

Can Daily Failures at Work Lead to Learning Behavior? – The Moderating Role of Job  
Crafting

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Date: July 6<sup>th</sup>, 2017

### Abstract

The current thesis identifies daily job crafting behavior as a potential moderator for the relationship between daily failures at work and learning behavior. Conceptualizing job crafting as ‘seeking resources’, ‘seeking challenges’, and ‘reducing demands’, it was expected that seeking resources and seeking challenges would positively moderate the relationship between daily failures and learning behavior, while reducing demands would negatively moderate this relationship. Participants were 126 Dutch-speaking employees who completed a baseline and three to five daily surveys, which have been analyzed using hierarchical regression analysis. Daily failures and learning behavior are not significantly related. Moreover, seeking resources and reducing demands are no significant moderators to this relationship. Seeking challenges, however, turned out to negatively moderate the relationship between daily failures and learning behavior, meaning that seeking challenges need not be a worthwhile strategy for employees to learn if they experience many failures. Implications for future research and practice are discussed.

*Keywords:* day-level job crafting; daily failures; daily learning behavior; diary study

### Public summary

Since failure is part of human nature that we can avoid, it would be beneficial to find a way employees can learn from their failures at work. The present thesis revolves around the question whether employees can learn from their mistakes at work by crafting their job, i.e., by proactively making changes to their own job characteristics. Three different job crafting strategies can be employed, namely seeking resources, like feedback, advice, or learning opportunities; seeking challenges, by taking on new tasks or new responsibilities; and reducing demands, by making the job less physically, mentally, or emotionally challenging. 126 Dutch-speaking employees have participated in this study by filling in four to six questionnaires. Results show that employees do not necessarily learn from their mistakes at work. In general, seeking resources and seeking challenges are good learning strategies at work, while reducing demands is not. However, when faced with many failures in the workplace, none of the different job crafting strategies has a positive effect. Nevertheless, managers could encourage learning behavior among employees by stimulating job crafting behavior. This could be done with a job crafting intervention, by encouraging feedback-seeking, or by giving employees autonomy. This might not necessarily work for employees who experience many failures, but it could boost learning behavior at the organization in general.

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Society tends to have a negative view of failure (McGrath, 1999), which can cause people to fear failure and feel ashamed of it (McGregor & Elliot, 2005). Indeed, Shepherd, Covin, and Kuratko (2009) found that project failure is usually accompanied by negative emotional reactions from organizational members. These negative emotions, on their turn, can lead to various negative outcomes in the workplace, such as lower job satisfaction (Fisher, 2000) and employee withdrawal from the organization (Kiefer, 2005). However, since it is part of human nature to make mistakes, it would be beneficial to explore the potential positive consequences that failure might have in a working environment.

One of the recurring themes in scientific literature about failure at work is the (in)ability of employees and organizations to learn from their mistakes. Some studies show that learning from failure is very well possible (e.g., Shepherd & Cardon, 2009), while others suggest that learning from failure is easier said than being done (e.g., Argyris, 1992; Eraut, 2007). Given the fact that mistakes at work are unavoidable, probably even necessary for organizations to be innovative (Cannon & Edmondson, 2005), both organizations and employees can benefit from finding a way to learn from their mistakes.

The current research aims to contribute to the existing literature by exploring a possible mechanism to learn from our mistakes. More specifically, the principal research aim of this study is to examine job crafting, which can be defined as the act of proactively making changes to one's own job characteristics (Tims, Bakker, & Derks, 2014), as the moderator between failures at work and learning behavior. Since job crafting enables employees to modify their jobs in such ways as to create opportunities for learning and improving performance (Tims et al., 2014), job crafting is expected to have a positive influence on the relationship between daily failures and learning behavior at work.

To study job crafting as a moderator between failures at work and learning behavior, job crafting, failures, and learning behavior will all be measured on a daily basis. This is important for this research, since failures occur situationally; failures encountered one day could be more or less considerable than the failures made on other days, and there could even be days where employees don't encounter any (notable) failures related to any task at all. Because of this fluctuating nature of failures, the expected result of these failures, learning behavior, will likely also differ from day to day. Although job crafting has formerly been conceptualized as a trait rather than an intra-individually fluctuating state, researchers recently found evidence for variation in job crafting behavior within individuals on a daily basis (Petrou, Demerouti, Schaufeli, & Hetland, 2012). For these reasons, failures at work, learning behavior, and job crafting will all be measured on a daily basis.

Measuring day-level concepts is done by means of a diary study, which refers to *'experiences and processes occurring during the day without referring to a particular event'* (Ohly, Sonnentag, Niessen, & Zapf, 2010, p.84). Ohly et al. (2010) identify three major advantages of diary studies in comparison to cross-sectional study designs. Firstly, diary methods offer insight in respondents' natural life contexts, instead of laboratory settings. Secondly, the results of diary studies are less affected by retrospective bias than survey study results are, because the time passed between experiencing an event and describing the event is shorter, and thus the memories are more reliable. Lastly, diary studies enable researchers to take the situational context into account and move past static models of behavior (Ohly et al., 2010).

In conclusion, the current research aims to (1) expand the existing literature by measuring failures and learning behavior on a daily basis, and (2) identify daily job crafting behavior as a potential moderator for the relationship between daily failures at work and learning behavior.

### Theoretical background

Organizational failure can be defined as '*a disruption that prevents the completion of an organizational task or achieving a desired organizational end*' (Carmeli & Gittell, 2008, p.711). However, in this thesis, in which failures will be measured on a daily basis, failures at work can take many forms besides not completing a task or achieving a goal. The current research therefore defines failure using Bakker's (2015) self-undermining scale, by considering them as 'errors at work'. These errors at work can take the form of mistakes, the creation of stress, confusion in communication with colleagues, a backlog in tasks, problems, or conflicts (Bakker, 2015).

Sitkin (1992) explains in detail how failure might be more beneficial to organizational learning than success. When one has found a successful way to do their job, there is no need to change anything about it. Failure, on the other hand, indicates a need for change. People who fail are more likely to actively start searching for information and to have more tolerance for risks (Sitkin, 1992), which are behaviors that foster learning from failure.

However, learning from failure is not as easy as it may seem. For example, many organizations suffer from organizational defense routines, which are defined as '*any policies or actions that prevent organizational players from experiencing embarrassment or threat*' (Argyris, 1992, 'Understanding organizational defensive routines', para. 1). Those routines prevent learning from failure, because the causes of embarrassment or threat remain covered (Argyris, 1992). Another example is offered by Bauer (2008), who found that learning from failure is dependent on the individual interpretation of the error situation, in such a way that perceiving an error as a chance for learning enhances learning behavior, while perceiving failure as something that should be hidden inhibits learning behavior. The aforementioned examples on the relationship of learning and failure indicate that there are third variables (i.e., moderators) influencing this relationship.

The current research examines job crafting as a possible moderating variable between failures and learning behavior. Based on the literature review, there is no account of research considering the possibility of job crafting behavior moderating this relationship to date. However, since job crafting can be described as a proactive behavior to change the situation or to change oneself (Tims, Bakker, Derks, & Van Rhenen, 2013), it can be assumed that employees engaging in job crafting behavior will experience more learning behavior resulting from failures than employees not engaging in job crafting behavior. Job crafters could, for example, develop more skills to be able to perform their tasks better (Tims et al., 2013); in this way, job crafters could learn from failure by developing more skills.

Traditionally, job crafting has been defined as *'the actions employees take to shape, mold, and redefine their jobs'* (Wrzesniewski & Dutton, 2001, p.180). However, empirical research using this definition of job crafting has treated job crafting more as a stable individual trait rather than as a fluctuating state (Demerouti & Bakker, 2014). Recently, researchers have conceptualized job crafting in line with the job demands-resources (JD-R) model (Bakker & Demerouti, 2014). The JD-R model states that job characteristics can be categorized as job demands or job resources. In this categorization, job demands are associated with physiological and/or psychological costs, while job resources help in achieving work goals, reducing job demands, and stimulating growth, learning, and development (Bakker & Demerouti, 2014). In line with the JD-R model, job crafting can be defined as *'the changes employees make in their levels of JD-R on their own initiative'* (Tims et al., 2014, p.493). This definition of job crafting better captures the day-level fluctuations of job crafting (Demerouti & Bakker, 2014). For this reason, Tims et al.'s (2014) definition of job crafting is used in the current research.

When conceptualizing job crafting in terms of the JD-R model, a distinction can be made between (1) seeking resources, (2) seeking challenges, and (3) reducing demands

(Petrou et al., 2012). This conceptualization is especially suitable to meet the aims of this thesis, since Petrou et al. (2012) have developed a scale to measure seeking resources, seeking challenges, and reducing demands on a daily basis.

It has been shown that job crafting has several positive outcomes. Job crafting is positively related to work engagement (e.g., Tims et al., 2013), positive self-image, perceived control, and readiness to change (Lyons, 2008), organizational commitment and job effectiveness (Ghitulescu, 2007), and performance (e.g., Leana, Appelbaum, & Shevchuk, 2009; Tims et al., 2013). However, as mentioned before, scientific literature has not yet linked job crafting behavior to learning from failure.

Furthermore, the abovementioned job crafting studies have one thing in common: they all measure job crafting as a relatively stable individual trait rather than a fluctuating state. As mentioned before, the current research conceptualizes job crafting on a daily basis, following Petrou et al. (2012), who showed that day-level job crafting influences day-level work engagement. Since job crafting behavior can be triggered by the situation at work, it is only reasonable to expect job crafting behavior to fluctuate from day to day (Petrou et al., 2012).

To explore the effects job crafting might have on the relationship between failures at work and learning behavior, the three distinctive job crafting behaviors – seeking resources, seeking challenges, and reducing demands – will be discussed. The hypotheses that will be tested are summarized in Figure 1.

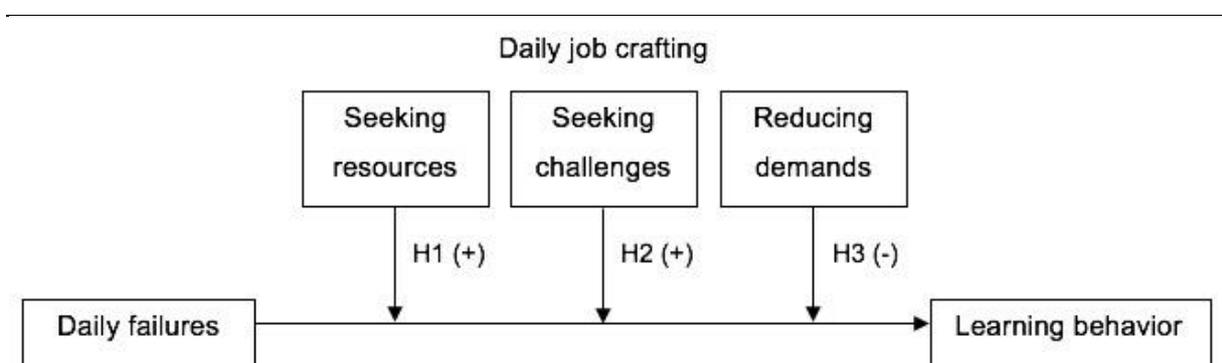


Figure 1. Conceptual model.

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### **Seeking Resources**

Seeking resources *'may include behaviors such as asking advice from colleagues or supervisors, asking feedback on one's job performance, or seeking learning opportunities'* (Petrou et al., 2012, p.1122). Since the conceptualization of job crafting in terms of the JD-R model is fairly recent, it is necessary to take a look at the three behaviors included in the above definition of seeking resources, namely asking feedback, asking advice, and seeking learning opportunities.

The existing literature on feedback-seeking, one of the identified behaviors of seeking resources, is extensive. For example, Ashford found that people will actively seek feedback when they are faced with uncertainty (Ashford & Cummings, 1985) and when they fear they are failing to attain their goals (Ashford, 1986). This could mean that employees who deal with daily failures that hinder them to attain their goals, will actively seek feedback in an attempt to learn to improve their future performance.

Seeking feedback has been linked to increased role clarity and increased task performance (Whitaker & Levy, 2012), increased creative performance (De Stobbeleir, Ashford, & Buyens, 2011), increased managerial effectiveness (Ashford & Tsui, 1991), and increased learning behavior (Eraut, 2007). In addition, Sparr, Knipfer, and Willems (2017) found that seeking informal feedback after receiving a formal training enables employees to continue to learn from this training. This suggests that feedback seeking is an important way for employees to learn at their jobs. It is expected this also holds true for learning from daily failures.

Asking advice from colleagues and seeking learning opportunities have received less attention in scientific literature than seeking feedback. One study found that *'help-seeking behavior'*, which constitutes asking for assistance, information, support, or advice (Van der Rijt et al., 2013), is a strategy to learn in the classroom and positively affects academic

performance (Ryan, Gheen, & Midgley, 1998). It is likely that this also holds true for employees in a working situation. One longitudinal study that focused on nurses, engineers, and accountants in their early careers found that consultations within or outside the working group are frequently used to learn at work (Eraut, 2007). These consultations are used to get advice from coworkers. Eraut (2007) concludes that proactive employee behavior in asking questions and seeking learning opportunities are important behaviors to learn at work.

Although these proactive behaviors are important to provide learning on the job in any circumstance, it can be expected that this is especially important for employees to learn from mistakes. Scientific research on this is currently lacking. However, Van der Helden, Boksem, and Blom (2009) analyzed the effect negative feedback has on the brain. They concluded that brain responses to feedback predicts learning behavior; the more negative the amplitude, the more learning behavior takes place (Van der Helden et al., 2009). In other words, it can be assumed that seeking negative feedback, which likely follows failures, leads to more learning behavior than seeking positive feedback, which would likely follow success. Therefore, it is expected that seeking resources in general will have a positive influence on the relationship between daily failures and learning behavior.

*Hypothesis 1:* The relationship between daily failures at work and learning behavior is moderated by seeking resources, such that the relationship is stronger when seeking resources is high rather than low.

### **Seeking Challenges**

The second form of job crafting behavior, seeking challenges, is said to occur when employees actively look for new tasks to do or new responsibilities to take on (Petrou et al., 2012), which means employees are expanding their job variety. Seeking challenges can also be understood in terms of seeking job demands to make the job more challenging.

Job demands have been shown to lead to learning behavior for highly proactive employees (Parker & Sprigg, 1999), which makes it plausible to expect that employees who proactively seek job demands, or challenges, will show more learning behavior than employees who do not seek challenges. Similar results have been found by Taris and Feij (2004), who conclude that newcomers in the workplace show more learning behavior when they experience both high job demands and high control. Unfortunately, literature on the specific case of learning from failure by seeking job demands is lacking. However, there is some additional research that suggests employees can indeed learn from daily failures by seeking challenges.

One way in which seeking challenges could potentially help employees to learn from daily failures, is motivational. Eraut (2007) found that tackling challenging tasks and roles to learn at work can lead to increased employee motivation and confidence. Given that failure is often associated with negative emotional responses (Shepherd et al., 2009), motivation and confidence could be very helpful to cope with these negative emotions and to view failures as a learning experience.

Finally, Sitkin (1992) proposes multiple ways employees learn from failures. Failure can cause employees to actively search for ways to improve, motivate employees to adapt, cause employees to be more tolerant for risks, and induce experimentation (Sitkin, 1992). These processes are closely linked to seeking challenges, since employees who seek challenges are likely to search for new tasks and responsibilities (Petrou et al., 2012); in other words, they are searching for ways to improve, adapt, and experiment. Thus, it is expected that employees who are seeking challenges will be able to learn from their daily failures through, for example, adapting their tasks and experimenting with new tasks.

*Hypothesis 2:* The relationship between daily failures at work and learning behavior is moderated by seeking challenges, such that the relationship is stronger when seeking challenges is high rather than low.

### **Reducing Demands**

Finally, the third form of job crafting, reducing demands, has received less attention in the literature. It may *'include behaviors targeted toward minimizing the emotionally, mentally, or physically demanding job aspects or reducing one's workload and time pressure'* (Petrou et al., 2012, p.1123). Since reducing demands could indicate low motivation (Petrou et al., 2012), some consider it to be a dysfunctional side of job crafting. Wrzesniewski and Dutton (2001) have already discussed that job crafting is not always positive for employees and organizations. For example, it could harm organizational effectiveness if the job crafting behavior does not align with the organizational boundaries (Wrzesniewski & Dutton, 2001).

The available scientific research on reducing demands also offers some evidence of reducing demands being dysfunctional in comparison to seeking resources and seeking challenges. Reducing demands leads to lower task performance and altruism (Demerouti, Bakker, & Halbesleben, 2015). Moreover, while seeking resources and seeking challenges have a positive effect on work engagement, reducing demands is negatively related to employee work engagement (Petrou et al., 2012). On top of this, Tims, Bakker, and Derks (2012) have shown that seeking resources and seeking challenges relate positively to job performance, employability, and work engagement, while reducing demands has no significant effect on these outcomes. From these studies, it can be concluded that reducing demands has very different consequences than the other two job crafting behaviors. Although the effect of reducing demands on learning behavior has, to my knowledge, not been researched yet, it can be assumed from the aforementioned studies that reducing demands will not have a positive effect for employees who want to learn from their mistakes at work.

However, as mentioned before, it has been shown that high job demands are related to learning behavior (Parker & Sprigg, 1999; Taris & Feij, 2004). In contrast, low job demands lead to low levels of learning, especially in combination with low job control (Taris & Feij, 2004). This can also be inferred from the job demands-resources (JD-R) model (Bakker & Demerouti, 2007), which proposes that job resources lead to motivation at work, but especially when job demands are high. Hence, considering the fact that (1) reducing demands has been linked to several negative outcomes, such as reduced task performance and reduced work engagement (Demerouti et al., 2015; Petrou et al., 2012), and (2) high job demands are related to learning behavior and motivation (Parker & Sprigg, 1999; Taris & Feij, 2004; Bakker & Demerouti, 2007), whereas low job demands are related to low levels of learning (Taris & Feij, 2004), it is expected that reducing demands does not lead to learning behavior at work.

In the special case of employees who experience many daily failures, it might be even more detrimental to employ the strategy of reducing demands. Employees who deal with many failures might already show less job performance, less work engagement, and less motivation in comparison to employees who do not experience many failures. Considering the fact that reducing demands could negatively impact job performance (Demerouti et al., 2015), work engagement (Petrou et al., 2012), and motivation (Bakker & Demerouti, 2007), this would be especially harmful for those employees who already experience many failures. Therefore, it is expected that reducing demands negatively moderates the relationship between daily failures at work and learning behavior.

*Hypothesis 3:* The relationship between daily failures at work and learning behavior is moderated by reducing demands, such that the relationship is stronger when reducing demands is low rather than high.

## Method

### Procedure and Respondents

The research is conducted as a diary study in which participants filled in daily questionnaires for a minimum of three days and a maximum of five days, following a baseline questionnaire. The data were gathered in The Netherlands, with solely Dutch-speaking participants. Because the study was part of a larger research project on work failures, some additional trait-level and day-level variables, which fall outside the scope of the present thesis, were measured. In the following sections, I only refer to the variables that are relevant to the present hypothesized model.

Together with three fellow students, I have contacted 416 participants via social media and my own personal contacts. Since these personal contacts have different jobs across different organizations in different sectors, recruiting participants in this way is likely to increase the heterogeneity of the sample, which enables generalization of the findings (Demerouti & Rispen, 2014). Participation was voluntary and participants have been told they had a chance to win a €50 voucher by participating in the baseline questionnaire and a minimum of three daily questionnaires. Participants were informed they would receive e-mails with links to the questionnaires. The baseline questionnaire (i.e., containing demographic or other trait-level variables) was sent to the participants on Monday, May 1<sup>st</sup>, 2017. Participants were given until Sunday, May 7<sup>th</sup>, 2017 to fill out this baseline questionnaire. The daily questionnaires (i.e., containing only day-level variables) followed from Monday, May 8<sup>th</sup> to Friday, May 12<sup>th</sup>, 2017; these questionnaires were only open to answer from 3:00 PM until midnight.

Of the 416 participants, 126 participants eventually filled out the minimum of three daily questionnaires, as well as the baseline questionnaire, leading to a response rate of 30%, which is relatively low. This might be partly due to respondents not satisfying the three

conditions to participate in the study, which were (1) working at least three days per week, (2) working at a company (any company), and (3) not working as a freelancer. While these conditions have been considered in the search for participants, it could be that some of the 416 participants still did not satisfy these conditions. Moreover, the daily nature of the current research, meaning participants need to fill out a questionnaire every day, could be seen as too demanding by some participants. Another possible reason for the low response rate could be participants forgetting about the research. However, Field (2014) has shown that a sample size of 119 would be sufficient to test up to ten predictors; thus, we can conclude a sample size of 126 is sufficient for the current research.

The sample of 126, consisting of 63 men and 63 women, has a mean age of 38.9 years ( $SD = 13.5$ ). Most respondents were either scientifically (38.1%) or vocationally educated (40.5%). Compared to the Dutch working population, of which 10.6% was scientifically and 22.9% was vocationally educated in 2011-2012 (Researchcentrum voor Onderwijs en Arbeidsmarkt, 2013), the present sample shows an overrepresentation of high education levels. The mean contract hours per week in the sample is 36.1 hours ( $SD = 5.2$ ), and respondents worked on average 7.8 years in their current function ( $SD = 9.1$ ). Of all participants, 19.8% were working in a financial institution, 17.5% in government, 17.5% in healthcare, 10.3% in business services, 7.1% in education, 5.6% in industry, 4.0% in trade, 2.4% in construction, and 1.6% in transportation. 14.3% of participants said they work in another sector. Finally, we have checked for leadership in the sample; 19.8% of the sample has a leading role in the organization.

### **Instruments**

The baseline questionnaire was used to measure demographic variables of the sample (or other trait-level variables that are not reported in the present thesis). It measured gender, age, marital status, level of education, the number of contract hours per week, position,

tenure, sector, and whether respondents have a leading role at work. This questionnaire also functioned as a filter to exclude all the participants that did not meet the three research conditions of (1) working at least three days per week, (2) working at a company (any company), and (3) not working as a freelancer.

The daily questionnaires were used to measure daily failures at work, daily learning behavior, and daily job crafting behavior. Due to the fact that the research took place in The Netherlands, Dutch translations were used.

**Daily failures.** Daily failures, or ‘errors at work’, were measured by means of the self-undermining scale (Bakker, 2015), slightly adjusted to refer to the day-level. This includes six items, for example, ‘Today I have made mistakes’ and ‘Today I have created a backlog in my tasks’, ranging from 1 = *totally disagree* to 7 = *totally agree*, Cronbach’s  $\alpha = .78$ . The complete scale, including the Dutch translations, is shown in Appendix I.

**Daily learning behavior.** To measure daily learning behavior, a scale from the input-mediator-output-input (IMOI) model of team functioning (Ilgen et al., 2005) was used, adapted by Schippers, Homan, and Van Knippenberg (2013). This is a five-item scale that has been adjusted to measure individual learning behavior instead of team learning behavior. Example items include ‘Today while performing my tasks, I have increased my knowledge’ and ‘Today I have been able to find innovative solutions to problems’, with the scale ranging from 1 = *totally disagree* to 7 = *totally agree*, Cronbach’s  $\alpha = .85$ . Appendix II shows the complete scale including the Dutch translations.

**Daily job crafting.** Job crafting is measured using the day-level job crafting questionnaire (Petrou et al., 2012), which consists of ten items. ‘Day-level seeking resources’ is measured with four items, for example, ‘I have asked others for feedback on my job performance’, Cronbach’s  $\alpha = .73$ . ‘Day-level seeking challenges’ is measured with three items, for example, ‘I have asked for more tasks if I finish my work’, Cronbach’s  $\alpha = .93$ .

Finally, ‘day-level reducing demands’ is measured with three items, for example, ‘I have tried to ensure that my work is emotionally less intense’ (Petrou et al., 2012), Cronbach’s  $\alpha = .88$ .

All these scales ranged from 1 = *totally disagree* to 7 = *totally agree*. The complete job crafting scale, including the Dutch translations, is shown in Appendix III.

### **Statistical Analyses**

Since multilevel analysis falls outside the scope of this thesis, all answers on items of the daily questionnaires have been aggregated; a new variable has been constructed that displays the mean of the answers on these items. The hypothesized model will then be investigated using hierarchical regression analysis. The aggregation of data implies that daily fluctuations between the variables will not be visible and causality of the results cannot be assumed. However, the advantages of diary studies mentioned by Ohly et al. (2010) still hold true. The aggregation of data does not change the fact that the diary method offers insight in natural life contexts, as opposed to laboratory settings. Moreover, the results of this study will be less affected by retrospective bias than survey study results usually are (Ohly et al., 2010).

## **Results**

### **Descriptive Statistics**

The means, standard deviations and correlations of the study variables are shown in Table 1. Daily failure does not correlate significantly with daily learning behavior and seeking challenges, but all other variables correlate with each other.

### **Data Quality**

First, to make sure multicollinearity of the data would not be a problem, I have centered the independent variable, daily failures, and the moderator variables, the three forms of job crafting. The interaction effect of daily failures and job crafting has been produced by multiplying these centered variables. Multicollinearity is cause for concern if the largest VIF-score is greater than 10 (Bowerman & O’Connell, 1990) or if the tolerance-scores are below

0.2 (Menard, 1995). In this case, the largest VIF-score is 1.98 and the lowest tolerance-score is .51, which means we can conclude that multicollinearity will not be a problem in the current dataset.

Table 1

*Means, standard deviations and correlations of study variables (N = 126)*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Daily failure	2.41	0.71	-			
2. Daily learning behavior	4.51	0.84	.08	-		
3. Seeking resources	3.90	1.05	.28**	.50**	-	
4. Seeking challenges	2.57	1.26	-.01	.49**	.53**	-
5. Reducing demands	2.10	0.84	.33**	.22*	.25**	.40**

\* $p < .05$ ; \*\* $p < .001$

Second, I have checked for outliers and influential cases in the data. Standardized residuals all lie between -2.58 and +2.58, except for one value of -2.74. This means that 99.2% of the  $z$ -scores fall between -2.58 and +2.58, which is higher than the threshold of 99% (Field, 2014). Moreover, the highest Cook's distance found is 0.15, which is well below the threshold of 1 (Field, 2014). Finally, Field (2014) has shown that, when maintaining  $p < .05$ , with a sample size of 100, the Mahalanobis distance should not exceed 124.34. Since the Mahalanobis distance of the current data does not exceed 44.90, it can be concluded that there are no outliers or influential cases that need to be deleted from the sample.

Third, normality of the dependent variable, learning behavior, has been checked. From this analysis, it can be concluded that learning behavior does not significantly deviate from a normal distribution,  $D(126) = .05$ ,  $p = .200$ .

Finally, since all data are gathered through self-reports, a possible problem to arise is the common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Harman's single

factor test produces a result of 29.3%, which is below the threshold of 50% (Eichhorn, 2014).

Therefore, there is no reason to assume that common method bias is present in the data.

Table 2

*Summary of factor analysis for job crafting (N = 126)*

Variable*	Rotated component loadings		
	Seeking resources	Seeking challenges	Reducing demands
SR_2	<b>.89</b>	-.07	.04
SR_4	<b>.67</b>	.35	-.13
SR_1	<b>.65</b>	.35	.16
SR_3	<b>.57</b>	.32	.28
SC_2	.22	<b>.92</b>	.20
SC_3	.21	<b>.87</b>	.26
SC_1	.20	<b>.86</b>	.15
RD_2	.07	.24	<b>.91</b>
RD_1	.12	.23	<b>.89</b>
RD_3	.04	.07	<b>.86</b>
Eigenvalues	1.17	4.49	1.87
Percent of variance	11.74	44.90	18.69

*Note:* Loadings above .40 appear in bold.

\* The corresponding items to these variables are listed in Appendix III.

## Factor Analysis

Factor analysis was conducted to see whether the three forms of job crafting – seeking resources, seeking challenges, and reducing demands – can indeed be considered three distinct factors based on the present data. The ten items were analyzed by means of a principal component analysis with orthogonal rotation (varimax). From the Kaiser-Meyer-Olkin measure of sampling adequacy, it can be concluded the sample used in the current research is adequate,  $KMO = .78$  (Hutcheson & Sofroniou, 1999). Moreover, all KMO values for individual items were greater than .65, which is above the threshold of .5 (Field, 2014). It turned out 75.3 percent of the variance can be explained with three factors with eigenvalues

over the criterion of 1. Table 2 shows the component loadings after rotation. The complete scale has been added to Appendix III. This suggests job crafting can indeed be divided into three factors, namely seeking resources, seeking challenges, and reducing demands. This is consistent with the theory.

Table 3

*Hierarchical regression analysis with dependent variable daily learning behavior (N = 126)*

Variable	Model 1		Model 2		Model 3	
	$\beta$	SE	$\beta$	SE	$\beta$	SE
Constant	5.04**	.28	4.58**	.26	4.45**	.27
<i>Control variables</i>						
Age	-.00	.01	.01	.01	.01	.01
Gender	-.06	.14	-.06	.13	-.00	.14
Tenure	-.04**	.01	-.02**	.01	-.02**	.01
Leadership	-.21	.18	-.03	.16	-.18	.16
<i>Main effects</i>						
Daily failures			-.02	.07	-.03	.07
Seeking resources			.24**	.08	.23**	.08
Seeking challenges			.24**	.09	.22*	.09
Reducing demands			.03	.07	.05	.08
<i>Interaction effects</i>						
Daily failures * Seeking resources					.04	.07
Daily failures * Seeking challenges					-.17*	.08
Daily failures * Reducing demands					.08	.07

Note:  $R^2 = .18^{**}$  for Model 1;  $\Delta R^2 = .19^{**}$  for Model 2;  $\Delta R^2 = .03$  for Model 3.

\* $p < .05$ ; \*\* $p < .001$

### Hypotheses testing

Hierarchical regression analysis was used to test the hypothesized model. Table 3 shows the results of this analysis. Age, gender, tenure, and supervisory position have been measured as control variables. Before turning to the hypotheses testing, there are some interesting main effects to be considered. Daily failure does not have a significant direct effect

on daily learning behavior,  $\beta = -.03$ ,  $t = -.35$ ,  $p = .726$ . However, both daily seeking resources,  $\beta = .23$ ,  $t = 2.88$ ,  $p = .005$ , and daily seeking challenges,  $\beta = .22$ ,  $t = 2.58$ ,  $p = .011$ , are positively related to daily learning behavior. Finally, daily reducing job demands does not show a significant relationship with daily learning behavior,  $\beta = .05$ ,  $t = .62$ ,  $p = .539$ . These main effects are in line with expectations based on scientific research.

Hypothesis 1 predicted that seeking resources would have a significant positive moderating effect on the relationship between daily failures and learning behavior. Hierarchical regression analysis shows that, although the effect is positive, the effect seeking resources has on this relationship is very small and insignificant,  $\beta = .04$ ,  $t = .52$ ,  $p = .604$ . Therefore, Hypothesis 1 can be rejected.

Hypothesis 2 predicted that seeking challenges would have a significant positive moderating effect on the relationship between daily failures and learning behavior. However, the current analysis shows a significant *negative* effect of seeking challenges on this relationship,  $\beta = -.17$ ,  $t = -2.07$ ,  $p = .041$ . This means Hypothesis 2 should also be rejected. To further examine the moderating effect of seeking challenges, it is useful to look at the interaction plot which is shown in Figure 2. This plot shows that employees with few daily failures show more learning behavior if they also report high seeking challenges. For employees with many daily failures, it does not matter whether they are low or high in seeking challenges. In other words, seeking challenges seems to be a good learning strategy for employees who experience few daily failures, while it provides no significant benefits to employees who experience many daily failures.

Finally, Hypothesis 3 predicted that reducing demands would have a significant negative moderating effect on the relationship between daily failures and learning behavior. The analysis shows that the effect reducing demands has on this relationship is, contrary to

expectations, slightly positive, but insignificant,  $\beta = .08$ ,  $t = 1.17$ ,  $p = .245$ . For this reason, Hypothesis 3 will also be rejected.

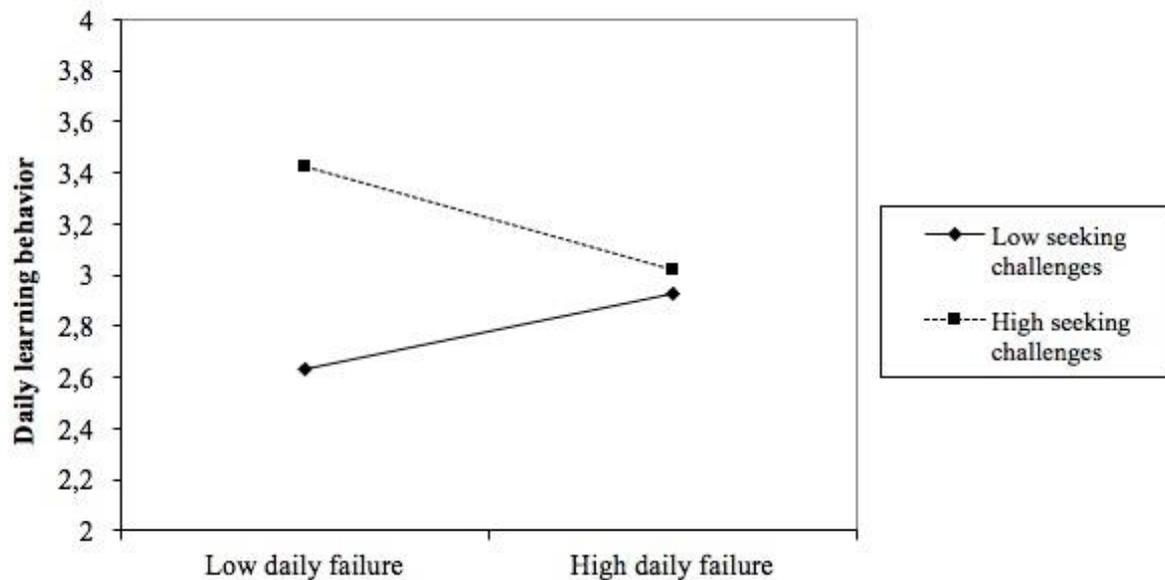


Figure 2. Interaction plot.

## Discussion

The present thesis had two aims, namely (1) to expand the existing literature by measuring failures and learning behavior on a daily basis, and (2) to identify daily job crafting behavior as a potential moderator for the relationship between daily failures at work and learning behavior. The first aim was met by measuring the variables by means of a daily diary study, in which respondents filled out a questionnaire for three to five consecutive days. This way of collecting data (1) offers insight in participants' natural life context, as opposed to laboratory settings, and (2) eliminates retrospective bias in comparison to survey studies, since the time passed between experiencing an event and describing the event is shorter, which makes memories more reliable (Ohly et al., 2010).

The second aim of the present study, to identify daily job crafting behavior as a possible moderator for the relationship between daily failures and learning behavior, will now

be discussed. First, main effects are discussed. Hierarchical regression analysis shows that, as expected, daily failure does not significantly lead to learning behavior. Although learning from failure would seem more beneficial than learning from success (Sitkin, 1992), until now scientific research has shown that this relationship is complicated and heavily depends on other factors influencing the relationship (e.g., Argyris, 1992; Bauer, 2008).

Furthermore, although no hypotheses were constructed regarding the main effects of daily job crafting results show that two forms of job crafting – seeking resources and seeking challenges – have a positive significant relationship with learning behavior; in other words, employees who employ the strategies of seeking resources and seeking challenges show more daily learning behavior at work. This is consistent with scientific literature. For example, Eraut (2007) shows that seeking feedback, asking advice, and seeking learning opportunities – which together constitute ‘seeking resources’ – *‘are critically important for learning, retention, and commitment’* (Eraut, 2007, p.420). Moreover, an increase in job demands, which is what employees who ‘seek challenges’ aim for, has been shown to lead to increased learning behavior (Parker & Sprigg, 1999). The effect of reducing demands on daily learning behavior turns out to be insignificant. Given the fact that reducing demands lead to lower task performance (Demerouti et al., 2015) and lower work engagement (Petrou et al., 2012), it does not seem surprising that reducing demands does not help employees to learn from their daily failures. Furthermore, a low level of job demands has been shown to lead to less learning behavior compared to a high level of job demands (Taris & Feij, 2004). The main results of the present analysis therefore provide further support for the existing scientific literature on the three job crafting behaviors.

Regarding the hypothesized effects, the results are unexpected. It was hypothesized that seeking resources and seeking challenges would positively moderate the relationship of

daily failures and learning behavior, and reducing demands would negatively moderate this relationship. However, none of these effects are visible in the present data.

The data show that seeking resources does not significantly interact with daily failures to predict learning behavior. A possible explanation for this is that there might be individual differences influencing the relationship; for example, self-efficacy. Individuals with high self-efficacy have been shown to perform better after receiving feedback than individuals with low self-efficacy (Johnson, Perlow, & Pieper, 1993). Furthermore, students with high self-efficacy are more likely to seek help than students with low self-efficacy (Ryan et al., 1998); this could be similar for employees seeking advice from colleagues. It has also been suggested that individuals with high self-efficacy persist after experiencing failures more easily than individuals with low self-efficacy (Bandura, 1986), which might translate to individuals with high self-efficacy showing more learning behavior following failure. The present study did not include self-efficacy, but future research could explore this possibility or might identify other individual characteristics that influence the relationship of seeking resources and learning from failures.

Moreover, contrary to the expectations, seeking challenges has a negative effect on the relationship between daily failures and learning behavior, meaning that employees who employ the strategy of seeking challenges show more learning behavior when they experience less daily failures than when they experience more daily failures. A potential explanation for this is that there are, again, third variables to consider. Parker and Sprigg (1999) showed, for example, that for proactive employees, high job demands only lead to mastery in jobs with high job control, in contrast to jobs with low job control. Taris and Feij (2004) draw a comparable conclusion, by showing that high demand and low control jobs lead to high levels of strain, which inhibits learning. Therefore, since the current study did not include job control as a control variable, this variable might explain the negative effect that seeking

challenges has on the relationship between daily failures and learning behavior. Future research could analyze this possibility.

Finally, reducing demands was hypothesized to have a negative moderating effect on the relationship between daily failures and learning behavior, but this effect turns out to be insignificant and even slightly positive. In other words, daily failures on itself does not lead to learning behavior, and the strategy of reducing demands will not change this. It has been previously demonstrated that reducing demands is related to negative outcomes in the workplace, such as reduced work engagement (Petrou et al., 2012) and reduced task performance (Demerouti et al., 2015); therefore, the fact that reducing demands does not help employees to learn from their failures is not surprising. However, the present study does not provide any insight as to why reducing demands does not negatively moderate the relationship between daily failures and learning behavior. As with seeking challenges, job control is a potential explanation for this result, since it has been shown that jobs with low demands lead to a lower level of learning behavior for jobs with low control than for jobs with high control (Taris & Feij, 2004). Thus, job control might influence the relationship between reducing demands and learning from failure, which could explain the insignificant results obtained in the current study. This possibility might be interesting for future research to investigate.

Another interesting finding of the current thesis is the main effect of job tenure on learning behavior. Employees who are relatively new in their current function show more learning behavior than employees who have been employing the same function for many years. Although this is not a surprising result, it could be interesting for future research to further investigate this relationship and see, for example, whether tenure interacts with daily failures in its relationship with learning behavior.

### **Limitations**

The present research is not without its limitations. First, although the data have been obtained using a daily diary study, due to a lack of respondents filling in the questionnaire for five consecutive days, the data have been aggregated across all days. This eliminates all daily fluctuations, which should be considered when analyzing the results. Future research could replicate this study without aggregating the data and analyze the data by means of multilevel analysis.

Second, partly because of the aggregation of all daily data, no conclusion can be drawn regarding to causality of the results. In other words, it is not possible to conclude that daily failures and daily job crafting behaviors are antecedents of learning behavior or whether learning behavior is the antecedent.

Third, the sample shows an overrepresentation of high education levels in comparison to the Dutch working population. One possible explanation for this is that highly educated people are more likely to participate in scientific research because they are more familiar with it. It should however be considered when interpreting the results of the current research.

### **Implications for Future Research**

As suggested in the previous section, there are some interesting research questions to be considered for future research. First, future research could replicate this study without aggregating the data and analyze the data by means of multilevel analysis. This could reveal interesting daily fluctuations that are not visible in the current data and it provides the possibility to make conclusions about causality. Second, future research could consider third variables, like self-efficacy or job control, that might influence the relationship between seeking resources and learning from failures as well as the relationship between reducing demands and learning from failures. Third, future research could consider the negative effect of seeking challenges on the relationship between daily failures and learning behavior; there might be interesting third variables, like job control, influencing this relationship. Finally,

defining and measuring job crafting on a daily basis, instead of as a stable individual trait, is a fairly recent trend in scientific literature. The present study offers further evidence that job crafting can indeed be considered a fluctuating state, following Petrou et al. (2012), rather than a fixed trait. It is therefore important that future research continues measuring job crafting in this way.

### **Implications for Practice**

For practice, the most relevant conclusions from the current study can be derived from the main effects. The fact that daily failures on itself do not lead to learning behavior for employees, means that managers could benefit from finding ways to make learning from failures easier. However, the present thesis does not offer practical recommendations to do this.

The present study shows that the strategies of seeking resources and seeking challenges lead to an increase in learning behavior for employees. Managers could take advantage of this information by promoting proactivity in employees. It is important to create a culture in which seeking feedback from supervisors and asking advice from colleagues is stimulated and not frowned upon. Moreover, a certain level of autonomy to adopt new tasks and experiment with new responsibilities could be important for employees to learn in their jobs.

Managers could consider implementing an intervention, such as the job crafting intervention developed and tested by Van den Heuvel, Demerouti, and Peeters (2015). This intervention consists of a training session of one day, where employees learn about the theory and practice of job crafting. This is followed by four weeks of applying job crafting and then a reflection. This job crafting intervention has been shown to increase opportunities for development, self-efficacy, and it reduces negative affect (Van den Heuvel et al., 2015).

Training employees on job crafting could make the organization a place of learning and constant development.

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## Appendix I

## Self-undermining scale

Table 4

*Self-undermining scale Bakker (2015) to measure errors at work, including Dutch translation; English items shown between brackets*

Item	Statement
SUS_1 <sup>1</sup>	Vandaag heb ik fouten gemaakt. [Today I have made mistakes.]
SUS_2	Vandaag heb ik stress veroorzaakt op het werk. [Today I have created stress at work.]
SUS_3	Vandaag heb ik verwarring gecreëerd toen ik met anderen op het werk communiceerde. [Today I have created confusion when I communicated with others at work.]
SUS_4	Vandaag heb ik mijn taken laten ophopen tot een achterstand. [Today I have created a backlog in my tasks.]
SUS_5	Vandaag ben ik tegen problemen aangelopen op het werk. [Today I have run into problems at work.]
SUS_6	Vandaag heb ik conflicten veroorzaakt. [Today I have created conflicts.]

*Note:* The answering range used is a Likert-scale from 1 = helemaal mee oneens [totally disagree] to 7 = helemaal mee eens [totally agree].

<sup>1</sup> SUS = self-undermining scale

## Appendix II

## Daily learning behavior scale

Table 5

*Daily learning behavior scale Schippers et al. (2013) including Dutch translation; English items shown between brackets*

Item	Statement
LBH_1 <sup>1</sup>	Vandaag heb ik tijdens het uitvoeren van mijn taken mijn kennis vergroot. [Today while performing my tasks, I have increased my knowledge.]
LBH_2	Vandaag heb ik geleerd van mijn gemaakte fouten. [Today I have learned from my mistakes in my tasks.]
LBH_3	Vandaag ben ik in staat geweest innovatieve oplossingen te vinden voor problemen. [Today I have been able to find innovative solutions to problems.]
LBH_4	Vandaag heb ik creatieve oplossingen gevonden voor problemen. [Today I have found creative solutions to problems.]
LBH_5	Vandaag heb ik geleerd hoe ik de uitvoering van mijn taken kan verbeteren. [Today I have learned how to improve at my tasks.]

*Note:* The answering range used is a Likert-scale from 1 = helemaal mee oneens [totally disagree] to 7 = helemaal mee eens [totally agree].

<sup>1</sup> LBH = learning behavior

## Appendix III

## Daily job crafting scale

Table 6

*Day-level job crafting scale Petrou et al. (2012) including Dutch translation; English items shown between brackets*

Item	Statement
SR_1 <sup>1</sup>	Vandaag heb ik anderen gevraagd om feedback te geven over mijn functioneren. [Today I have asked others for feedback on my job performance.]
SR_2	Vandaag heb ik collega's om advies gevraagd. [Today I have asked colleagues for advice.]
SR_3	Vandaag heb ik mijn leidinggevende om advies gevraagd. [Today I have asked my supervisor for advice.]
SR_4	Vandaag heb ik geprobeerd om nieuwe dingen te leren op het werk. [Today I have tried to learn new things at work.]
SC_1 <sup>2</sup>	Vandaag heb ik om meer taken gevraagd toen ik klaar was met mijn werk. [Today I have asked for more tasks if I finish my work.]
SC_2	Vandaag heb ik om meer verantwoordelijkheden gevraagd. [Today I have asked for more responsibilities.]
SC_3	Vandaag heb ik op meer uitdagende klussen gevraagd. [Today I have asked for more odd jobs.]
RD_1 <sup>3</sup>	Vandaag heb ik ervoor gezorgd dat ik minder emotioneel inspannend werk hoefde te verrichten. [Today I have tried to ensure that my work is emotionally less intense.]
RD_2	Vandaag heb ik ervoor gezorgd dat ik minder geestelijk inspannend werk hoefde te verrichten. [Today I have made sure that my work is mentally less intense.]
RD_3	Vandaag heb ik ervoor gezorgd dat ik minder fysiek zwaar werk hoefde te verrichten. [Today I have tried to ensure that my work is physically less intense.]

*Note:* The answering range used is a Likert-scale from 1 = helemaal mee oneens [totally disagree] to 7 = helemaal mee eens [totally agree].

<sup>1</sup> SR = seeking resources

<sup>2</sup> SC = seeking challenges

<sup>3</sup> RD = reducing demands