The relationship between job crafting and work engagement: the mediating role of workload and colleague support and the moderating role of self-efficacy

Master Thesis

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Abstract

The aim of this cross sectional study was to contribute to a better understanding of job crafting activities on work engagement with workload and colleague support as mediating mechanisms and the influence of self-efficacy as moderator. Data was gathered from 197 teachers of regular and special need elementary and secondary schools and was analysed using multiple regression. Additionally, a Hayes mediating moderation model analysis was used. Results showed that crafting challenging job demands and crafting social job resources are positively associated with higher levels of work engagement. In addition, colleague support is partially mediating the relationship between crafting social job resources and work engagement. In contrast, workload was not found as a mediator in the relationship between crafting challenging job demands and work engagement. In turn, self-efficacy was not found as a moderator in the relation between workload and work engagement. To conclude, this research showed that job crafting activities positively influence teachers' work engagement. For this reason, it is suggested for organizations to offer employees opportunities for job crafting activities.

Keywords: work engagement, job crafting, workload, colleague support, Job Demands-Resources model (JD-R model), self-efficacy

Introduction

Teaching is a complicated job and there is a need for teachers to completely commit to their work with their heart (Day, 2000). Despite the complex job, the majority of teachers is not stressed, burned-out or unmotivated (Rudow, 1999), instead they experience their work as satisfying (Borg & Riding, 1991). By creating a better fit between their goals and their jobs, teachers will experience a higher level of work engagement (Wrzesniewski & Dutton, 2001). Work engagement is a positive and work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Roma, & Bakker, 2002). This means that engaged teachers are dedicated, energetic, and committed to their work. Researchers showed evidence that employees' work engagement is important to achieve high organizational performance (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009).

A way to create higher levels of work engagement in teachers' work is by designing their own jobs (Hackman & Oldham, 1980). Today, job design is no longer only a top-down approach (decisions made by the organization or its managers) but it has become more a bottom-up approach (employees are responsible to design their jobs themselves) (Berg, Wrzesniewki, & Dutton, 2010). These actions by which people change features of their jobs and interactions with others to reconsider the meaning of the job and the social setting at work is called job crafting (Wrzesniewski & Dutton, 2001). There are several job crafting dimensions, two dimensions are related to the level of job resources (i.e. crafting social job resources and crafting structural job resources) and the other two dimensions refer to the type of job demands (i.e. crafting challenging job demands and crafting hindering job demands). In this study the focus lies on crafting social job resources and crafting challenging job demands.

Previous research found evidence that employees who craft their jobs, experience higher levels of work engagement (Tims, Bakker, & Derks, 2013). Job crafting behaviour might help to optimize work engagement. Employees could search for more challenge in their job, for instance by taking over tasks of colleagues, for this reason their workload will be higher. If teachers craft their challenging job demands, this could also result to higher levels of work engagement. In addition, employees could influence their job resources (Tims et al., 2013), they could increase their social job resources, for instance by seeking feedback (Bakker, Rodríguez-Muñoz, & Vergel, 2016), which could result in experiencing more colleague support. This might also lead to higher levels of work engagement.

The work experience of teachers is dependent of demands and resources but besides the job characteristics, also the personal resources have positive effects on the well-being of the employee (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Personal resources are defined as characteristics of the person that are mainly related to resiliency and refer to the ability of employees to control their environment successfully (Hobfoll, Johnson, Ennis, & Jackson, 2003). Personal resources have the same role as job resources, they are created to enhance motivation (Xanthopoulou et al., 2007). This makes personal resources important to include in this research. In this study the focus is on the personal resource self-efficacy as a moderator between workload and work engagement. Self-efficacy is an individual's confidence about the ability to successfully complete a task (Stajkovic & Luthans, 1998). Bandura (1997)

showed that self-efficacy is positively related to work-related performance, such as work engagement. When employees have high levels of self-efficacy, they are probably able to choose tasks that are challenging (Larson & Luthans, 2006), compared to employees with low levels of self-efficacy (Bandura, 1997). In addition, Speier and Frese (1997) showed that employees are more able to do difficult tasks when they have high levels of self-efficacy. In contrast, employees with low levels of self-efficacy are more likely to avoid a challenging environment.

The goal of this study is to investigate teachers' job crafting activities (i.e. crafting challenging job demands and crafting social job resources) and examine whether job demands in terms of workload, job resources in terms of colleague support and self-efficacy as personal resource affect their work engagement. The contribution of this study is threefold. First, this study adds to the field of HRM by providing more insights about the effect of job crafting dimensions (i.e. crafting challenging job demands and crafting social job resources) on employees' well-being in terms of work engagement (Bakker & Demerouti, 2007). Second, this research expands to the literature by responding on future research suggestions, indicating that future studies need to determine whether employees who show job crafting behaviour, change their job demands and resources (Oldham & Hackman, 2010). Finally and thirdly, this study takes into account the role of personal resources (i.e. self-efficacy), employees' level of self-efficacy could positively impact their level of work engagement. The relevance of this study is emphasized in the innovatory role of personal resources (i.e. self-efficacy) as a moderator between a challenging job demand and work engagement. Self-efficacy has mainly been studied in the relation between a job demand and negative outcomes such as burnout. For instance, the study of Van Yperen and Snijders (2000) showed that self-efficacy has a moderating effect between job demands and health implications. To the best of the researcher's knowledge, this is the first time that self-efficacy have been examined as a moderator between a challenging job demand (i.e. workload) and work engagement. Therefore, the following research question is formulated:

"To what extent does job crafting behaviour (i.e. crafting challenging job demands and crafting social job resources) affect work engagement, and to what extent is this relationship mediated by workload and colleague support and moderated by self-efficacy?"

Theoretical framework

Job crafting and work engagement

Job crafting is about proactive changing the job design, which is not specific negotiated with the organization. Wrzesniewski and Dutton (2001) suggested the idea of job crafting. Job design (Hackman & Oldham, 1980) is different from job crafting by focusing on peoples' job experience whereby the tasks are fixed. Whereas job crafting involves the actions by which people change features of their jobs and interactions with others to reconsider the meaning of the job and the social setting at work (Wrzesniewski & Dutton, 2001). In addition, job crafting is defined as "the physical and cognitive changes individuals make in the task or relational boundaries of their work" (Wrzesniewski & Dutton, 2001, p. 179).

Individuals engaged in job crafting behaviour can change the physical changes which applied the form, scope or number of job tasks, while the cognitive changes refer to how people approach their job and, finally, the relational boundaries changes apply to changing the relations and interactions employees have with colleagues (Bakker et al., 2016). The identity of the employee, the meaning of the job and its tasks could change by these processes (Lyons, 2008). Moreover, job crafting could lead to an increase of employees' own job challenges and resources, just as a decrease of employees' hindrance job demands (Tims, Bakker, & Derks, 2012).

Tims et al. (2012) create a distinction between four job crafting dimensions. Two of these job crafting dimensions are related to the level of job resources: structural (e.g. creating autonomy and variety in the job) and social job resources (e.g. receiving social support and feedback). Two other job crafting dimensions refer to the type of job demands: challenging (e.g. dealing with workload) and hindering job demands (e.g. dealing with emotional demands). In the current study, the focus lies on crafting social job resources and crafting challenging job demands. If employees craft their social job resources, for example by asking for feedback, they are better able to accomplish their work tasks, which could lead to a higher level of well-being in terms of work engagement (Tims et al., 2013). If employees craft their challenging job demands, by doing extra projects which create a more challenging job, this might result in higher levels of work engagement (Tims et al., 2013).

Engagement has often been cited as the "key to organizational success and competitiveness" (Gruman & Saks, 2011, p. 124). A lack of agreement among experts and researchers on an explicit definition of work engagement can be found in the current literature (Maslach & Leiter, 1997; Rich, LePine, & Crawford, 2010; Schaufeli & Bakker, 2010; Schaufeli & Salanova, 2011). In this research the definition according Schaufeli et al. (2002) is provided. They defined work engagement as "a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption" (p.74). The first element of work engagement, *vigor*, is featured by high levels of energy, the willingness of employees to put effort into their work and the perseverance during difficulties (Schaufeli et al., 2002). Vigor is observed as high activation which makes vigor the opposite of exhaustion (low activation). The second element, *dedication*, refers to the sense of enthusiasm, inspiration and satisfaction. Employees who have a high score on dedication, experience their work as meaningful, valuable and stimulating. Related to the concept of identification, dedication (high identification) is the opposite of cynicism (low identification). The third element, *absorption*, is the quality of being fully concentrated and engaged in one's work. It is difficult for the employee to detach oneself from their work tasks (Schaufeli et al., 2002). In this study, all three elements will be used to fully be able to measure the complete concept of work engagement.

The Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007) is used as a starting point to describe the relation between job crafting and work engagement. This model clarifies how employees' well-being may be shaped by two specific sets of job characteristics, job demands and job resources (Bakker, Tims, & Derks, 2012). Job demands were defined as "those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore

associated with certain physiological and psychological costs" (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001 , p.501). Examples of job demands are workload and time pressure. Job resources refer to "those physical, social, or organizational aspects of the job that may do any of the following: (a) be functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth and development" (Demerouti et al., 2001, p.501). Examples of job resources are social support (e.g. colleague support) and autonomy. The JD-R model creates two processes: the health impairment process and the motivational process. The health impairment process could occur by poorly job designs or prolonged job demands (e.g. workload). It exhausts employees and may lead to stress and health problems. The motivational process could occur which assumes that job resources (e.g. colleague support) have motivational effect and lead to high organizational outcome, such as work engagement (Bakker & Demerouti, 2007). These factors could contribute to the decrease of job demands, which could help in the feeling of work engagement (Bakker & Demerouti, 2007). By crafting job demands, employees could increase their challenging job demands, which results in an increase of work engagement. These challenging demands need more effort from the employee, but the employee is motivated to spend this effort since the result is expected to be satisfying (Tims et al., 2013). By crafting job resources, employees could increase their social job resources, which results in higher levels of work engagement. This is in line with the motivational process whereby an increase in job resources leads to an increase in work engagement (Bakker & Demerouti, 2007).

Previous research found evidence that job crafting (i.e. crafting challenging job demands and crafting social job resources) has a positive impact on work engagement (Tims et al., 2013). Schaufeli, Bakker, and Van Rhenen (2009) recently examined via a two-wave longitudinal study that when employees change their job resources, this also leads to changes in the well-being of the employees, such as their work engagement. They showed that job crafting by increasing social support, autonomy and performance feedback results in higher levels of work engagement. For this reason, when there is an increase of job resources, job satisfaction and work engagement will also increase. Bakker et al. (2016) showed that crafting challenging job demands has a positive relationship with work engagement. Wrzesniewski and Dutton (2001) stated that the extent to which job crafting behaviours contribute to the performance of the organization is influenced by the sort of changes that people make in their job. Employees can create a better fit between their goals and their jobs which results in a positive meaning of work (i.e. work engagement) (Wrzesniewski & Dutton, 2001). Finally, Tims and Bakker (2010) stated that job crafting has positive results since employees will be more engaged. Based on the previous reasoning, this study suggests the following hypothesis:

Hypothesis 1a: Job crafting, in terms of crafting challenging job demands, has a positive effect on work engagement

Hypothesis 1b: Job crafting, in terms of crafting social job resources, has a positive effect on work engagement

Crafting social job resources, colleague support and work engagement

Job resources play a motivational role since it encourages employees' growth, learning and development. There are several job resources such as feedback, social support and autonomy. In this study, one job resource is included, namely colleague support. Social support can be defined as "the resources provided by other persons" (Cohen & Syme, 1985, p.4), for instance your colleagues. The persons who are giving the social support have the intention to improve the well-being of the colleague (Shumaker & Brownell, 1984). The self-determination theory (Deci, Vallerand, Pelletier, & Ryan, 1991) aligns basic needs, for instance the influence of social settings and employees' personal development, on employees' well-being. According to this theory, colleague support is in line with the basic need of relatedness, which increases employees' well-being (i.e. work engagement). Employees' satisfaction about the basic needs could result in higher levels of work engagement (Bakker & Demerouti, 2008).

As explained above, job crafting is a process whereby employees change features of their job design. The job characteristics theory (Hackman & Oldham, 1980) is a job design theory that suggests that people could be more motivated by designing their jobs. The task of the job itself will motivate the employees, so challenging jobs will motivate the employees more. Job crafting is constructed according to the JD-R model, which changes the job characteristics (job demands and job resources) (Bakker & Demerouti, 2007; Demerouti et al., 2001). Employees could craft their jobs on the level of job demands, the level of job resources, or both (Tims et al., 2013). This study expects that if employees craft their social job resources, for instance by asking feedback, their experience of colleague support will be higher. Thus, employees could influence their own social job resources (Bakker et al., 2016), which could result in more colleague support. Moreover, employees who experience more colleague support, could have higher levels of work engagement. This is in line with the motivational process whereby an increase in job resources leads to an increase in work engagement (Bakker & Demerouti, 2007).

The research of Tims et al. (2013) showed that employees who craft their social job resources will experience higher levels of job resources (i.e. colleague support). A meta-analysis by Halbesleben (2010) has shown that job resources are positively related to work engagement. Job resources, such as social support, is supposed to play an extrinsic and intrinsic motivational role. An extrinsic motivational role because it contributes in achieving job aims and an intrinsic motivational role because it advanced employees' learning and development (Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). Previous studies showed that social support and performance feedback have a positive result on work engagement (Bakker, Van Emmerik, & Euwema, 2006; Sonnentag, 2003; Schaufeli & Bakker, 2004; Demerouti et al., 2001). Several studies showed that there is a positive relationship between colleague support and work engagement (Halbesleben, 2010; Schaufeli & Bakker, 2004; Schaufeli et al. 2009). Hackman, Pearce, and Wolfe (1978) showed that employees who redesigned their jobs, scored higher on job resources like autonomy, task identity and feedback. In addition, these employees also scored higher on their well-being such as work engagement. Job resources have an influence on work engagement (Hakanen, Bakker, & Demerouti, 2005). This research expects a partial mediation which could represent

an indirect pathway between crafting social job resources and work engagement via colleague support. Additionally, this study assumes a direct effect of crafting social job resources on work engagement, since the expectation is that crafting social job resources will also directly lead to higher levels of work engagement. Based on the previous reasoning, this study suggests the following hypotheses:

Hypothesis 2: Employees who craft their social job resources, will experience more colleague support

Hypothesis 3: Employees who experience more colleague support, will have a higher level of work engagement

Hypothesis 4: The more employees craft their social job resources, the higher the level of work engagement, being partially mediated by colleague support

Crafting challenging job demands, workload and work engagement

Job demands such as time pressure and workload are also called challenging job demands (Tims et al., 2012). These demands need more effort but it creates a positive reaction from employees such as higher levels of work engagement. The challenging job demands could lead to personal gain or growth when the employees are able to overcome them (Lazarus & Folkman, 1984; Crawford, LePine, & Rich, 2010). In contrast, hindering job demands, are estimated as stressful because these demands bother the personal growth and goal achievement which hinder employees' performance and well-being (LePine, Podsakoff, & LePine, 2005). In this study, one challenging job demand is included, namely workload. Workload indicates to what extent the job is challenging in terms of work complexity, work speed and the mental effort (Van Veldhoven & Broersen, 1999). Employees might search for more challenge in their job, for instance by taking over tasks of colleagues, for this reason their workload will be higher (Tims & Bakker, 2010).

By crafting challenging job demands, employees could influence their level of workload by doing extra projects, which might result in higher levels of work engagement. According to LePine et al., (2005) challenging demands are positively associated with high motivation, since employees expect that coping with these demands will lead to a positive outcome such as work engagement. Employees have to work hard for job demands but the employee is encouraged to work hard because they see the demands as challenging and therefore the result will be satisfying (Tims et al., 2013). This study expects that if employees craft their challenging job demands, by creating a more challenging job for themselves by for instance doing extra projects that are motivating to them, the level of their workload will be higher. Moreover, employees with higher levels of workload, could have higher levels of work engagement (Lu, Chang & Lai, 2011).

According to Demerouti and Cropanzano (2010) employees perform at their best in challenging, resourceful work environments, since these environments enhance employees' work engagement. The results of Lu et al., (2011) showed that workload could motivate and inspire employees to succeed at their job, this suggests a positive relationship between workload and work engagement. Several studies

indicated an indirect evidence that people who show job crafting behaviour, change their work environment into a more challenging environment, will be more engaged (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008; Hyvonen, Feldt, Salmela-Aro, Kinnunen, & Makikangas, 2009). Thus, if teachers craft their challenging job demands, for instance by doing extra projects, their work will be more challenging, which results in higher levels of work engagement. This research expects a partial mediation which could represent an indirect pathway between crafting challenging job demands and work engagement via workload. Additionally, this study supposes a direct effect of crafting challenging job demands on work engagement, since the expectation is that crafting challenging job demands will also directly lead to higher levels of work engagement. Based on the previous reasoning, this study suggests the following hypotheses:

Hypothesis 5: Employees who craft their challenging job demands, will experience higher levels of workload

Hypothesis 6: Employees who experience higher levels of workload, will experience higher levels of work engagement

Hypothesis 7: The more employees craft their challenging job demands, the higher the level of work engagement, being partially mediated by workload

The role of self-efficacy

Positive organizational behaviour (POB) is defined as the "study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance in today's workplace" (Luthans, 2002, p.59). There are four positive psychological capacities that have been determined by Luthans, Youssef, and Avolio (2007), which are self-efficacy, hope, optimism, and resiliency. In this study, the focus lies on the capacity self-efficacy, since the expectation is that this personal resource has an influence in the relationship between employees' perception of workload and work engagement. In other words, high self-efficacious employees have the feeling that they have a high possibility of achievement in dealing with job demands, which might have a positive influence on their level of work engagement (Tims & Bakker, 2010). In addition, this is the personal resource which has been studied mostly (Bandura, 1997). Self-efficacy is defined as "an individual's convictions (or confidence) about his or her abilities to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context" (Stajkovic & Luthans, 1998, p.66). Bandura (1997) showed that self-efficacy is positive connected to work-related performance, for example work engagement. Self-efficacy can be developed by modelling and receiving positive feedback. When an employee has a lot of self-efficacy, then these individuals are probably able to choose tasks that are challenging. These employees invest more effort to complete the tasks and they possess perseverance when they are in difficult situations (Larson & Luthans, 2006).

Previous studies on the JD-R model have been limited to work characteristics, which has the consequence that personal resources of employees have been neglected. Personal resources can be important factors of the adjustment to work environments by the employees (Hobfoll, 1989; Judge, Locke, & Durham, 1997). Xanthopoulou et al., (2007) made an extension of the JD-R model and included personal resources in this model (e.g. self-efficacy). Personal resources have a comparable role as job resources, since they are created to enhance motivation. They play an important role in the JD-R model since personal resources, such as self-efficacy, contribute in clarifying differences in work engagement (Xanthopoulou et al., 2007). For that reason, mutually job and personal resources could improve work engagement (Schaufeli & Bakker, 2010). In the current study, the role of self-efficacy will be examined as a moderator between workload and work engagement. This means that this study expects that the effect between workload and work engagement will be stronger if employees have higher levels of self-efficacy rather than under lower levels of self-efficacy. When employees have high levels of self-efficacy, they are probably able to choose tasks that are challenging (Larson & Luthans, 2006), compared with employees with low levels of self-efficacy (Bandura, 1997), which might result in a stronger effect between workload and work engagement.

The meta-analysis by Stajkovic and Luthans (1998) has shown that self-efficacy is strongly related to job performance in a positive way. The reason for this is that employees who have a greater self-efficacy are capable of finding an effective way to deal with demands (e.g. workload). The study of Van Yperen and Snijders (2000) examined self-efficacy as a moderator in the relationship between job demands and health implications. They suggested that employees with high levels of self-efficacy could deal more successfully with demands, which results in prevention from negative outcomes. In addition, Speier and Frese (1997) showed that employees are more able to do difficult tasks when they have high levels of self-efficacy. In contrast, employees with low levels of self-efficacy are more likely to avoid a challenging environment. Thus, self-efficacious employees are more able to spend the obligatory effort to reach their work goals and to overcome difficulties in their job, which could lead to higher levels of work engagement (Chen, Gully, & Eden, 2001). Furthermore, the research of Xanthopoulou, Bakker, and Fischbach (2013) showed that high demands and high levels of self-efficacy result in higher levels of work engagement. In addition, high demands and low levels of self-efficacy result in lower levels of work engagement. This study will therefore examine self-efficacy as a moderator between workload and work engagement. Based on the previous reasoning, this study suggests the following hypothesis:

Hypothesis 8: Self-efficacy moderates the effect of workload on work engagement, such that workload has a stronger effect on work engagement under conditions of higher levels of self-efficacy rather than under conditions of lower levels of self-efficacy.

Based on these hypotheses, the following conceptual model (Figure 1) is created:

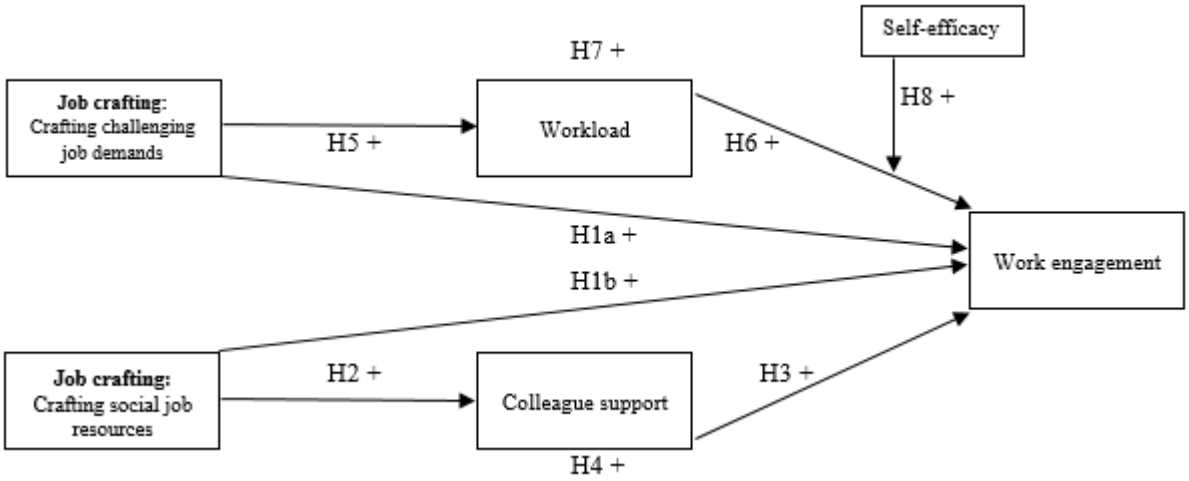


Figure 1. Conceptual model

Method

Study design and procedure

The purpose of this study was to test the relationship between job crafting and work engagement, with workload and colleague support as a mediator and self-efficacy as a moderator in this relationship. A cross sectional study design was used to test the relationships. The data used in this study was part of a larger research on teachers' well-being and performance. Questionnaires included questions about the well-being and performance of the employee and were distributed in the educational setting within the Netherlands. Data was gathered from 197 teachers working at various schools within the Netherlands. Three master students of Human Resource Studies at Tilburg University collected the data in 2016. The first stage consisted of the selection of elementary, secondary and special need schools. The three students had to approach schools and teachers in order to find teachers who were willing to participate in the research. The second stage of the sampling design involved the selection of a heterogeneous sample within the private network, in order to ensure a representative reflection of the population.

The teachers (N=197) were provided with an information letter (see Appendix A) and the questionnaire (see Appendix B). The questionnaire was tested through a pilot, two teachers had filled in the questionnaire beforehand to guarantee that the questionnaire was complete and clear. The questionnaire was digital distributed and provided in Dutch. Every teacher who was interested, received an e-mail that described the aim of the study, emphasized the anonymity, and provided a personal link to the survey. Qualtrics is the method program that was used to collect the data. In addition, a flyer (see Appendix C) was created to enthuse the teachers for participating in the study. This flyer was also used on social media such as Facebook and LinkedIn.

Population and sample

The population of this study are Dutch teachers working at elementary schools and secondary schools including special need education. For selecting participants, quota sampling was used, since this is a sampling method of gathering representative data from a group. Quota sampling is a non-probability

technique of sampling where the sample has the same proportions and characteristics of the entire population, thus the individuals are chosen out of a specific subgroup (Explorable.com, 2009a). In the current study, it was aimed to select a sample of approximately 200 respondents, where gender differences, work areas and age differences were taken into account in order to achieve that the sample has the same characteristics as the population. In addition, snowball sampling was used, this is a non-probability sampling technique as well (Explorable.com, 2009b). The researchers asked for assistance from the respondents that were selected by quota sampling to help identify people with a similar trait of interest, thus other teachers who met the requirements of the sample (Explorable.com, 2009b).

The data collection for this research consisted of 197 employees (response rate was 60.2%). In this study, female participants were in the majority (76.1%). The figures of Stamos (2016) suggest that there are more women working in elementary and secondary schools (68.6%), which clarifies the number of women. Most of the participants were working in regular elementary and secondary schools (81.7%). At the same time, the majority of children are going to regular schools (Kalkhoven & Van Uitert, 2015). This explains the higher percentage of teachers in regular schools compared to the percentage of teachers in special need education in this study, since these regular schools require more teachers. In addition, there are more elementary schools than secondary schools in the Netherlands, as a result of which the majority of the teachers is working in elementary schools (41.0%) (Kalkhoven & Van Uitert, 2015). In the current study more teachers of secondary institutions were participating (42.6%). For this reason, the sample of the type of educational institution is not in line with the whole population. The average age of the participants was 41.28 year, which is marginally lower than the average age of teachers in 2014 which was 44.00 year (CBS, 2016). Based on this information, the sample of this study provides a clear vision of the population except for the type of educational institutions.

Demographic characteristics of the participants are shown in Table 1 in Appendix D. 76.1% of the participants was female. The age of the participants ranged from 21 to 75, with an average of 41.28 year (SD = 13.74). 22.8% of the participants was single, 73.6% was married/living together and 3.6% divorced. 56.9% of the participants had children. The employees were working in elementary school (39.1%), secondary school (42.6%), special need elementary school (14.2%) and special need secondary school (4.1%). Most participants had a fixed contract 73.1%. The working hours ranged from ‘five hours per week’ to ’60 hours per week’. Job tenure as a teacher ranged from ‘one’ to ‘51’, with a mean of 15.58 year (SD = 12.43).

Measures

Although the scales that were used in the questionnaire have been validated in prior research, the validity is checked again in the current study. In order to test the validity of the scales, factor analyses (Principal Component Analysis) were executed. To create a factor solution, the scale had to fulfil several requirements. The KMO Measure of Sampling Adequacy should be above .6 and the Barlett’s Test of Sphericity had to be significant ($p < .05$) (Pallant, 2013). Kaiser’s criterion was used to describe the number of components acquired from the factor analysis. Factors with an eigenvalue greater than one

were considered as one component, since they clarify a significant amount of variation (Field, 2009). If Kaiser's criterion presented more than one component, screeplot was used to confirm the amount of components. The loadings in the pattern matrix should be higher than .3 to decide if an item was acceptable for the component (Pallant, 2013). In addition, to test the reliability of all scales, Cronbach's alpha (α) coefficient was used, which was derived from the reliability analysis. According to George and Mallery (2003) a Cronbach's alpha (α) above .9 was considered 'excellent', above .8 as 'good' and above .7 as 'acceptable'. The validity and reliability of the scales used in the current study will be presented below. The factor analyses and reliability analyses of all scales are attached in Appendix E.

Job crafting. Job crafting was measured with the job crafting scale of Tims et al., (2012). This research focused on two dimensions of job crafting, namely crafting social job resources and crafting challenging job demands. These two dimensions are measured with ten items using a four-point Likert scale (ranged from 1 = never to 4 = always). Sample items are 'I ask my colleagues for advice' and 'I see an opportunity to start new projects at work when there is not much to do'. The principal component analysis was carried out to check the validity of the scales. The pattern matrix showed that the job crafting consisted of the two dimensions (see Appendix F). For this reason, the two job crafting dimensions of crafting challenging job demands and crafting social job resources are distinguished in this study. An additional factor analysis on the items of the 'crafting challenging job demands' dimension showed a KMO-index of .842, and a significant (p = .000) Bartlett's test of sphericity. Based on the eigenvalue, one factor was indicated (eigenvalue = 3.122). This component explained 62.448% of the variance. Based on the reliability analysis, the reliability of the scale was good (α = .848). An additional factor analysis on the items of the 'crafting social job resources' dimension showed a KMO-index of .765, and a significant (p = .000) Bartlett's test of sphericity. Based on the eigenvalue, one factor was indicated (eigenvalue = 2.888). This component explained 57.764% of the variance. Based on the reliability analysis, the reliability of the scale was good (α = .815).

Workload. Workload was measured with the workload scale of Van Veldhoven and Meijman (2008), consisting of six items. A four-point Likert scale was used to measure this scale (ranged from 1 = never to 4 = always). A sample question is 'Do you have problems with the workload?'. The factor analysis showed a KMO-index of .865, and a significant (p = .000) Bartlett's test of sphericity. All items had a factor loading of .3 and higher on one component. Based on the eigenvalue, one component was indicated (eigenvalue = 3.730). This component explained 62.164% of the variance. Based on the reliability analysis, the reliability of the scale was good (α = .877).

Colleague support. Colleague support was measured with the colleague support scale of Van Veldhoven and Meijman (2008), consisting of six items. A four-point Likert scale was used to measure this scale (ranged from 1 = never to 4 = always). A sample item is 'If necessary, could you ask your colleagues for help?'. The scores of item 4 and 6 were reversed coded. The factor analysis showed a KMO-index of .734, and a significant (p = .000) Bartlett's test of sphericity. Based on the eigenvalue, two components

were indicated (eigenvalue = 2.791, 1.153), explaining 46.515% and 19.208% of the variance. Also the screeplot showed two components (see Appendix E, Table 12). However, all items had a factor loading of .3 and higher on one component. In addition, by fixing the number of factors to one, all items also loaded on one component. For this reason, this study included all items in one scale. Furthermore, based on the reliability analysis, the reliability of the scale was acceptable (α = .761).

Work Engagement. Work engagement, including vigor, dedication and absorption, was measured with a shorten version of the scale of Schaufeli et al., (2002), consisting of nine items. A seven-point Likert scale was used to measure this scale (ranged from 0 = never to 6 = always). An example question from the questionnaire was 'I am enthusiastic at work'. The factor analysis presented two components, this was also shown in the screeplot (see Appendix E, Table 14). The item 'I can hardly detach from work' had a lower loading than .3 on component one (see Appendix E, Table 15). All other items had a factor loading of .3 and higher. The other questions were loading in component one which means that these eight items can be interpreted as one component. For this reason the item 'I can hardly detach from work' was deleted from the scale. The factor analysis, after deleting this item, showed a KMO-index of .861, and a significant (p = .000) Bartlett's test of sphericity. Based on the eigenvalue, one component was indicated (eigenvalue = 4.602). This component explained 57.525% of the variance. Based on the reliability analysis with 8 items, the reliability of the scale was good (α = .875).

Self-efficacy. Self-efficacy was measured with the General Self-Efficacy (GSE) scale of Chen et al., (2001) consisting of eight items. A five-point Likert scale was used to measure this scale (ranged from 1 = totally agree to 5 = totally disagree). Sample question in the questionnaire is 'I believe that I can achieve the results that I think are important'. The factor analysis showed a KMO-index of .778, and a significant (p = .000) Bartlett's test of sphericity. All items had a factor loading of .3 and higher on one component. Based on the eigenvalue, the items loaded on one component (eigenvalue = 2.558). This component explained 63.949% of the variance. Based on reliability analysis, the reliability of the scale was acceptable (α = .797).

Control variables. Control variables are important since these variables control for spuriousness in the relationship between the dependent, mediator, and independent variables in the conceptual model. The following variables were included as control variable: gender (coded as 1 = female; 0 = male), having children (coded as 1 = yes; 0 = no), and amount of working hours. Gender is included since there could be a difference between men and women in experiencing the level of work engagement (Schaufeli, Bakker, & Salanova, 2006). Additionally, Slemp and Vella-Brodrick (2014) found gender differences related to job crafting behaviour. They showed that female participants reported more relational crafting activities (i.e. changing with whom they collaborate in their work) than male participants, which results in higher levels of well-being. The variable amount of working hours is included because Tims and Bakker (2010) stated that the more hours employees work, the more job crafting opportunities they will have. Finally, the variable having children is included since Hahn and Dormann (2013) showed that

having children helps employees to detach from their job during private time, which could influence employees' well-being.

Data analysis

To test the eight hypotheses of this study multiple linear regression analyses were conducted. The model could not be tested in total, since there were not enough participants (N=197) in relation to the many variables that were included in the conceptual model. For this reason, the model was divided in two separate mediations. To test the hypotheses the multiple regression analysis was performed by adding the control variables in block 1. To test the relationships between independent variables crafting challenging demands (H1a) and workload (H6), and dependent variable work engagement were performed by adding the independent variables in block 2. In addition, to test the relationships between independent variables crafting social job resources (H1b) and colleague support (H3), and dependent variable work engagement were performed by adding the independent variables in block 2. Furthermore, to test the relationship between independent variable crafting social job resources and dependent variable colleague support (H2), crafting social job resources was added in block 2. To test the relation between independent variable crafting challenging job demands and dependent variable workload (H5), crafting challenging job demands was added in block 2.

In this study two mediating processes were examined. To test the mediating effects of colleague support (H4) and workload (H7) between job crafting and work engagement, the steps of MacKinnon, Fairchild, and Fritz (2007) were used. The first step was to show a significant relation between X and M (crafting social job resources and colleague support, and crafting challenging demands and workload, respectively). The second step was to show that colleague support (M) affects work engagement (Y) by controlling for crafting social job resources (X). Additionally, workload (M) had to affect work engagement (Y) by controlling for crafting challenging job demands (X). The third and final step was to determine whether the indirect effect was significant with a Sobel test.

The Hayes (2013) Process Macro model 14 was used to test the moderated mediation effect of self-efficacy on the relationship between workload and work engagement (H8).

Results

Descriptive statistics

The mean scores and standard deviations of all main variables, including the control variables can be found in Table 1. There was a positive correlation (Pearson's *r*) between crafting challenging job demands and work engagement ($r = .252$, $p < .01$) and a positive correlation between crafting social job resources and work engagement ($r = .263$, $p < .01$). Another positive correlation was found between colleague support and work engagement ($r = .256$, $p < .01$) and between self-efficacy and work engagement ($r = .278$, $p < .01$). Furthermore, there was also a positive correlation between crafting social job resources and colleague support ($r = .163$, $p < .05$).

In addition, there was a positive correlation between gender and work engagement (r = .265, p < .01), crafting challenging job demands (r = .216, p < .01), crafting social job resources (r = .228, p < .01), and workload (r = .155, p < .05). Moreover, having children had a negative correlation with work engagement (r = -.146, p < .05), crafting challenging job demands (r = -.236, p < .01) and crafting social job resources (r = -.276, p < .01). Finally, amount of working hours had a negative correlation with colleague support (r = -.155, p < .05), and a positive correlation with crafting challenging demands (r = .191, p < .01) and workload (r = .198, p < .01).

Table 1

Descriptive Statistics: Means, Standard Deviations and correlations (N = 197)

	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Work engagement	5.471	.797	--								
2. Colleague support	3.360	.401	.256**	--							
3. Self-efficacy	3.924	.465	.278**	.070	--						
4. Crafting challenging job demands	2.687	.836	.252**	.062	.271**	--					
5. Crafting social job resources	2.281	.682	.263**	.163*	.137	.435**	--				
6. Workload	2.470	.597	.026	-.179*	-.066	.114	.163*	--			
7. Gender[1]	.76	.427	.265**	-.012	-.130	.216**	.228**	.155*	--		
8. Having children[2]	.57	.497	-.146*	-.026	-.049	-.236**	-.276**	-.035	-.127	--	
9. Working hours[3]	36.26	9.554	-.036	-.155*	.107	.191**	.094	.198**	-.139	-.324**	--

Note. ** $p < .01$ two-tailed. * $p < .05$ two-tailed

[1] Female = 1, Men = 0

[2] Yes = 1, No = 0

[3] Amount of working hours per week

Regression analyses

Table 2 shows that crafting challenging demands is positively associated with work engagement (B = .193, p < .01), meaning that the more employees craft challenging job demands, for instance by creating a more challenging job for themselves whereby they could do extra projects that are motivating to them, the higher their work engagement will be. Therefore, the first hypothesis (1a) is supported.

In addition, Table 2 shows a positive significant relationship between crafting social job resources and work engagement (B = .182, p < .05), meaning that the more employees craft social job resources by for example asking for feedback, the higher their work engagement will be. This result supports hypothesis 1b.

Furthermore, Table 3 shows a positive relationship between crafting social job resources and colleague support (B = .111, p < .05), meaning that when employees craft social job resources such as asking for feedback, they will experience more colleague support. This result supports hypothesis 2.

Table 2 shows that there is a positive significant relationship found between colleague support and work engagement (B = .457, p < .01), meaning that when employees experience more colleague support, they will have a higher level on work engagement. This relationship was expected and therefore hypothesis 3 is confirmed.

Table 4 shows the results for testing hypothesis 5, which stated that when employees craft challenging job demands, for instance by doing extra projects, they will experience higher levels of workload. The regression analysis showed no significant relationship for the direct effect between crafting challenging job demands and workload (B = .033, p > .05). For this reason hypothesis 5, which state that employees who craft their challenging job demands, will experience higher levels of workload, is rejected.

Table 2 shows the results for testing hypothesis 6, which stated that employees who experience higher levels of workload, will perceive higher levels of work engagement. The regression analysis showed a negative relationship for the direct effect between workload and work engagement. However, this relationship was not significant (B = -0.23, p > .05). Therefore, hypothesis 6 is not supported.

Finally, a positive significant relationship of the control variable gender was found in testing hypothesis 1a (B = .376, p < .01) and hypothesis 1b (B = .415, p < .01). This means that the effect of job crafting on work engagement will be higher for women than for men. Furthermore, a negative significant relationship of the control variable amount of working hours was found in testing hypothesis 2 (B = -.008, p < .01). This means that the lower the working hours, the lower the effect between crafting social job resources and colleague support will be. Moreover, a positive significant relationship of the control variable gender was found in testing hypothesis 3 (B = .415, p < .01). Which means that the effect of colleague support on work engagement will be higher for women than for men.

Table 2

Results of regression analyses on work engagement

	Work engagement		
	Model 1	Model 2	Model 3
	B	*B*	*B*
Gender[1]	.452**	.376**	.415**
Having children[2]	-.207	-.156	-.113
Working hours[3]	-.004	-.006	-.001
Crafting challenging demands		.193**	
Workload		-.023	
Crafting social job resources			.182*
Colleague support			.457**
R^2	.085**	.121*	.169**
R^2 change		.036*	.085**
F	5.766**	5.083**	7.537**
F change		3.799*	9.415**

Note. ** $p < .01$ * $p < .05$
[1] Female = 1; Male = 0
[2] Yes = 1; No = 0
[3] Amount of working hours per week

Table 3

Results of regression analysis of crafting social job resources on colleague support

	Colleague support	
	Model 1	Model 2
	B	*B*
Gender[1]	-.048	-.084
Having children[2]	-.077	-.041
Working hours[3]	-.008*	-.008**
Crafting social job resources		.111*
R^2	.033	.064*
R^2 change		.031*
F	2.129	3.195*
F change		6.214*

Dependent variable: Colleague support
Note. ** $p < .01$ * $p < .05$
[1] Female = 1; Male = 0
[2] Yes = 1; No = 0
[3] Amount of working hours per week

Table 4

Results of regression analysis of crafting challenging job demands on workload

	Workload	
	Model 1	Model 2
	B	*B*
Gender[1]	.278**	.264*
Having children[2]	.086	.094
Working hours[3]	.016**	.015**
Crafting challenging job demands		.033
R^2	.078**	.079
R^2 change		.002
F	5.244**	4.015**
F change		.377

Dependent variable: Workload

Note. ** $p < .01$ * $p < .05$

[1] Female = 1; Male = 0

[2] Yes = 1; No = 0

[3] Amount of working hours per week

Mediation effects

To test the two mediating effects of colleague support (H4) and workload (H7) between job crafting and work engagement, the procedure of MacKinnon et al. (2007) was followed, as described earlier in this study. Table 2, 3 and 4 shows the results of the multiple regression analyses that tested the mediation effects. Hypothesis 2 ($B = .111$, $p < .05$) and hypothesis 3 ($B = .457$, $p < .01$) are confirmed, meaning that the first and second step of MacKinnon et al. (2007) are met. The third and final step is to determine whether the indirect of the mediating variable is significant. This could be checked by performing the Sobel test. The Sobel test (see Appendix G, Table 23) showed that there is a significant mediation between crafting social job resources and work engagement via colleague support ($Z = 2.007$, $p < .05$). Based on these assumptions, hypothesis 4, which stated that employees who craft social job resources, such as asking for feedback, demonstrate higher levels of colleague support which results in higher levels of their work engagement, is confirmed.

Tables 2 and 4 shows that hypothesis 5 ($B = .033$, $p > .05$) and hypothesis 6 ($B = -.023$, $p > .05$) are not supported, meaning that the first and second step of MacKinnon et al. (2007) are not met. The third and final step is to determine whether the indirect of the mediating variable is significant. This could be checked by performing the Sobel test. The Sobel test (see Appendix G, Table 24) showed that there is no mediation effect between crafting challenging job demands and work engagement via workload ($Z = -.224$, $p > .05$). Based on these assumptions, hypothesis 7 is rejected. The relationship between employees who craft their challenging job demands, such as creating a more challenging job for themselves whereby employees could do the tasks that are motivating to them, demonstrate higher levels of workload resulting in higher levels of work engagement, was not found.

Moderated mediation

In the previous section the mediation analyses were presented. In addition, a moderation analysis was done to examine whether self-efficacy moderates the relationship between workload and work engagement. A moderated mediation model of the Hayes Process Macro (2013) was used to test hypothesis 8 (model 14). The control variables gender, having children and amount of working hours were included in the analysis. The template model 14 of Hayes can be found in Appendix H. Hypothesis 8 states that workload has a stronger effect on work engagement under conditions of high levels of self-efficacy rather than under conditions of low levels of self-efficacy. Table 5 shows the bootstrap but this has no significant effect, zero lies between the lower (LLCI = -.0592) and higher (ULCI = .0237) bootstrap. In addition, there was no significant interaction effect, meaning that a high level of self-efficacy does not strengthen the direct effect of workload on work engagement (LLCI = -.0286, ULCI = .0155). For this reason the moderated mediation was not significant and hypothesis 8 is not confirmed.

Table 5

Index of moderated mediation

	Index	Boot SE	BootLLCI	BootULCI
Workload	-.0014	.0171	-.0592	.0237

Number of bootstrap samples for bias corrected bootstrap confidence intervals: 1000

Levels of confidence for all confidence intervals in output: 95.00

Conclusion and discussion

The aim of this study was to contribute to a better understanding of job crafting activities on work engagement with workload and colleague support as mediating mechanisms, and the influence of self-efficacy as moderator. Based on the JD-R model and the job characteristics theory (Bakker & Demerouti, 2007; Hackman & Oldham, 1980), this study argued that job crafting activities could positively influence workload and colleague support, which enhance the level of employees' work engagement. In this cross sectional survey research 197 teachers participated. The main findings of this research suggested that colleague support partially mediates the link between crafting social job resources and work engagement. Furthermore, crafting challenging job demands was found to positively influence work engagement. Although, workload was not mediating this relationship. Finally, it was hypothesized that self-efficacy influence the effect of workload on work engagement. However, this relationship was not found. The findings of the several hypotheses are explained and discussed in the next section.

First of all, results of this research showed that crafting challenging job demands and crafting social job resources are positively associated with work engagement (hypothesis 1ab). Based on the JD-R model (Bakker & Demerouti, 2007), it was expected that employees who craft social job resources, such as asking colleagues for feedback, would experience higher levels of work engagement. In addition, employees who craft their challenging job demands, for example by searching for new projects to create

a more challenging jobs, would show higher levels of work engagement. This is in line with research of Demerouti and Cropanzano (2010), which stated that employees perform at their best in challenging, resourceful work environments, since these environments enhance employees' work engagement. Additionally, these findings supported the idea that job crafting activities are linked to work well-being, such as work engagement (Schaufeli et al., 2009). Furthermore, the results were in line with the research of Wrzesniewski and Dutton (2001), which described the relation of job crafting and work engagement by stating that when employees create a better fit between their goals and their jobs, they would experience a positive meaning of work such as work engagement. Therefore, the results were in line with the expectation of this research and consistent with the literature.

Secondly, as hypothesized, this study showed that crafting social job resources has a positive influence on colleague support (hypothesis 2). Thus, if employees redesign their jobs by increasing their social resources, they score higher on job resources like colleague support (Hackman et al., 1978), meaning that job crafting activities have a positive influence on colleague support. Tims et al. (2013) showed that crafting social job resources also results in an increase of job resources (i.e. colleague support) over time. Colleague support, in turn, was positively related to work engagement (hypothesis 3), which is in line with previous studies (Bakker et al., 2006; Sonnentag, 2003; Schaufeli & Bakker, 2004; Demerouti et al., 2001). Moreover, these findings supported the self-determination theory (Deci et al., 1991), in showing that colleague support is in line with the basic need of relatedness, which increase employees' well-being (e.g. work engagement). In conclusion, the results were consistent with the existing literature and in line with the expectation of this research.

Thirdly, as hypothesized, colleague support partially mediated the relationship between crafting social job resources and work engagement (hypothesis 4). This expectation was created on the motivational process of the JD-R model (Bakker & Demerouti, 2007), which clarified that job resources often have a positive relationship with employees' well-being (Demerouti et al., 2001). This study showed that crafting social job resources by for example asking for feedback, leads to an increase of employees' colleague support, which results in higher levels of work engagement. Hackman et al. (1978) described this by explaining that employees who redesigned their jobs, scored higher on job resources. In addition, these employees scored higher on work engagement. Tims et al., (2013) showed that an increase in job resources such as colleague support mediates the relationship between crafting social job resources and higher levels of work engagement. Therefore, the results were consistent with the literature and in line with the expectation of this research.

Fourthly, it was expected that crafting challenging job demands has a positive influence on employees' workload (hypothesis 5). However, results showed no evidence for this relationship. This means that employees who commit to activities that motivate them and make their job more challenging, will not experience higher levels of workload. An explanation might be related to the work complexity, work speed and the mental effort of the job (Van Veldhoven & Broersen, 1999), in which the job tasks are challenging for the employees but not result in experiencing higher levels of workload. Another

explanation could be the choice of the challenging job demand (i.e. workload). This study expected that workload could be interpreted as a challenging job demand since it was positive related to work engagement (Crawford et al., 2010). There is a possibility that employees did not experience workload as a challenging job demand which could influence the results. Workload, in turn, was hypothesized to be positively associated with work engagement (hypothesis 6). Results did not indicate that employees who experience higher levels of workload, feel more engaged in their work (Lu et al., 2011). An explanation could be that employees cannot cope with their workload, this might result in a feeling of failing, which could influence their level of work engagement. This is in line with the interpretation of hindering and challenging job demands (LePine et al., 2005; Tims et al., 2012). Both job demands require physical and psychological effort, but in contrast with the hindering job demands, challenging job demands will be experienced as satisfying (Tims et al., 2013). There is a possibility that employees viewed workload as a negative job demand instead of a challenging job demand, which result in no significant relation between workload and work engagement.

Fifthly, hypothesis 7 stated that workload partially mediated the relationship between crafting challenging job demands and work engagement. Results did not show this mediation. Several studies found that people who show job crafting behaviour, by changing their work environment into a more challenging environment, will be more engaged (Hakanen et al., 2008; Hyvonen et al., 2009). This study has delivered evidence for the direct relation between crafting challenging job demands and work engagement (hypothesis 1a), but this study has not delivered evidence to support this mediated relationship via workload. One explanation for this outcome might be that job demands can be added while there are enough job resources to deal with the job demands (i.e. workload). Compared with the JD-R model (Bakker & Demerouti, 2007), employees need job resources (i.e. colleague support) to deal with the job demands, which could lead to work engagement. Additionally, colleague support advances the motivational process when employees are experiencing high workload because this could help to accomplish their goals (Hobfoll, 2002). This study did not include a job resource by testing the relationship between crafting challenging job demands, workload and work engagement. Another explanation might be that the experience of workload differs for every employee, meaning that some people experience workload as a stimulating factor whereas other people experience it as a hindering factor. For this reason, the personality of the employee is an important factor to take into account in employees' experience of workload and their job crafting behaviour.

Finally, hypothesis 8 described the moderating role of self-efficacy on the relationship between workload and work engagement. This hypothesis was not accepted, as this study did not found a moderated mediation. More precisely, the relationship between workload and work engagement was not stronger under conditions of higher levels of self-efficacy rather than under conditions of lower levels of self-efficacy. Earlier research of Van Yperen and Snijders (2000) examined self-efficacy as a moderator in the relationship between job demands and health implications. This study suggested that employees with higher levels of self-efficacy could deal more successfully with demands, which results

in prevention from negative outcomes. An explanation could be that in previous research indicators of burnout were the outcome variable, in contrast with this research whereby work engagement was the outcome variable. Another explanation for the insignificant moderating relationship might be that self-efficacy could be seen as a personal characteristic. There is a possibility that participants find it difficult to evaluate themselves in relation to personal characteristics. Participants could under-estimate or over-estimate their personality, as it strongly depends on their self-image and it is possible that their self-image is not completely accurate. Therefore, the self-image of the participant could influence their answers.

Limitations

In this research, several limitations need to be taken into account. First, this study used a cross sectional design, which means that data was collected at one point in time which restricted the conclusions. Due to the cross sectional design, the causal relationships cannot be examined. This study is possibly based on temporary factors, since the research only provides insight at one moment in time. Therefore, there is no vision of what happened previous to or after the moment of examination. Moreover, the mood of the participants could influence their answers to the questionnaire.

Secondly, the questionnaire in this study might be a limitation. Due to the different variables the questionnaire was very long. For this reason, several participants did not finish the questionnaire. The respondents also commented that the questionnaire did not provide the right answer options on several points. For instance, respondents were missing the answer 'neutral', they were forced to make a decision, since it was a four-Likert scale (ranged from 1 = never to 4 = always). Therefore, there is a possibility that participants did not fill in the answers they wanted, or even worse, the employees gave random answers. These answers could influence the reliability of this research. In addition, a questionnaire limit the answers of the participants. The participants do not have the opportunity to explain their answers.

Thirdly, this study contained self-reporting measures, which might raise the chance of common method bias. This means that participants have a tendency to give consistent answers, which leads to an increase of the correlation between variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Fourthly, this study made use of quota sampling, in which employees were selected based on their gender, age and type of school. Furthermore, this study used snowball sampling. There is a chance of a biased selection of participants, meaning that the most cooperative employees were participating in this study. This might limit the external validity when the results of this study are generalized towards other populations.

Fifthly, a limitation of this study is that the research was only focused on teachers of regular and special need elementary and secondary education. For this reason, the current study is not representative for the whole educational setting or other target groups. In addition, there were 197 teachers participating

in this study. For this reason, the conceptual model of this study could not be tested in total which influenced the results.

Finally, this study should also consider the opportunity for social desirable answers. Although, anonymity was emphasized, there is a chance that respondents were afraid of their colleagues seeing their answers. For this reason, they could have decided to give social desirable answers.

Recommendations for future research

This research explored the relationship between job crafting and work engagement, with colleague support and workload as mediating mechanisms, and self-efficacy as moderator. In the next section the recommendations for future research will be discussed.

First of all, this study had a cross sectional design. In future research it is recommended to use a longitudinal design. This design includes several test moments (i.e. experiment or diary study), as a result of which the causality of the relationship could be better examined (Bryman, 2012). For instance, a study with multiple observations would be a better method for measuring job crafting behaviour because this behaviour could occur on several moments in time. In addition, Wrzesniewski and Dutton (2001) stated job crafting as an enduring activity. In addition, a limitation of this study was the self-reported measure. By using several moments in time to measure the concepts, there is a possibility that common method bias could be avoided. This might be better in terms of research validity.

Secondly, it would be interesting to examine job crafting activities from the organization perspective as well. This means to what extent does an organization stimulate job crafting activities and to what extent gives the organization its employees autonomy to craft their job. A job crafting process needs social support and this research did not examine the support of the organization. Wrzesniewski and Dutton (2001) showed that support from the organization or manager facilitated employees by crafting their jobs. For future research, it is recommended to examine the level of support in an organization before testing job crafting behaviour on individual level.

Thirdly, job crafting activities might have a positive effect on employees' well-being via other job demands or job resources. This study only measured two working conditions of teachers, namely workload and colleague support. For this reason, it is suggested to examine other possible job demands (i.e. job responsibility) and job resources (i.e. achievement of the pupils) in the relationship between job crafting and work engagement (Wrzesniewski & Dutton, 2001; Tims & Bakker, 2010; Crawford et al., 2010). The challenging job demand job responsibility should be examined, since employees might interpret this demand as a chance to learn, this could have an influence on their level of work engagement. In addition, it is stated that teachers have a passion for their work (Roth, Assor, Kanat-Maynon, & Kaplan, 2007). Therefore, it is recommended to measure the job resource achievement of the pupils, which could have an influence on the level of work engagement. With measuring this kind of job resources, the motivational process of the JD-R model would be explored in a different way.

Fourthly, future studies should include the variables gender and amount of working hours, since these variables had an effect in various relationships. Specifically, gender had an effect on the relations with job crafting behaviour and work engagement, which makes it interesting to include gender in future research. This is in line with Slemp and Vella-Brodrick (2014) who showed that female participants reported more job crafting activities than male participants. Additionally, amount of working hours had only an influence on the relationships between job crafting behaviour and workload and colleague support. Which is in line with the literature, since employees need time to craft their jobs (Tims & Bakker, 2010). It is advised to add amount of working hours in future research about job demands and job resources. In contrast, having children had no effect on the relations between specific variables.

Finally, it is recommended to examine the role of personal resources, such as optimism, in the relation between job crafting behaviour and employees' well-being. Personal resources could have an effect on the level of job crafting behaviour (Wrzesniewski & Dutton, 2001). Moreover, employees who are optimistic will try to reach positive outcomes, and they are encouraged to trust in their future regardless prior missteps (Sweetman & Luthans, 2010). Optimistic employees are motivated, show perseverance by facing job demands, which could have a positive effect on their work engagement. Future research should examine the consequences of personal resources in the relationship between employees' job crafting behaviour and their well-being, since the capability and inspiration of employees should be reflected (Tims & Bakker, 2010).

Practical implications

The results of the current study include several practical implications. The first implication of this research is that teachers' job crafting behaviour (i.e. crafting challenging job demands and crafting social job resources) has a positive influence on the levels of work engagement of the teacher. Therefore, it is important for organizations to invest in job crafting activities by giving employees possibilities to craft their job, since teachers craft their work features by themselves. For instance, employees should make their own choices in their work such as choosing an extra project. Job autonomy could make it easier for employees to craft their job demands and job resources (Leana, Appelbaum, & Shevchuk, 2009). Moreover, organizations have to stimulate employees to take initiative to craft their job. Therefore, it is essential for organizations and its managers to show proactive behaviour, since they are a role model for their employees. This behaviour might stimulate teachers to take initiative as well, which possibly results in crafting their job, which might lead to higher levels of work engagement.

A second implication of this study is that it is advisable for organizations to stimulate colleague support, as this research found that colleague support positively influences the levels of teachers' work engagement. Organizations could help employees to enhance their job resources by organizing team or individual based interventions. An intervention might be a teambuilding activity which could help the team by working together, giving support to each other, and to build trust. For instance, organizations should organize feedback sessions, whereby employees could learn in which way they can give feedback

to each other and perceive feedback from their colleagues. This might result in higher levels of work engagement.

Conclusion

To conclude, this research indicates that job crafting is positively related to employees' work engagement. In addition, crafting social job resources is positively related to higher levels of employees' work engagement, via colleague support. Workload was not found as a mediator in the relationship between crafting challenging job demands and work engagement. In addition, self-efficacy as a moderator in the relationship between workload and work engagement was not found. Overall, the most important finding of this study is that teachers' work engagement can be increased by using job crafting activities. In other words, increasing teachers' job crafting behaviour would improve support of colleagues, which in turn enhances employees' work engagement. Based on these findings, this study contributes to a better understanding of teachers' job crafting behaviour and, in turn, teachers' well-being.

References

Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of managerial psychology, 22*(3), 309-328. http://dx.doi.org/10.1108/02683940710733115

Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career development international, 13*(3), 209-223. http://dx.doi.org/10.1108/13620430810870476

Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human relations, 65*(10), 1359-1378. doi:10.1177/0018726712453471

Bakker, A. B., Van Emmerik, H., & Euwema, M. C. (2006). Crossover of burnout and engagement in work teams. *Work and Occupations, 33*(4), 464–489. doi:10.1177/0730888406291310

Bakker, A. B., Rodríguez-Muñoz, A., & Vergel, A. I. S. (2016). Modelling job crafting behaviours: Implications for work engagement. *Human relations, 69*(1), 169-189. doi:10.1177/0018726715581690

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Berg, J. M., Wrzesniewski, A., & Dutton, J. E. (2010). Perceiving and responding to challenges in job crafting at different ranks: When proactivity requires adaptivity. *Journal of Organizational Behavior*, *31*(2-3), 158-186. doi: 10.1002/job.645

Borg, M. G., & Riding, R. J. (1991). Occupational stress and satisfaction in teaching. *British Educational Research Journal*, *17*(3), 263-281. doi:10.1080/0141192910170306

Bryman, A. (2012). *Social research methods*. New York: Oxford University Press Inc.

CBS. (2016). *Werkzame beroepsbevolking; vergrijzing per bedrijfstak SBI 2008.* Retrieved from http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=80832NED&LA=NL

Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational research methods, 4*(1), 62-83. doi: 10.1177/109442810141004

Cohen, S., & Syme, S. L. (1985). Issues in the study and application of social support. *Social support and health, 3*, 3-22. New York: Academic Press.

Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology, 95*(5), 834–848. doi:10.1037/a0019364

Day, C. (2000). Stories of change and professional development. *The life and work of teachers. International perspectives in changing times,* 109-126. London: Falmer Press.

Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational hologist, 26*(3-4), 325–346. doi:10.1080/00461520.1991. 9653137

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3), 499–512. doi:10.1037/0021-9010.86.3.499

Demerouti, E., & Cropanzano, R., (2010). From thought to action: Employee work engagement and job performance. In A. B. Bakker, & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research, 65*, (pp. 147-163). New York: Psychology Press.

Explorable.com. (2009a). Snowball Sampling. Retrieved from Explorable.com: https://explorable.com/snowball-sampling

Explorable.com. (2009b). Quota Sampling. Retrieved from Explorable.com: https://explorable.com/quota-sampling

Field, A. (2009). *Discovering Statistics using SPSS*. London, England: SAGE Publications.

George, D., & Mallery, M. (2003). *Using SPSS for Windows step by step: a simple guide and reference.* Boston, MA: Allyn & Bacon.

Gruman, J. A., & Saks, A. M. (2011). Performance management and employee engagement. *Human Resource Management Review, 21*(2), 123-136. doi:10.1016/j.hrmr.2010.09.004

Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.

Hackman, J. R., Pearce, J. L., & Wolfe, J. C. (1978). Effects of changes in job characteristics on work attitudes and behaviors: A naturally occurring quasi-experiment. *Organizational Behavior and Human Performance*, *21*(3), 289-304. doi:10.1016/0030-5073(78)90055-7

Hahn, V. C., & Dormann, C. (2013). The role of partners and children for employees' psychological detachment from work and well-being. *Journal of Applied Psychology*, *98*(1), 26-36. http://dx.doi.org/10.1037/a0030650

Hakanen J. J., Bakker, A. B., and, Demerouti, E. (2005). How dentists cope with their job demands and stay engaged: The moderating role of job resources. *European Journal of Oral Sciences, 113*(6), 479−487. doi: 10.1111/j.1600-0722.2005.00250.x

Hakanen, J. J., Perhoniemi, R., and Toppinen-Tanner, S. (2008). Positive gain spirals at work: From job resources to work engagement, personal initiative and work-unit innovativeness. *Journal of Vocational Behavior*, *73*(1), 78−91. doi:10.1016/j.jvb.2008.01.003

Halbesleben, J. R. B., (2010). A meta-analysis of work engagement: Relationships with burnout, demands, resources and consequences. In: A. B. Bakker, & M. P. Leiter (Eds), *Work Engagement: A Handbook of Essential Theory and Research* (pp. 102−117). New York: Psychology Press.

Hayes, A. F. (2013). *Introduction to mediation, moderation and conditional process analysis*. New York: Guilford Publications

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American psychologist*, *44*(3), 513-524. http://dx.doi.org/10.1037/0003-066X.44.3.513

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of general psychology*, *6*(4), 307-324. http://dx.doi.org/10.1037/1089-2680.6.4.307

Hobfoll, S. E., Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology, 84*(3), 632–643. http://dx.doi.org/10.1037/0022-3514.84.3.632

Hyvonen, K., Feldt, T., Salmela-Aro, K., Kinnunen, U., & Makikangas, A. (2009). Young managers' drive to thrive: A personal work goal approach to burnout and work engagement. *Journal of Vocational Behavior, 75*(2), 183−196. doi:10.1016/j.jvb.2009.04.002

Judge, T. A., Locke, E. A., & Durham, C. C. (1997). The dispositional causes of job satisfaction: A core evaluations approach. *Research in Organizational Behavior, 19,* 151–188.

Kalkhoven, F., & Van Uitert, K. (2015). Onderwijs sectorbeschrijving. Retrieved from http://www.uwv.nl/overuwv/Images/UWV%20Sectorbeschrijving%20Onderwijs_nov2015.pdf

Larson, M., & Luthans, F. (2006). Potential added value of psychological capital in predicting work attitudes. *Journal of leadership & organizational studies*, *13*(2), 75-92. doi: 10.1177/10717919070130020601

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Leana, C., Appelbaum, E., & Shevchuk, I. (2009). Work process and quality of care in early childhood education: the role of job crafting. *Academy of Management Journal, 52*(6), 1169–1192. http://dx.doi.org/10.5465/AMJ.2009.47084651

LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A meta-analytic test of the challenge stressor–hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal, 48*(5), 764–775. doi:10.5465/AMJ.2005.18803921

Lu, L., Chang, Y. Y., & Lai, S. Y. L. (2011). What differentiates success from strain: The moderating effects of self-efficacy. *International Journal of Stress Management*, *18*(4), 396-412. http://dx.doi.org/10.1037/a0025122

Luthans, F. (2002). Positive organizational behavior: Developing and managing psychological strengths. *The Academy of Management Executive*, *16*(1), 57-72. doi:10.5465/AME.2002.6640181

Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital: Developing the human competitive edge*. Oxford University Press.

Lyons, P. (2008). The crafting of jobs and individual differences. *Journal of Business and Psychology*, *23*(1-2), 25–36. doi:10.1007/s10869-008-9080-2

MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation Analysis. Annual Review of Psychology, *58*(1), 593 - 615. http://doi.org/10.1146/annurev.psych.58.110405.085542

Maslach, C., & Leiter, M. P. (1997). *The truth about burnout.* San Francisco: Jossey-Bass.

Oldham, G. R., & Hackman, J. R. (2010). Not what it was and not what it will be: The future of job design research. *Journal of organizational behavior*, *31*(2-3), 463-479. doi: 10.1002/job.678

Pallant. J. (2013). *SPSS Survival Manual: A step by step guide to data analysis using IBM SPSS* (Vol. 5). New York Open University Press.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, *88*(5), 879 - 903. http://dx.doi.org/10.1037/0021-9010.88.5.879

Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of management journal*, *53*(3), 617-635. doi:10.5465/AMJ.2010.51468988

Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology*, *99*(4), 761-774. http://dx.doi.org/10.1037/0022-0663.99.4.761

Rudow, B. (1999). Stress and burnout in the teaching profession: European studies, issues, and research perspectives. In A. M. Huberman, & R. Vandenberghe (Eds.), *Understanding and preventing teacher burnout: A sourcebook of international research and practice* (pp. 38-58). Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511527784.004

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of organizational Behavior*, *25*(3), 293-315. doi: 10.1002/job.248

Schaufeli, W. B., & Bakker, A. B. (2010). Defining and measuring work engagement: Bringing clarity to the concept. *Work engagement: A handbook of essential theory and research*, 10-24. New York: Psychology Press.

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and psychological measurement*, *66*(4), 701–716. doi: 10.1177/0013164405282471

Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior*, *30*(7), 893-917. doi: 10.1002/job.595

Schaufeli, W., & Salanova, M. (2011). Work engagement: On how to better catch a slippery concept. *European Journal of Work and Organizational Psychology*, *20*(1), 39-46. doi:10.1080/1359432X.2010.515981

Schaufeli, W. B., Salanova, M., González-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, *3*(1), 71–92. doi:10.1023/A:1015630930326

Shumaker, S.A., & Brownell, A. (1984). Toward a theory of social support: Closing conceptual gaps. *Journal of Social Issues, 40*(1), 1-36. doi: 10.1111/j.1540-4560.1984.tb01105.x

Slemp, G. R., & Vella-Brodrick, D. A. (2014). Optimising employee mental health: The relationship between intrinsic need satisfaction, job crafting, and employee well-being. *Journal of Happiness Studies*, *15*(4), 957-977. doi: 10.1007/s10902-013-9458-3

Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between nonwork and work. *Journal of Applied Psychology, 88*(3), 518–528. doi:10.1037/0021-9010.88.3.518

Speier, C., & Frese, M. (1997). Generalized self efficacy as a mediator and moderator between control and complexity at work and personal initiative: A longitudinal field study in East Germany. *Human Performance, 10*(2), 171-192. doi: 10.1207/s15327043hup1002_7

Stajkovic, A. D., & Luthans, F. (1998). Social cognitive theory and self-efficacy: Goin beyond traditional motivational and behavioral approaches. *Organizational dynamics*, *26*(4), 62-74. doi:10.1016/S0090-16(98)90006-7

Stamos. (2016). Retrieved from http://stamos.nl/downloads/Factsheet_werkgelegenheid_onderwijs_naar_geslacht02122011.pdf

Sweetman, D., & Luthans, F. (2010). The power of positive psychology: Psychological capital and work engagement. In A. B. Bakker, & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 54-68). Hove, East Sussex: Psychology Press.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA Journal of Industrial Psychology*, *36*(2), 1-9. http://dx.doi.org/10.4102/sajip.v36i2.841

Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of Vocational Behavior*, *80*(1), 173–186. doi:10.1016/j.jvb.2011.05.009

Tims, M., Bakker, A. B., & Derks, D. (2013). The impact of job crafting on job demands, job resources, and well-being. *Journal of occupational health psychology*, *18*(2), 230 - 240. doi: 10.1037/a0032141

Van den Broeck, A., Vansteenkiste, M., De Witte, H., & Lens, W. (2008). Explaining the relationships between job characteristics, burnout, and engagement: The role of basic psychological need satisfaction. *Work & Stress*, *22*(3), 277-294. doi:10.1080/02678370802393672

Van Yperen, N. W., & Snijders, T. A. (2000). A multilevel analysis of the demands–control model: Is stress at work determined by factors at the group level or the individual level?. *Journal of occupational health psychology*, *5*(1), 182-190. http://dx.doi.org/10.1037/1076-8998.5.1.182

Van Veldhoven, M. V., & Broersen, J. P. J. (1999). *Psychosociale arbeidsbelasting en werkstress in Nederland*. Amsterdam: SKB.

Van Veldhoven, M., & Meijman, T. (2008). *Het meten van psychosociale arbeidsbelasting met een vragenlijst: De Vragenlijst Beleving en Beoordeling van de Arbeid (VBBA).* Amsterdam: Nederlands Instituut voor Arbeidsomstandigheden (NIA)

Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: revisioning employees as active crafters of their work. *Academy of Management Review, 26*(2), 179–201. doi:10.5465/AMR.2001.4378011

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International journal of stress management*, *14*(2), 121-141. http://dx.doi.org/10.1037/1072-5245.14.2.121

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W.B. (2009). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of Organizational and Occupational Psychology*, *82*(1), 183-200. doi:10.1348/096317908X285633

Xanthopoulou, D., Bakker, A. B., & Fischbach, A. (2013). Work engagement among employees facing emotional demands. *Journal of Personnel Psychology*,*12*(2), 74-84. doi: 10.1027/1866-5888/a000085

Appendix A - Information letter

Beste docent(e),

Leuk dat u wilt deelnemen aan ons afstudeeronderzoek! In het kader van onze Master Human Resource Studies aan de Universiteit van Tilburg doen wij onderzoek naar het welbevinden van docenten en hun prestaties op het werk.

Aanleiding voor het onderzoek
Voor de meeste mensen geldt dat zij een (groot) deel van hun leven besteden aan werk. Het werk kan een bron van inspiratie zijn, maar ook een bron van stress. In ons onderzoek gaan wij onderzoeken hoe docenten in het onderwijs hun werk ervaren en beleven. Hierbij zijn wij geïnteresseerd in welke aspecten van de werkomgeving belangrijk zijn en wat hiervan de gevolgen zijn voor het welbevinden van docenten op het werk.

De vragenlijst
De vragenlijst bestaat uit 6 onderdelen die vragen bevatten over verschillende werkgerelateerde factoren waarmee wij informatie willen verzamelen over uw ervaringen, belevingen, gedragingen en gevoelens op het werk. Het invullen van deze vragenlijst duurt ongeveer 15 tot 20 minuten. De data wordt slechts verzameld voor ons wetenschappelijke onderzoek. We willen extra benadrukken dat deelname aan het onderzoek anoniem is en de antwoorden vertrouwelijk behandeld worden. De desbetreffende resultaten worden niet gedeeld met uw leidinggevende en organisatie.

Instructie invullen vragenlijst

- Neem de tijd om de vragenlijst zorgvuldig in te vullen; uw antwoorden zijn erg waardevol voor ons onderzoek.
- Lees per onderdeel de bijbehorende instructie goed door.
- Kruis het antwoord aan dat als eerste bij u op komt en het meest op u van toepassing is.
- Wij raden u aan de vragenlijst vanaf de computer, laptop, iPad of tablet in te vullen en niet vanaf uw telefoon.

Onderstaande link verwijst u door naar de digitale vragenlijst:
…

Alvast hartelijk dank voor uw medewerking aan het onderzoek!

Met vriendelijke groet,

Rozemarijn Bruinhof, Carlijn Nohlmans, Julie Thomassen en Jeske van Beurden (PhD student/docent universiteit van Tilburg)

Voor vragen kunt u contact met ons opnemen:
Rozemarijn Bruinhof
Carlijn Nohlmans
Julie Thomassen
Jeske van Beurden

Appendix B – Questionnaire 'Werken in het onderwijs'

Only the questions from the questionnaire that were used in this study are presented below.

De volgende vragen gaan over uw werksituatie. Geef a.u.b. aan hoe vaak de stelling op u van toepassing is. Bij iedere vraag is één antwoord mogelijk.

Nooit (1) – Soms (2) – Vaak (3) – Altijd (4)

		1	**2**	**3**	**4**
1.	Kunt u op uw collega's rekenen wanneer u het in uw werk wat moeilijk krijgt?	☐	☐	☐	☐
2.	Kunt u als dat nodig is uw collega's om hulp vragen?	☐	☐	☐	☐
3.	Is uw verstandhouding met uw collega's goed?	☐	☐	☐	☐
4.	Heeft u conflicten met uw collega's?	☐	☐	☐	☐
5.	Heerst er tussen u en uw collega's een prettige sfeer?	☐	☐	☐	☐
6.	Doen zich tussen u en uw collega's vervelende gebeurtenissen voor?	☐	☐	☐	☐
7.	Heeft u te veel werk te doen?	☐	☐	☐	☐
8.	Moet u extra hard werken om iets af te krijgen?	☐	☐	☐	☐
9.	Moet u zich haasten?	☐	☐	☐	☐
10.	Heeft u te maken met een achterstand in uw werkzaamheden?	☐	☐	☐	☐
11.	Heeft u problemen met het werktempo?	☐	☐	☐	☐
12.	Heeft u problemen met de werkdruk?	☐	☐	☐	☐

De volgende vragen gaan over hoe u uw werkt ervaart en beleeft. Geef a.u.b. aan hoe vaak de stelling op u van toepassing is. Bij iedere vraag is één antwoord mogelijk.

Nooit(0) - Sporadisch(1) - Af en toe(2) - Regelmatig(3) - Dikwijls(4) - Zeer dikwijls(5) - Altijd(6)

(Een paar keer per jaar of minder) (Eens per maand of minder) (Een paar keer per maand) (Eens per week) (Een paar keer per week) (Dagelijks)

		0	**1**	**2**	**3**	**4**	**5**	**6**
13.	Als ik 's morgens opsta, heb ik zin om aan het werk te gaan.	☐	☐	☐	☐	☐	☐	☐
14.	Op mijn werk zet ik altijd door, ook als het tegenzit.	☐	☐	☐	☐	☐	☐	☐

15.	Als ik werk, voel ik me fit en sterk.	☐	☐	☐	☐	☐	☐	☐
16.	Ik ben enthousiast over mijn baan.	☐	☐	☐	☐	☐	☐	☐
17.	Ik ben trots op het werk dat ik doe.	☐	☐	☐	☐	☐	☐	☐
18.	Ik vind het werk dat ik doe nuttig en zinvol.	☐	☐	☐	☐	☐	☐	☐
19.	Als ik aan het werk ben, dan vliegt de tijd voorbij.	☐	☐	☐	☐	☐	☐	☐
20.	Ik kan me moeilijk van mijn werk losmaken.	☐	☐	☐	☐	☐	☐	☐
21.	Ik ga helemaal op in mijn werk.	☐	☐	☐	☐	☐	☐	☐

De volgende vragen gaan over hoe u omgaat met uw werk. Geef a.u.b. aan hoe vaak de stelling op u van toepassing is. Bij iedere vraag is één antwoord mogelijk.

Nooit (1) – Soms (2) – Regelmatig (3) – Vaak (4) – Altijd (5)

		1	**2**	**3**	**4**	**5**
22.	Ik vraag collega's om advies.	☐	☐	☐	☐	☐
23.	Ik vraag of mijn leidinggevende tevreden is over mijn werk.	☐	☐	☐	☐	☐
24.	Ik vraag anderen om feedback over mijn functioneren.	☐	☐	☐	☐	☐
25.	Ik zoek inspiratie bij mijn leidinggevende.	☐	☐	☐	☐	☐
26.	Ik vraag mijn leidinggevende om mij te coachen.	☐	☐	☐	☐	☐
27.	Als er nieuwe ontwikkelingen zijn, sta ik vooraan om ze te horen en uit te proberen.	☐	☐	☐	☐	☐
28.	Ik neem geregeld extra taken op me hoewel ik daar geen extra salaris voor ontvang.	☐	☐	☐	☐	☐
29.	Als het rustig is op mijn werk, zie ik dat als een kans om nieuwe projecten op te starten.	☐	☐	☐	☐	☐
30.	Ik probeer mijn werk wat zwaarder te maken door de onderliggende verbanden van mijn werkzaamheden in kaart te brengen.	☐	☐	☐	☐	☐
31.	Als er een interessant project voorbijkomt, bied ik mezelf proactief aan als projectmedewerker.	☐	☐	☐	☐	☐

De volgende vragen gaan over hoe u zich op dit moment voelt. Geef a.u.b. aan in welke mate u het eens of oneens bent met de stelling. Bij iedere vraag is één antwoord mogelijk.

Helemaal oneens (1) – Oneens (2) – Neutraal (3) – Eens (4) – Helemaal eens (5)

		1	**2**	**3**	**4**	**5**
32.	Als ik een moeilijke taak ga doen, ben ik er zeker van dat ik die zal voltooien.	☐	☐	☐	☐	☐
33.	Ik ben in staat om uitdagingen met succes aan te gaan.	☐	☐	☐	☐	☐
34.	Ik heb er vertrouwen in dat ik in veel verschillende taken effectief kan presteren.	☐	☐	☐	☐	☐
35.	Zelfs als dingen tegen zitten, kan ik vrij goed presteren.	☐	☐	☐	☐	☐

Algemene informatie

36. Wat is uw geslacht ☐ Man ☐ Vrouw

37. Heeft u kinderen?

    - ○ Ja
    - ○ Nee

38. Wat zijn uw gemiddelde werkuren per week? …… uur

Bedankt voor uw medewerking! Heeft u interesse in de resultaten van dit onderzoek, dan kunt u hieronder uw e-mailadres achterlaten:

…….

Appendix C - Flyer

Appendix D – Demographic Characteristics

Table 1

Demographic characteristics

		N	Mean (%)	Standard Deviation	Range
Total group		197			
Gender					
	Male	47	23.9%		
	Female	150	76.1%		
Age (in years)		197	41.28	13.743	21 – 75
Marital status					
	Single	45	22.8%		
	Married/living together	145	73.6%		
	Divorced	7	3.6%		
Having children					
	Yes	112	56.9%		
	No	85	43.1%		
Educational institution					
	Elementary school	77	39.1%		
	Secondary school	84	42.6%		
	Special need elementary school	28	14.2%		
	Special need secondary school	8	4.1%		
Job tenure (in years)		197	15.58	12.426	1 – 51
Employee contract					
	Open-ended contract	144	73.1%		
	Fixed-term contract	33	16.8%		
	Zero hour contract	8	4.1%		
	Differently	12	6.1%		
Contract hours		196	28.90	10.823	0 – 44
Working hours (a week)		191	36.26	9.554	5 – 60

Appendix E – Output factor analyses and reliability analyses

Crafting challenging job demands

Table 2

Factor analysis crafting challenging job demands

Total variance explained			
Component	**Total**	**% of the variance**	**Cumulative %**
1	3.122	62.448	62.448
2	.661	13.226	75.673
3	.491	9.823	85.496
4	.440	8.795	94.291
5	.285	5.709	100.000

Extraction Method: Principal Component Analysis

Table 3

Screeplot crafting challenging job demands

Table 4

Reliability crafting challenging job demands

Reliability statistics		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of items**
.848	.848	5

Crafting social job resources

Table 5

Factor analysis crafting social job resources

Total variance explained			
Component	**Total**	**% of the variance**	**Cumulative %**
1	2.888	57.764	57.764
2	.893	17.862	75.625
3	.569	11.377	87.003
4	.339	6.782	93.785
5	.311	6.215	100.000

Extraction Method: Principal Component Analysis

Table 6

Screeplot crafting social job resources

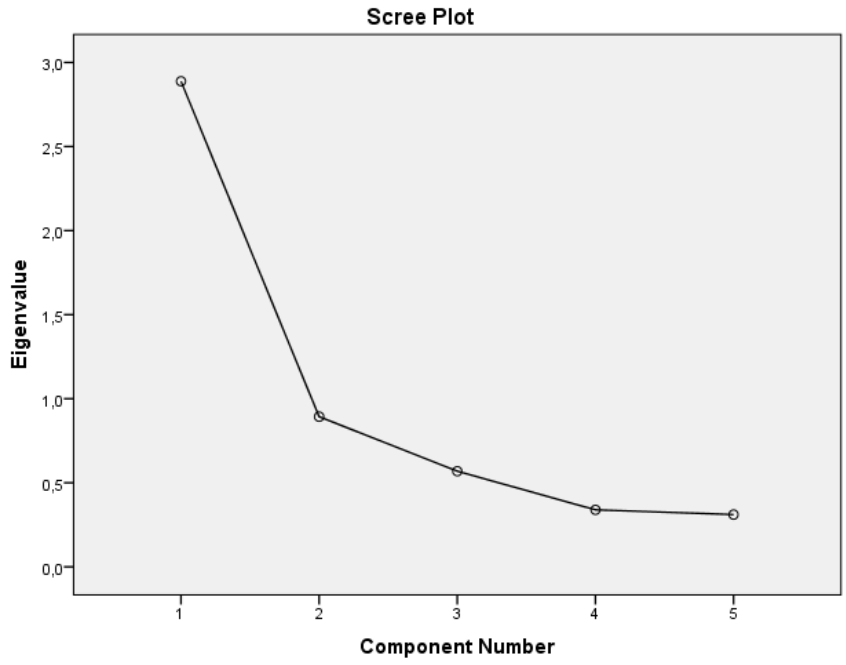


Table 7

Reliability crafting social job resources

Reliability statistics		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of items**
.815	.814	5

Workload

Table 8

Factor analysis workload

Total variance explained			
Component	**Total**	**% of the variance**	**Cumulative %**
1	3.730	62.164	62.164
2	.801	13.346	75.510
3	.440	7.333	82.842
4	.398	6.634	89.476
5	.373	6.212	95.688
6	.259	4.312	100.000

Extraction Method: Principal Component Analysis

Table 9

Screeplot workload

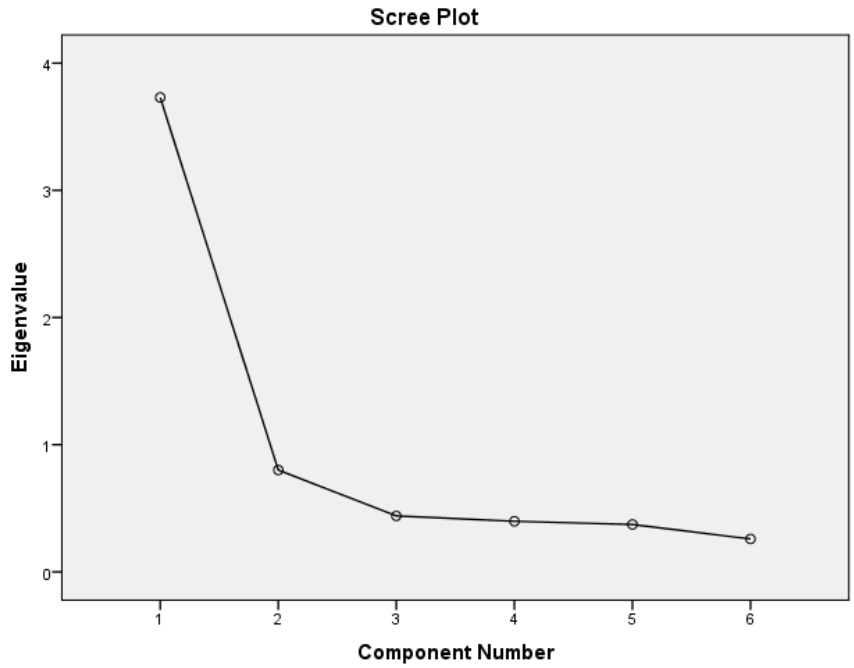


Table 10

Reliability workload

Reliability statistics		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of items**
.877	.878	6

Colleague support

Table 11

Factor analysis colleague support

Total variance explained			
Component	**Total**	**% of the variance**	**Cumulative %**
1	2.791	46.515	46.515
2	1.153	19.208	65.723
3	.713	11.890	77.613
4	.602	10.034	87.647
5	.473	7.889	95.536
6	.268	100.000	100.000

Extraction Method: Principal Component Analysis

Table 12

Screeplot colleague support

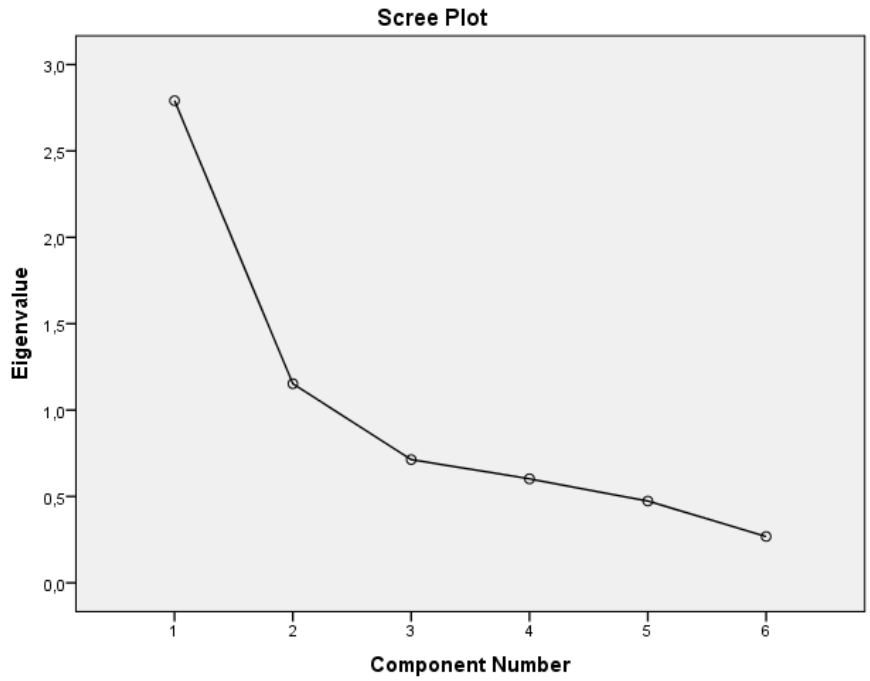


Table 13

Reliability colleague support

Reliability statistics		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of items**
.761	.759	6

Work engagement

Table 14

Screeplot work engagement with 9 items

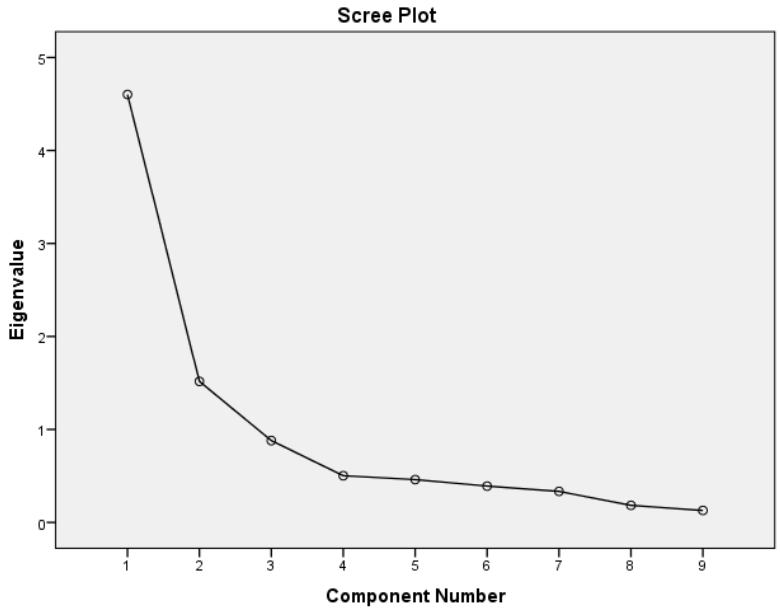


Table 15

Component Matrix Work Engagement

	Component 1
Ik ben enthousiast over mijn baan.	.886
Ik ben trots op het werk dat ik doe	.840
Ik vind het werk dat ik doe nuttig en zinvol	.839
Als ik werk, voel ik me fit en sterk.	.820
Als ik ’s morgens opsta, heb ik zin om aan het werk te gaan.	.791
Als ik aan het werk ben, dan vliegt de tijd voorbij.	.784
Op mijn werk zet ik altijd door, ook als het tegenzit.	.597
Ik ga helemaal op in mijn werk	.369
Ik kan me moeilijk van mijn werk losmaken	-

Extraction Method: Principal Component Analysis.[a]
a. 1 components extracted.

Table 16

Factor analysis work engagement

Total variance explained			
Component	**Total**	**% of the variance**	**Cumulative %**
1	4.602	57.525	57.525
2	.961	12.008	69.533
3	.874	10.920	80.453
4	.501	6.267	86.720
5	.411	5.138	91.858
6	.334	4.175	96.033
7	.184	2.305	98.338
8	.133	1.662	100.000

Extraction Method: Principal Component Analysis

Table 17

Screeplot work engagement if item deleted (8 items)

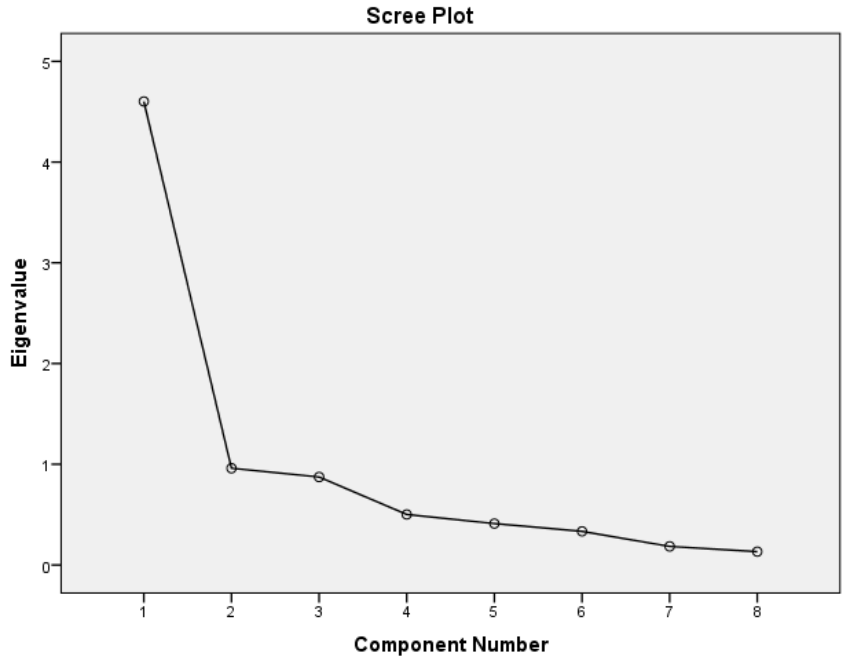


Table 19

Reliability work engagement if item deleted (8 items)

Reliability statistics		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of items**
.875	.885	8

Self-efficacy

Table 19

Factor analysis self-efficacy

Total variance explained			
Component	**Total**	**% of the variance**	**Cumulative %**
1	2.558	63.949	63.949
2	.649	16.225	80.174
3	.486	12.138	92.312
4	.308	7.688	100.000

Extraction Method: Principal Component Analysis

Table 20

Screeplot self-efficacy

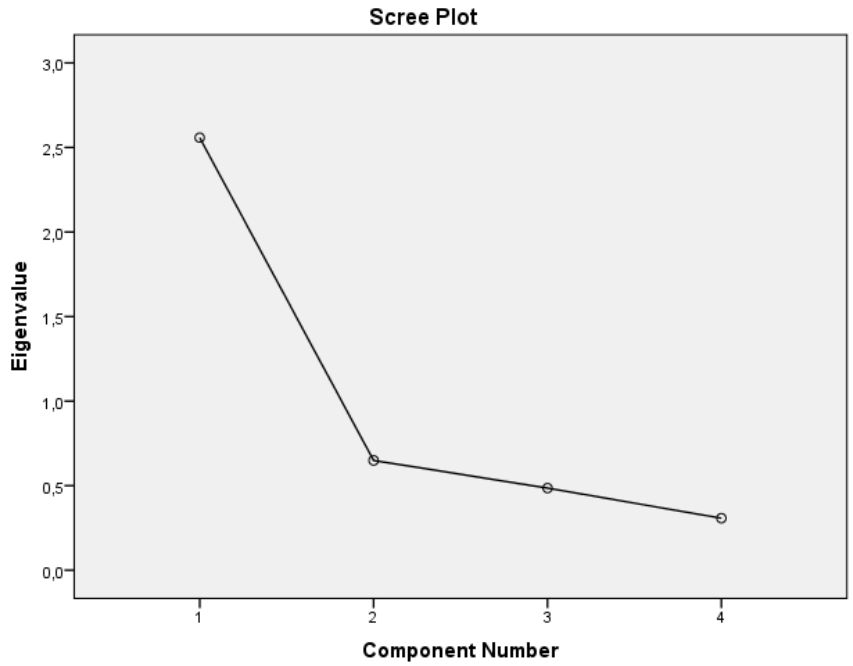


Table 21

Reliability self-efficacy

Reliability statistics		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of items**
.797	.809	4

Appendix F – Pattern matrix Job Crafting

Table 22

Pattern matrix crafting challenging job demands and crafting social job resources

	Component	
	1	2
75. Als er een interessant project voorbijkomt, bied ik mezelf proactief aan als projectmedewerker.	.889	
73. Als het rustig is op mijn werk, zie ik dat als een kans om nieuwe projecten op te starten.	.838	
72. Ik neem geregeld extra taken op me hoewel ik daar geen extra salaris voor ontvang.	.797	
71. Als er nieuwe ontwikkelingen zijn, sta ik vooraan om ze te horen en uit te proberen.	.714	
74. Ik probeer mijn werk wat zwaarder te maken door de onderliggende verbanden van mijn werkzaamheden in kaart te brengen.	.672	
67. Ik vraag of mijn leidinggevende tevreden is over mijn werk.		.828
70. Ik vraag mijn leidinggevende om mij te coachen.		.808
68. Ik vraag anderen om feedback over mijn functioneren.		.759
69. Ik zoek inspiratie bij mijn leidinggevende.		.723
66. Ik vraag collega's om advies.		.628

Extraction Method: Principal Component Analysis
Rotation Method: Oblimin with Kaiser Normalization
a. Rotation converged in 5 iterations
Component 1: Crafting challenging job demands
Component 2: Crafting social job resources

Appendix G – Sobel tests

Table 23

Sobel test Hypothesis 4

	Input	Test statistic (Z)	Std. Error	*p*-value
A	.111	2.00677184	0.02527791	0.04477396
B	.457			
Sa	.044			
Sb	.138			

Table 24

Sobel test Hypothesis 7

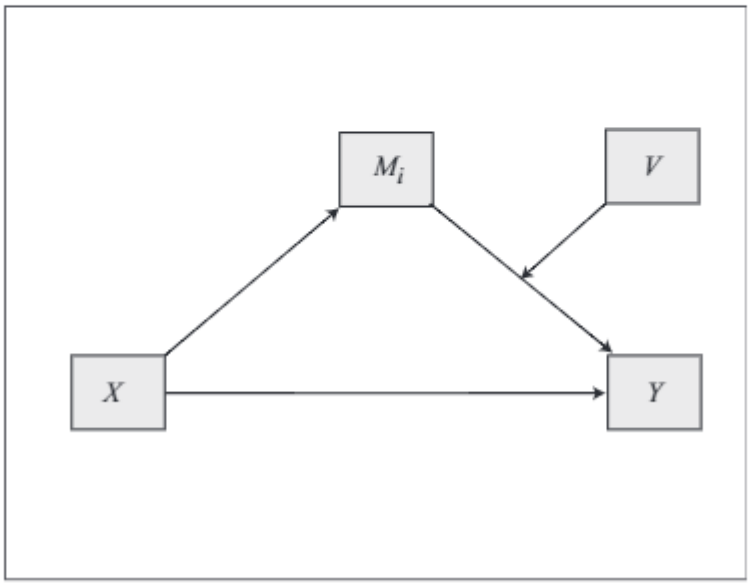
	Input	Test statistic (Z)	Std. Error	*p*-value
a	.033	-0.22360132	0.00339443	0.82306754
b	-0.023			
Sa	.053			
Sb	.096			

Appendix H – Hayes Template Model 14

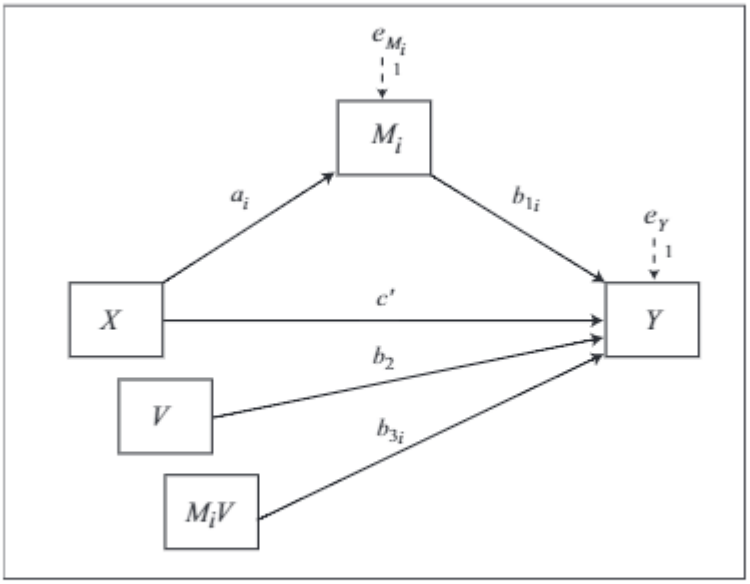
Model Templates for PROCESS for SPSS and SAS

Model 14

Conceptual Diagram



Statistical Diagram



Conditional indirect effect of X on Y through $M_i = a_i (b_{1i} + b_{3i}V)$

Direct effect of X on $Y = c'$

Note: Model 14 allows up to 10 mediators operating in parallel.