = .02, T = 12.61, p < .001$). On the trait level, autonomy ($b = -.35, SE = .06, T = -5.57, p < .001$) and relatedness ($b = .26, SE = .06, T = 4.47, p < .001$), related significantly to task-level engagement, but competence was not significantly related (competence; $b = .05, SE = .06, T = .88, ns$). All cross-level interactions between trait-level and task-level needs did not relate

significantly to task-level work engagement (autonomy; $b = -.03$, $SE = .03$, $T = -1$, ns , competence; $b = .02$, $SE = .02$, $T = .75$, ns , and relatedness; $b = -.03$, $SE = .03$, $T = -1.12$, ns).

Psychological Need satisfaction	Work engagement (Task-level)				Table 9 <i>Multi-level results cross-level interactions</i>
	<i>b</i>	<i>SE</i>	<i>T</i>	<i>p</i>	
<i>Trait-level variables</i>					
Autonomy	-.35	.06	11.06	< .001	
Competence	.26	.06	11.95	< .001	
Relatedness	.05	.06	12.61	<i>ns</i>	
<i>Task-level variables</i>					
Autonomy	.20	.02	-5.57	< .001	
Competence	.25	.02	4.47	< .001	
Relatedness	.23	.02	.88	< .001	
<i>Cross-level interactions</i>					
Autonomy x autonomy	-.03	.03	-1	<i>ns</i>	
Competence x competence	.02	.02	.75	<i>ns</i>	
Relatedness x relatedness	-.03	.03	-1.12	<i>ns</i>	

4.6. Testing hypothesis 5: Daily work engagement and daily job performance

The fifth hypothesis stated that daily work engagement is positively related to subjective daily job performance. The analysis showed (Table 10) that the relationship between day-level work engagement and performance is non-significant ($b = .06$, $SE = .05$, $T = 1.06$ and ns). Performance measured in this study consisted of questions regarding both in-role performance and extra-role performance. Since in-role performance showed poor reliability, only extra-role performance was further examined. The analysis showed a non-significant relationship between work engagement and extra-role performance ($b = .01$, $SE = .09$, $T = .05$, ns).

	Job performance (Day-level)				Extra-role performance (Day-level)			
	<i>b</i>	<i>SE</i>	<i>T</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>T</i>	<i>p</i>
Table 10 <i>Multi-level results relationship day-level work engagement and job performance</i>								

A day reconstruction study

Work engagement (Day-level)	.06	.05	1.06	<i>ns</i>	.01	.09	.05	<i>ns</i>
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5. Discussion

Where in former days job (re)design was done by the organization (top-down), job crafting is job (re)design done by the employee (bottom-up; Hornung et al., 2010). The present study was designed to answer the question whether daily job crafting has positive outcomes on the day-level for both the employee (work engagement) and the employer (performance). In addition, was examined whether this relationship can be further qualified by examining the role of psychological need satisfaction on the task-level, as an underlying process.

The current study showed that daily job crafting activities that increase structural resources of the job enhance employees' daily work engagement, through the mediation of satisfaction of the need for autonomy and the need for competence, on the task level. Furthermore, the influence of increasing social resources on task-level work engagement is only indirect, through satisfaction of the need for relatedness. In other words, these job crafting behaviors create a better fit between the job and the employees' psychological needs. In turn, this higher need satisfaction has a positive relationship with the employees' work engagement on the task. Finally, this task-level work engagement showed to be contingent on the day-level work engagement. The present study did not show that daily work engagement positively relates to daily job performance. Moreover, the hypothesis based on a sensitization model of well-being (Reis et al., 2000; Howell et al., 2011), that stated that the relationship between task-level need satisfaction and task-level work engagement would be stronger for employees with a higher trait-level need satisfaction at work, was not confirmed by the results. The results of the present study will be discussed further below, as well as some limitations, strengths and directions for future research.

5.1. Daily job crafting and daily work engagement

The first hypothesis is partly confirmed by the results. Increasing structural resources (day-level) was positively related to daily work engagement. This is in line with the JD-R model, which states that resources are positively related to work engagement (Bakker & Demerouti, 2007).

Furthermore, in accordance with the results of the study of Petrou et al. (2012), the dimension decreasing hindrance demands is negatively related to work engagement. A possible explanation for the negative relationship with work engagement, is that decreasing hindrance demands, compared to the other job crafting behaviors, is the least positive and

proactive dimension. In contrast, work engagement is an active and positive state. Therefore, engaging in passive, avoidance behavior might not contribute to feeling engaged. Also, reducing workload also reduces the necessity for action, and in turn, the optimal level of challenge in employees their daily activities (Csikszentmihalyi, 1990). However, it is in a way counterintuitive, because hindrance demands are expected to relate positively to burn-out and cost energy (Bakker & Demerouti, 2007). Thus, decreasing those hindrance demands, would likely save energy and relate negatively to burn-out. Another possible explanation is that the relationship is reversed. High (vs. low) engaged employees may be less prone to perceive hindrance demands in their jobs and will therefore less likely engage in activities to decrease them. Thus, this implies that the level of work engagement of the employee influences whether he will decrease his hindrance demands or not, reversing the relationship as hypothesized in our model.

Next, increasing daily social resources shows an indirect relationship with daily work engagement rather than mediation. These results did not fully confirm hypothesis 2. A possible explanation can be found when looking at the characteristics of the participants in this study. The population in this research consisted for a large part of consultants (25%) and teachers (25%). Consultants are fairly autonomous employees who are often with clients and work at home. Therefore, they might attach less value to social resources, compared to employees in other professions. This might also be true for teachers. Teachers determine their own rules in the classroom and during their core tasks they do not have many immediate interactions with colleagues or supervisors. Therefore, these professions might attract employees who attach less value to social resources and interaction with colleagues. In other words, the type of profession might moderate the within-person relationship between daily increasing social resources and daily work engagement. Deci & Ryan (2001) do assume that there are important individual differences that affect the degree to which people will experience need satisfaction in different contexts and the influence the satisfaction of the needs has on them. It would be interesting for follow up research to test this hypothesis and to see whether there is a difference between persons in the relative salience of the three needs in the way that they contribute to their work engagement.

Furthermore, increasing challenging demands was not further examined, because of the low reliability of the scale ($\alpha = .43$). The items were less easily converted to the day-level, because the items were more long term compared to the items from the other dimensions. Therefore, the day-scale of increasing challenging demands consisted of only two items. To summarize these findings, it can be stated that day-level increasing daily structural resources

is positively related to work engagement on the day-level, whereas day-level decreasing hindrance demands is negatively related to day-level work engagement.

5.2. Psychological need satisfaction as an underlying process

The results of the multi-level analysis partially confirmed our second hypothesis. The results show that daily increasing structural resources relates positively to task-level work engagement, and this relationship is partially mediated by satisfaction of the need for autonomy and the need for competence. This means that increasing structural resources, like autonomy or learning opportunities, enhances task-level work engagement, partially through satisfaction of the need for autonomy and the need to feel competent. Next, day-level increasing social resources showed a positive relationship with task-level satisfaction of the need for relatedness, which in turn positively affected task-level work engagement. This means that increasing social resources, on a daily basis, influences task-level work engagement indirectly, through its effect on satisfaction of the need for relatedness.

These findings are in line with the previous mentioned study of Van den Broeck et al. (2008), who found job resources to relate to work engagement through partial mediation of need satisfaction. They also found need satisfaction to mediate the relationship between job demands and exhaustion. Linking these demands to the negative counterpart of work engagement suggests that resources are indeed more important when considering work engagement and demands on the other hand are more important for burnout. This is also in line with the literature on the JD-R model (Bakker & Demerouti, 2007). The indirect relationship of increasing social resources implies that employees can show proactive behavior to increase these resources, but only when this leads to a higher satisfaction of the need for relatedness on the task-level this will lead to a higher task-level work engagement. This shows relatedness to be an important underlying process.

Furthermore, all three needs showed strong positive relationships with task-level work engagement. According to the self-determination theory, needs are important for well-being (Deci & Ryan, 2000). It states that needs are innate psychological nutrients that are essential for ongoing psychological growth, integrity, and well-being. The results of this study confirm this by showing that a task which gives the employee the chance to feel connected, effective and coherent contributes to his or her engagement to this task (Deci & Ryan, 2000).

To summarize these findings, the present study shows that need satisfaction is important for task-level work engagement. When a task fulfills a person's need to be autonomous, to feel related, and to feel competent, the employee will be more engaged to

perform this task. In addition, it can be stated that increasing these structural and social resources contributes to this need satisfaction.

5.3. Task-level and day-level work engagement

Next, the findings of the current study support our third hypothesis, which stated that a higher score on task-level work engagement is positively related to a higher score on day-level work engagement. This finding shows that task-level work engagement is contingent on day-level work engagement. However, the relationship was strong, but the two constructs are not completely the same. It might be that certain tasks are more important than others for daily work engagement. For instance, when people score high on work engagement during their lunch, but low during their core task, in our analysis, both scores are considered equally important. However, some tasks might need to be emphasized more than others, which might explain that the task and day-level scores are not 100% the same. Future day reconstruction research should examine the importance of specific tasks regarding day-level work engagement.

5.4. Sensitization model of work engagement

The fourth hypothesis stated that the relationship between task-level need satisfaction and task-level work engagement would be stronger, when the person's trait-level need satisfaction is higher. This was based on the idea that these employees are more sensitive for the satisfaction of that particular need (Howell et al., 2011). The fourth hypothesis, however, was not confirmed by the results of the study. A possible explanation for this finding is that this moderation effect only holds true when looked at general well-being, instead of work related well-being. The current study differs from the two earlier mentioned studies (Reis et al, 2000; Howell et al, 2011) who did find that individuals who in general are more satisfied gain more positive outcomes of activities that contribute to this need. Those studies examined a general well-being measure and examined the link with need satisfaction, the present study examined a work related well-being measure and linked this to work related need satisfaction. It can be argued that individuals score high on satisfaction of the need for relatedness in general, but low on satisfaction of the need for relatedness at work. For instance, it could be that the employee feels a part of a group and connected at home and therefore feels satisfied in his or her general need for satisfaction, but does not feel a part of a group at work. This implies his need for relatedness is not satisfied at work, but is satisfied in general because of his off-work

relationships. This high score of satisfaction of the need in general possibly intervenes in the work related relationship, since argued from the sensitization model, the high general score would make the individual more sensitive to the need and the low score at work would make the individual less sensitive to the need. It is unsure which one is stronger and has the most influence. In future research it would be interesting to measure both need satisfaction at work as well as in life in general to test this hypothesis. In addition, need satisfaction at work might be more dependent on factors of the work context, and not a reflection of personal differences, in particular the degree to which a person is more prone to experience need satisfaction.

5.5. Daily work engagement and daily job performance

Finally, the fifth hypothesis stated that daily work engagement would be positively related to daily job performance. In the analysis both performance in general as the sub dimension extra-role performance were examined. Both relationships were non-significant. This could be explained by the fact that engaged employees are very dedicated to their tasks and fully absorbed in them. This seems to be more in line with in-role performance, which describes the effectiveness with which employees carry out formally prescribed job responsibilities. Extra-role performance, on the other hand, describes actions that are not required by the job and go above and beyond the call of duty (Goodman and Svyantek, 1999; Murphy & Jackson, 1999). This last type of performance requires more attention for aspects of the job beyond the required tasks. When someone is fully dedicated to and absorbed in his tasks, he might be, for instance, less attentive to the needs of colleagues. In addition, Beal et al. (2005) proposed that individuals perform better when they are fully concentrated on the task and thus highly engaged. Specifically, Beal et al. (2005) proposed that allocation of resources to the task is crucial for successful performance. These statements also seem to regard tasks required of the employee, and therefore, in-role performance. Day-level in-role performance was examined in the current study and showed a positive relationship with day-level work engagement. However, the low reliability makes further consideration of this finding not possible. To summarize these findings, the current study did not find a relationship between daily work engagement and extra-role performance.

5.6. Limitations, strengths and suggestions for further research

Since in this study was decided to measure only on one moment of the day, no conclusions could be drawn regarding the causality of the relationships (Field, 2009). This means that the

relationships can be explained both ways. Either job crafting can lead to a higher state of work engagement, or employees who are more engaged in their work will more likely engage in job crafting behaviors, or both. Future studies should in addition examine this hypothesis by measuring at several moments on a day. For example measuring work engagement in the afternoon and evening. This way more conclusions on causality can be made (Field, 2009). Also interesting for follow up research would be to focus on the relationship between job crafting of day one and work engagement on day two or day three. This was beyond the scope of the present study, since in this study was decided to focus on the within-day level. Furthermore, the cronbach's alpha's of day-level increasing challenging demands and in-role performance were below the norm (.70) and therefore not further examined in the study.

These limitations notwithstanding, the current study has some particular strengths. First, this study is unique while it not only examines correlations between job crafting and work engagement, it also aims to explain this relationship by examining the role of psychological need satisfaction. Second, this study is the first to examine work engagement and psychological need satisfaction on the task-level. This provides new insights in the processes within the day that influence the relationship between job crafting and a positive work-related state of well-being; work engagement. Third, in the current study participants filled in the diary and day reconstruction study for multiple days. The data consisted of a total of 297 days and 2270 tasks, this provides us with a detailed picture of how employees engage and perceive their daily work-related tasks, depending on their job crafting behavior.

In addition, future research should focus on how to examine job crafting more accurately on a daily basis. The current study used the questionnaire of Tims et al. (2012) and converted the items to the day-level. Not all items were suitable to convert to the day-level, like the item; 'When there is not much to do at work, I see it as a chance to start new projects', from the dimension increasing challenging demands. Also, job crafting can be manifested in many ways, using many strategies. Not all were represented in the questionnaire and therefore a more accurate image of job crafting could be outlined when the options would be represented more fully. This could be done, for instance, with a qualitative research which identifies more job crafting strategies and behaviors. For example, a person could job craft by changing the way he works on his tasks, or with whom he works during the tasks, or at what location, in what context and with what materials. All these changes could make the work more pleasant and would likely contribute to the work engagement. In addition, future research should aim to go even further by examining, for instance, whether this relationship is uniform or to look more specifically what types of tasks contribute greatly to work

engagement and which particularly decrease work engagement. This could be done with another day reconstruction study, linking specific tasks to day-level work engagement.

5.7. Implications for practice

Job crafting is often described as a proactive work behavior, which comes across as suggesting it is positive. However, it is not necessarily good or bad for organizations. Job crafting behaviors are, for instance, not always known to management or in line with the goals of the organization. Some of the behaviors, like decreasing hindrance demands, can be counterproductive. What is good for the employee is not necessarily good for the employer. However, as shown in this study, increasing structural and social resources has a positive influence on both the need satisfaction and work engagement of the employee. In addition, employees in every organization probably perform job crafting to some extent. Therefore, job crafting is most beneficial for the organization when facilitated in line with the goals of the organization. This way, organizations can respond to the shift in job design, from top-down to bottom-up, by giving the employees more responsibility in designing their jobs. Moreover, by providing room for job crafting, but at the same time trying to direct the behaviors towards the goals of the organization, job crafting will least likely be counterproductive. For instance, they could set end goals (top-down) and let the employees decide how to work towards them (bottom-up). Furthermore, job crafting is of interest for the employees. When employees are not satisfied by their job, job crafting can be a solution because it provides strategies to proactively create their own perfect job.

6. Conclusion

The findings of this study support the assertion that employees can contribute to their own work engagement through proactively crafting their job. It shows in addition that they can do this on a daily basis, and even more so that this influence runs through the task-level. More precisely, employees can craft their job by increasing their structural and social resources, which in turn enhances their need satisfaction on the task-level. In addition, this enhanced need satisfaction contributes to the task-level work engagement, which is contingent on that day's work engagement. Therefore, by proactively changing their job resources, employees can optimize their job and work environment. This has positive consequences for the organization as well, since other studies have linked work engagement to optimal performance.

7. References

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