To which extent does Job crafting mediate or (negatively or positively) moderate the relationship between Human Resource Management and Work engagement?

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1. INTRODUCTION

Work engagement is a positive, fulfilling work-related state of mind. Engaged employees are able to handle the demands of their jobs, have an effective connection with their work activities and feel energetic about their job (Schaufeli, Salanova, Gonzalez-Romá, & Bakker, 2002). Alfes, Shantz, Truss, and Soane (2013) call engagement the mechanism that is responsible for the relationship between Human Resource practices and individual behavior.

The performance of engaged employees is higher, and according to Bakker and Demerouti (2008) that is because of positive emotions of employees and the ability to create their own resources. Positive emotions and attitudes towards work lead to a more productive behavior, since they cause employees to be more confident, optimistic and sensitive to opportunities at work. Engaged employees are able to mobilize their own resources, since they have a higher level of self-efficacy, autonomy and seize learning opportunities. They create their own positive feedback and success, raising their performance (Bakker & Demerouti, 2008).

Keeping employees engaged is also likely to decrease absenteeism and turn-over numbers (Grawitch, Gottschalk, & Munz, 2006; Schaufeli, Bakker, & Van Rhenen, 2009). Absenteeism is the non attendance at work. It can be voluntary or involuntary, where the first one is a consequence of a lack of motivation, and the latter one is a consequence of sickness (Schaufeli et al., 2009). According to Schaufeli and Salanova (2007) employees who are more engaged have better health, both mental as psychosomatic. Less headaches, stomach aches and cardiovascular problems occur, since higher engagement helps cope with job demands. This lowers health risks like stress, and reduces the amount of people who use absenteeism as a coping mechanism to deal with stressful job demands (Schaufeli & Bakker, 2004). The drive to withdraw from aversive work circumstances is lowered, since enjoyment and satisfaction are increased, decreasing absenteeism numbers (Schaufeli et al., 2009). This means it is desirable to keep the Work engagement of employees high.

1.1 THE PROBLEM AND RESEARCH QUESTION

In the literature there are at least two stakeholders who are considered to influence the Work engagement of employees; the employer and the employees themselves. This means that in order to measure the influence both these groups can have, we need concepts to make the influences operational.

For the influence the employer has, we use Human Resource Management (HRM). HRM is the way organizations use practices, structures and policies to manage employees. The impact of HRM can be seen in changes in behavior and attitudes of employees (Boselie, Dietz, & Boon, 2005). We choose HRM because the relation between HRM and Work engagement has already been researched, and has proven to be positive (Alfes et al., 2013; Bal, Kooij, & De Jong, 2013). Hakanen, Schaufeli, and Ahola (2008) say engagement and employee health is a company issue, rather than a private issue, and thus the responsibility of the employer. According to them HRM efforts are necessary to motivate and promote the optimal functioning of employees. So the employer is responsible for stimulating Work engagement. Salanova, Agut, and Peiró (2005) tell us that providing employees with organizational resources through

HR practices such as training or performance appraisals, causes an increase in their Work engagement, because obstacles are removed, and a better work climate is achieved.

In order to examine the impact employees can have on their own Work engagement, researchers have examined the role of employees' Job crafting efforts. Job crafting is a way for employees to actively customize their jobs by utilizing opportunities to change their tasks or their interactions with other people at work. The idea is not to make major changes to the job itself, but to shape it so that it better fits the abilities, needs and preferences of the employee (Berg, Dutton, & Wrzesniewski, 2008). So the employee pro-actively tries to increase his own Work engagement. We use Job crafting since it has a proven positive relationship with Work engagement. Berg et al. (2008) find that Job crafting helps employees get satisfaction, meaning and enjoyment out of work, helps them perform and cope better, enhances their work identities and therefore raises their Work engagement. Bakker, Tims, and Derks (2012) also find a positive relationship between Job crafting and Work engagement. They say an increase in job resources and an increase in challenging job demands will relate to an increase in Work engagement. These increases can be achieved through Job crafting.

However, what we do not know is how both concepts relate to each other if both are used simultaneously to influence Work engagement. The reason for this lack of knowledge stems from the fact that both concepts originate from different literature streams. Where HRM has a strategic background, Job crafting finds its roots in psychology. The strategic literature stream is focused on resources, the organization and planning, while psychology is focused on people and their well-being. The result of this difference in origins is that both concepts have not yet been researched together. But this gap in knowledge is interesting, since one can think of different scenario's in which these concepts operate together.

One might argue that Job crafting is part of HRM, and falls under job design. So why approach them as entirely different concepts? In the article of Grant and Parker (2009) we see that they find three conceptual frameworks that describe how employees and supervisors modify jobs, tasks and roles. Job crafting is one of these frameworks (with role adjustment and role negotiation being the other frameworks). While they do categorize Job crafting as an aspect or part of work design (and by extent HRM) in their article, we also find the reason for the distinction we make here. Where Job crafting is a proactive, bottom-up approach, HRM is more top-down oriented (Grant & Parker, 2009). Seeing as HRM is performed by the organization, or higher management, and Job crafting is performed by the employees themselves, there is a differentiation between HR/managerial practices and employees Job crafting. We therefore say that these concepts can be seen as separate concepts. Even though the concepts are likely to influence each other, the executors or initiators of these practices are different, and so we research them as separate concepts in this paper.

It is possible that HRM has no direct, positive influence on Work engagement, and in order for HRM to be effective, the resources it provides need to be picked up and utilized. One way of utilizing these resources is Job crafting, since Job crafting is all about changing, adjusting and using resources. So that would mean that there is a mediator effect.
Or maybe a moderator effect is more likely, where HRM has an influence on the relation between Job crafting and Work engagement. That influence could be beneficial or detrimental. HRM can strengthen

the positive relationship between Job crafting and Work engagement by providing the tools, space and means for employees to make Job crafting more effective, or even possible. That would mean there is a synergy effect between Job crafting and HRM. But HRM could also weaken Job crafting when there is a substitution effect. A substitution effect would mean that when there already is a lot of HRM, Job crafting would not be as necessary, because HRM already provides a better fit between employees and their resources and demands, rendering Job crafting obsolete. This would cause the positive relation between Job crafting and Work engagement to weaken.

This means that the value of this research lies in the combined study of these two concepts, and their combined influence on Work engagement. Knowing how to effectively use both these concepts together is important, since it is important to keep employees engaged. Engaged employees are active, take initiative and generate positive feedback. They are active in activities outside of work, and their values match the values of the organization they work for. Work is experienced as a fun activity. This means that the quality of the core work responsibilities of engaged employees is higher (Bakker & Leiter, 2010; Schaufeli & Bakker, 2003).

So we know positive relationships exist between Work engagement and HRM (Alfes et al., 2013; Schaufeli & Salanova, 2007), and a positive relationship exists between Work engagement and Job crafting(Bakker et al., 2012). HRM is a way for the employee to stimulate Work engagement, whereas in Job crafting the employee has to be pro-active in heightening their own Work engagement. But as mentioned before, the different origins of these concepts caused a gap in knowledge since their combined influence has not yet been researched. We do not know in what way HRM and Job crafting interact with each other, or the influence they have on Work engagement when both are used simultaneously. This problem leads to the following research question;

To which extent does Job crafting mediate or (negatively or positively) moderate the relationship between HRM and Work engagement?

2. THEORETICAL FRAMEWORK

2.1 WORK ENGAGEMENT

Work engagement is "a positive, fulfilling, affective-motivational state of work-related well-being... employees have high levels of energy, and are enthusiastically involved in their work" (Bakker & Leiter, 2010, pp. 1-2). According to Schaufeli and Salanova (2007) "Work engagement is positively associated ... with mental and psychosomatic health, intrinsic motivation, efficacy beliefs, positive attitudes towards work and the organization, and high performance" (as cited in Seppälä et al., 2009, p. 460). We use Work engagement because it specifically refers to the relationship between an employee and his work, whereas employee engagement is broader and can also refer to the relationship between an employee and the entire organization (Bakker & Leiter, 2010).Work engagement is relatively stable compared to other work-related emotions, because "rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior" (Schaufeli et al., 2002, p. 74).

By using employee Work engagement in this study, we take the viewpoint of positive psychology and positive organizational behavior which argue that "... positively oriented human resource strengths and psychological capacities ... can be measured, developed, and effectively managed for performance improvement in today's workplace" (Luthans, 2002, p. 698). The positive approach shifts the focus to strengths and optimal functioning, instead of focusing on weaknesses and malfunctioning (Schaufeli & Bakker, 2004). This means that research of Work engagement emerged from research of its antipode, job burnout.

Job burnout is a "prolonged response to chronic emotional and interpersonal stressors on the job" (Maslach, Schaufeli, & Leiter, 2001, p. 397). It is a state of mental fatigue. Maslach et al. (2001) use three core dimensions to further define burnout; exhaustion, cynicism and inefficacy. Exhaustion is the dimensions that people most associate with burnout, because it is the most obvious manifestation. It is the depletion of energy, measures fatigue and reflects the dimension of stress. Exhaustion alone, however, is not enough to cover the concept of burnout as a whole. It gives no further information about the relationship people have with their work. That is where the second dimension, cynicism comes in. Cynicism is the depersonalization and indifference used by people to distance themselves from their work. It is an immediate reaction to exhaustion since it is an effort to save energy. Lastly there is the dimension inefficacy or reduced professional efficacy. This dimension includes both social and non-social aspects. In this dimension one's sense of effectiveness and personal accomplishment disintegrates. This is because it is difficult to get satisfaction out of work to which you feel indifferent, or to feel accomplished when you are exhausted (Maslach et al., 2001; Schaufeli & Bakker, 2004). Together these three dimensions form burnout, since they together cover the concept as a whole. They describe the current mental state of the employee, the way he feels towards work, and the way he handles job demands.

Schaufeli and Bakker (2004) state that burnout can be seen as an erosion of engagement. When that happens "energy turns into exhaustion, involvement turns into cynicism and efficacy turns into ineffectiveness" (Maslach & Leiter, 1997, p. 24). Work engagement can be divided into 3 core

dimensions, just as its counterpart burnout. Where burnout is defined by the dimensions exhaustion, cynicism and inefficacy, Work engagement is characterized by vigor, dedication, and absorption (Schaufeli & Bakker, 2003).

2.1.1 Vigor

The first dimension is vigor. Vigor is defined as being energized and willing to put effort towards work. It is the direct opposite of exhaustion. So where exhaustion is the depletion of energy and tiredness, vigor encompasses high levels of energy and mental resilience. Employees who score high on vigor bring an energy to work that they enthusiastically apply to their job (Bakker & Leiter, 2010; Schaufeli & Bakker, 2003; Seppälä et al., 2009).

2.1.2 Dedication

Dedication stands for enthusiasm, feeling inspired by your work and feeling your work has significance. Dedicated employees strongly identify with their work. The antipode of dedication is cynicism. Cynicism is the detachment of one's work, where employees become indifferent and are no longer willing to invest energy. So where cynicism is the loss of interest, dedication is feeling challenged and inspired by it and feeling like your job matters (Bakker & Leiter, 2010; Schaufeli & Bakker, 2003; Seppälä et al., 2009).

Here we also see job resources returning as an important factor, since "work environments that offer many resources foster the willingness to dedicate one's efforts and abilities to the work task" (Schaufeli & Bakker, 2004, p. 298). So offering good and sufficient resources will help in raising the dedication of employees.

Vigor and dedication might seem similar because they are closely related and often go hand in hand. Employees are willing to invest the energy from vigor, because they feel their work deserves that kind of energy and therefore do not hold back or reserve energy. Feeling your work is worthy of the energy you invest originates from dedication. The difference between vigor and dedication should be quite clear. Where vigor represents the energy and resilience an employee feels, dedication represents the feeling of significance and effectiveness. Employees justify the amount of energy they invest by feeling their work is worthy of receiving that kind of energy.

2.1.3 Absorption

Lastly there is the dimension of absorption. Absorption is a distinct characteristic of Work engagement, standing for being totally and happily immersed and engrossed in your work. It has no real opposite among the characteristics of burnout and is not the antipode of inefficacy. This is because researchers found that "rather than by efficacy, engagement is particularly characterized by being immersed and happily engrossed in one's work - a state that we have called absorption" (Schaufeli & Bakker, 2003, p. 5). Inefficacy, or effectiveness when phrased positively, seemed to be less prominent.

Absorption causes employees to be strongly involved in their work. Because of their intense involvement, they lose track of time and do not easily respond to distractions. The down-side however, is that when employees get carried away, they forget things around them, and have difficulties detaching themselves from their work (Bakker & Leiter, 2010; Schaufeli & Bakker, 2003; Seppälä et al., 2009).

The difference between absorption and dedication is that dedication describes the state of mind an employee is in, being proud of his job and feeling inspired, whereas absorption describes the 'flow' that an employee enters when he becomes immersed in his work. It is about forgetting things around them, and even having the difficulty of detaching from work. So one is about how an employee feels about his job, whereas the other describes the state the employee enters when working. There also lies the difference between vigor and absorption, since vigor describes the energy the employee feels, and the willingness to invest effort, but not the process of immerging oneself in his work.

2.1.4 MULTIDIMENSIONAL CONCEPT

Together these three dimensions form Work engagement. The three dimensions together can explain the variance found in the concept of Work engagement as a whole. In order for an employee to be truly engaged, all three dimensions need to be present. Vigor, dedication and absorption are all important pieces of Work engagement, and influence each other. Together they form the complete picture that is Work engagement. Vigor stands for how the employee feels about his job, dedication is the state of mind that the employee is in and absorption is the process that happens when an employee feels vigorous and is in a dedicated state of mind.

When employees are engaged, they feel the need to strive towards a challenging goal, and want to succeed. It becomes a personal commitment to attain these goals. Vigor explains the energy that the employee needs to feel in order to complete the goal. Dedication explains the personal commitment and drive towards challenging goals that an employee needs to have, or otherwise put, the state of mind he needs to be in. Lastly, absorption explains the process of an employee getting immersed in his work. It explains why an employee can get satisfaction from working intensely, and how he can get happily absorbed in his work.

The way these dimensions influence each other is the following. We expect an employee who feels absorbed in his work to also be dedicated to his work, since we do not expect someone will lose himself in work he does not feel is interesting or is worth his time. The same goes for vigor, why would someone put energy in something he does not find interesting? Why would someone receive energy from work he does not think is meaningful, he is not proud of or even enthusiastic about? Vigor influences absorption since in order for an employee to get carried away by his work, he needs to be willing to invest the energy, and he needs to be determined to achieve his work goals.

Of course, for employees these dimensions do not exist. Employees do not distinguish between the dimensions in their daily life. But in research the dimensions do help in explaining why employees are engaged in their work. This is why it helps to look at the three dimensions both separately and at the concept of Work engagement as a whole. The three dimensions together are needed to form a complete picture of the concept of Work engagement.

When we look at factor analyses that have been done, we see that there are high correlations between the three dimensions (Schaufeli, Bakker, & Salanova, 2006). Seppälä et al. (2009) report on several studies finding correlations between 0.60 and 0.99, showing the three factors of Work engagement are highly interrelated. This means that even though the concept consists of three different dimensions, it is allowed to collapse those factors into one factor (Schaufeli & Bakker, 2003). That is why in our analysis

we measure Work engagement as the multidimensional concept, since we are interested in Work engagement of employees as a whole, and not the separate effect of every separate dimension.

2.1.5 JOB DEMANDS AND JOB RESOURCES

Two concepts we mentioned in passing and that are important to improve engagement, are job resources and job demands.

Job demands are "all aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills" (Tims, Bakker, & Derks, 2012, p. 174).

Exhaustion and cynicism emerge from the inability of employees to handle job demands, where inefficacy emerges from a lack of relevant resources (Maslach et al., 2001). When job demands are too high, it drains the energy of employees. This exhaustion in turn will result in the mental withdrawal of the employee, who uses depersonalization to handle the lack of energy while attempting to continue to cope with the high demands (Schaufeli & Bakker, 2004). Inefficacy is a function caused by the former two dimensions. When there are not enough resources to handle the exhaustion, to support the employee or to lessen the cynicism, the sense of effectiveness an employee has can disappear (Maslach et al., 2001). This is the process of job demands becoming overwhelming and turning into job stressors.

Job resources are "those aspects of the job that are either/or functional in achieving work goals, reduce job demands and the associated physiological and psychological costs, and stimulate personal growth, learning and development" (Tims et al., 2012, p. 174). As shown in the previous example, job resources are necessary for employees to be able to deal with job demands. But job resources are not just buffers for job demands, they have their own importance and outcomes. Job resources can either be intrinsic motivational through aiding employees in their growth and development, but can also be extrinsic motivational by aiding employees in reaching their work goals (Schaufeli & Bakker, 2004).

Job resources like feedback, task variety and training opportunities give a rise to Work engagement (Alfes et al., 2013). This is because job resources help employees in reaching their work goals, and satisfy their basic needs for, for example information, skills and support, so they can succeed in their work. This results in a positive work-related state of mind, making employees engaged (Schaufeli & Bakker, 2004). As Schaufeli and Bakker say, why leave the organization that provides you with "valued job resources that enhance learning, growth and development"? (Schaufeli & Bakker, 2004, p. 298).

Job demands and resources are negatively related. When there are good job resources, this can reduce job demands (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). According to Bakker et al. (2007) the negative relationship that exists between job demands and Work engagement is weaker when employees have high job resources. The reason for this is that job resources are able to buffer the effect that job demands can have on strain. When employees experience less strain, this will pave the way for Work engagement, since it becomes easier for them to get happily absorbed in their work, and instead of losing energy, they gain energy from their work, making them vigorous. But even though job demands have physiological or mental costs, that does not necessarily mean that job demands are negative. One cannot simple reduce his job demands and increase his job resources, and expect to stay happy, engrossed, challenged and engaged. A certain balance needs to exist between the job demands and job resources. In the article of Grant and Parker (2009) we see that, even though job resources such as

social support can reduce disengagement, job demands are also necessary to facilitate goal achievement and personal growth. Where job resources can enhance the well-being of employees in enabling employees to accomplish goals and objectives (Grant & Parker, 2009), job demands can enhance this effect by enriching these work goals, and giving more meaning to accomplished goals. According to (Karasek & Theorell, 1990), jobs that are high in demands provide a lot of opportunities for learning, which will cause employees to feel like they accomplished something, helping them cope with the strain a job can cause. Employees need to be challenged in order to achieve a feeling of accomplishment. That is why employees, who are engaged and able to deal with job demands, have effective connections with their work and are more energetic (Schaufeli et al., 2006), since this feeling of mastery or accomplishment reduces job strain, allowing employees to further develop themselves and freeing up their capacity to learn (Karasek & Theorell, 1990). A certain amount of control over the demands and resources of a job enables employees to master their tasks and allows them to engage in problem-focused coping (Grant & Parker, 2009). This means that a certain combination and cooperation must exist between job resources and job demands.

So Work engagement consists of vigor, dedication and absorption. Each of these dimensions is influenced by the job resources and demands an employee has. When the job demands get less and job resources improve, Work engagement increases. This is because when job resources buffer job demands, and thereby lower the strain these demands have on the employee, the employee becomes more energized and vigor rises. Dedication increases when the employee has the right resources, and is able to succeed in his work goals because he receives the means to do so. Succeeding in work goals will make an employee more enthusiastic about his job and will motivate the employee. Absorption is stimulated when an employee is both vigorous and dedicated to his job. When an employee receives direction and means to aid him in his work, he knows in which direction he should invest his effort, and he knows that he can achieve what is expected of him. This will cause the employee to get more easily immersed in his work, raising absorption.

As you can see, Work engagement is dependent on job demands and resources. This means that a healthy balance needs to be achieved between those demands and resources. We believe there are two stakeholders who can influence this balance, employees themselves and their employers.

2.2 JOB CRAFTING

One way in which job resources and job demands can be managed in order to increase Work engagement is through Job crafting. Job crafting can be defined as an active change in behavior which is self-initiated by employees and aimed to align their jobs with their interests, preferences and skills (Tims et al., 2012).

According to Tims, Bakker, and Derks (2013), Job crafting is an employee-driven approach through which employees "may be better able to meet ... personal needs and preferences" (Tims et al., 2013, p. 230). It requires a pro-active work behavior from employees. The changes made by job crafters are mostly aimed at improving work motivation and the person-job fit (Tims et al., 2012). Employees modify the cognitive, physical and relational boundaries of their work (Grant & Parker, 2009). This comes down to changing their job's task boundaries, changing how they think about the relationships among their job

tasks and changing their interactions and relationships with others at work (Wrzesniewski & Dutton, 2001). Instead of merely enacting the role that was assigned to them, employees that use Job crafting engage in active efforts to modify and utilize these roles, so that their job fits their values, skills and preferences. Through Job crafting, employees try to proactively improve work methods and processes (Grant & Parker, 2009).

So Job crafting is a behavior that is self initiated by employees. But does that mean that Job crafting is something that has to be consciously done? Is it possible that employees are forming their job to fit their preferences and skills without knowing what Job crafting is? Can Job crafting be done sub-consciously? Some people will not actively pursue Job crafting, but might still increase their challenging demands, because it lies in their character to offer themselves proactively, take on extra tasks or to stay up to date and open to new developments. Another example is someone who asks a lot of coaching and feedback from his supervisor(maybe out of insecurity) and advice from colleagues. So he is working on increasing his social resources, even if he is not aware that he is Job crafting. This leads us to the opinion that people who use Job crafting unknowingly are still Job crafting. Even though they are not aware that they are molding their job, they still receive the benefits of this crafting, since they do collect more resources, they challenge themselves, or they decrease their hindering demands.

Looking at the existing literature, two views about Job crafting exist. Wrzesniewski and Dutton (2001) were among the first to mention Job crafting. They divide Job crafting into three different forms. The first form changes "the job's task boundaries, ... changing the number, scope, or type of job tasks done at work" (Wrzesniewski & Dutton, 2001, p. 185). By changing the tasks prescribed, a different job is created. The second form is changing the relational boundary of the job. By changing the amount of interactions, level of involvement with colleagues at work and the nature of these relationships, a job can change. The third form crafts a job through changing the cognitive task boundaries of the job. A job can be seen as a set of discrete work tasks or as an integrated whole. By changing their view of a job, employees can change how their approach, causing them to engage in different job activities.

In 2012 Tims, Bakker and Derks proposed a different view on Job crafting. They were of the opinion that the threefold of Wrezniewski and Dutton was "limited to those changes that employees may make in their work tasks, relationships at work, and cognitions about work" (Tims et al., 2012, p. 174). Their belief is that there are more job characteristics that can be altered in order to successfully craft a job.

Tims et al. (2012) therefore place their definition in the job demands-resources model (JD-R). The JD-R model is an occupational stress model and comes from the psychology line of research. In the JD-R model two processes are assumed; the energetic process and the motivational process. The energetic process has to do with job demands. Employees either adopt protection strategies against too high demands, costing them more energy, or they lower their performance to deal with the pressure. The motivational process concerns job resources. They can either motivate employees through providing opportunities for growth and development, or they motivate employees by aiding them in achieving their work goals (Schaufeli & Bakker, 2004).
Tims et al. (2012) say Job crafting is "the changes that employees may make to balance their job demands and job resources with their personal abilities and needs" (Tims et al., 2012, p. 174).

In this research we choose to follow framework of Job crafting created by Tims et al. (2012), since we agree with their view that there are more ways to craft jobs than just the activities that fall into the 3 forms defined by Wrzeniewski and Dutton. Examples here can be employees cutting tasks or avoiding unpleasant clients in order to lighten or change their job. While this is mentioned by Wrzesniewski and Dutton (2001), it is not included in their threefold division. Furthermore we find this framework to better fit our other concepts, since Work engagement is dependent on job demands and resources as well. An added advantage is that because of the distinction between job resources and demands, we are able to see which job characteristics are changed when employees craft their jobs (Tims et al., 2012).

The framework of Job crafting by Tims et al. wants to improve the fit between an employee and his job by increasing challenging demands and decreasing hindering demands. They divide Job crafting into four different categories. We discuss each category in order to get a better understanding of the concept of Job crafting as a whole.

2.2.1 INCREASING STRUCTURAL JOB RESOURCES

As mentioned before, job resources are the aspects of the job that help to cope with job demands and the costs that come with those, stimulate development and personal growth, or are functional in reaching work goals (Schaufeli & Bakker, 2004). Increasing job resources can lead to higher levels of Work engagement and can take in the negative effects job demands can have. Job resources can be divided into two separate categories; structural job resources and social job resources.

Structural job resources concern a gain in responsibility and/or job knowledge or skill. The resources here are autonomy and variety of resources for responsibility, and opportunity for development in job knowledge or job skills (Tims et al., 2012).

So when an employee wants to craft structural resources, he can seek out training and classes in order to develop himself more, and gain job knowledge. One could say that it is similar to HR practices in HRM where training is offered. The difference is that when an employee crafts his job, management does not tell him what training to follow, but the employee is pro-active in seeking out specific training himself. By developing oneself in a particular direction, an employee can steer his job in that direction by making himself electable for promotion through specific knowledge. Another way to craft structural resources is through accepting or trying to obtain more autonomy or responsibility in an area.

2.2.2 INCREASING SOCIAL JOB RESOURCES

Social job resources have an impact on the social aspects of a job, and on reaching decent levels of interaction. Resources here are feedback and supervisory coaching for the social aspect, and social support for reaching a satisfactory amount of interaction (Tims et al., 2012).

The difference between structural and social job resources is in the type of resource. Structural job resources have a bigger influence on job design, since they are about gaining knowledge about the job and responsibility, whereas social job resources are about the levels of interaction and the social aspects of a job (Schaufeli & Bakker, 2004).

Ways for an employee to craft his social job resources can be, for example, asking his supervisor for coaching, or asking for feedback from his colleagues. Social interactions with colleagues can be kept to a minimum, or can be expanded, depending on the preferences of the employee.

2.2.3 INCREASING CHALLENGING JOB DEMANDS

Job demands "require sustained effort from employees and are, therefore, associated with certain costs" (Tims et al., 2013, p. 231). Job demands can be divided into two categories; challenging and hindering job demands. While challenging demands require effort in order to fulfill them, they will have a positive effect on employees, since they believe there is growth and personal gain to be achieved from them (Tims et al., 2013). A job needs to be stimulating and challenging in order to avoid boredom and absenteeism. When employees are stimulated to develop themselves, this can lead to high levels of self-efficiency, and an increase in personal growth and job satisfaction. The items used to measure this concept are pro-active behavior, high responsibility and high workload (Tims et al., 2012).

Challenging job demands can be crafted through proactively pursuing new opportunities, and being open to new developments. By pursuing specific opportunities, employees can steer their job in a direction of their choosing. Another way to do this can be through embracing, or declining new technology, and thereby choose the degree to which you challenge yourself.

2.2.4 DECREASING HINDERING JOB DEMANDS

Hindering job demands, on the other hand, should be decreased since they hinder optimal functioning and are perceived as stressful. Hindering job demands can become overwhelming. When exposed to high demands while job resources are low, there is the risk of negative health or negative organizational outcomes. Examples are burnouts and personnel turnover (Tims et al., 2012). Giving employees the space to scale these demands down will reduce the risk of these outcomes.
Job demands can be split into emotional and mental demands. Emotional demands concern working with people, whereas mental demands concern working with knowledge.

Emotional hindering demands can be decreased through managing contact with people or colleagues that have an effect on your emotional state. Employees can choose to avoid or keep contact with those people to a minimum, ensuring they are not too much affected. Mental demands are also craft-able through organizing work in a certain way and minimizing contact with people who have expectations which are too high, or are unrealistic.

2.2.5 MULTIDIMENSIONAL CONCEPT

So Job crafting is a multidimensional concept. This is because all 4 categories of Job crafting are needed to successfully craft a job, and there needs to be a balance between job demands and job resources. Job resources are needed because they aid the employee in performing his job and buffer the (possible) negative effects of job demands. A distinction has been made between social and structural resources because they differ in the sort of resources that they entail. But both categories of resources are needed to explain Job crafting, because both resources are necessary for the employee to function in his job, since they support him in different areas. Furthermore, the resources influence each other or are

sometimes even dependent upon each other. An example here is that in order for a supervisor to trust and allow an employee to have more responsibility, the employee needs the social resources and the therefore appropriate amount of interactions. The other way around one can argue that an employee who has a lot social interactions can easier acquire certain knowledge, since knowledge can easier be shared.

But the job demands are also important when crafting a job. When an employee wants to increase his challenging demands, he has to have access to resources that can support him in being able to meet these demands. This is because in order to successfully handle the job demands that are more challenging, the employee most likely needs to up his skills or knowledge. The way to do this is through increasing his job resources. Increasing job resources also has an influence on hindering demands. When an employee achieves better skills, he is most likely also better in handling job demands. This means that the hindering demands become less, or transform into challenging demands.

Looking at the examples above, and following the research of Tims et al. (2012), where they find that the dimensions are complementary, it is clear that the different dimensions all influence each other and all 4 dimensions are needed in order to get a complete picture. Looking at the JD-R model, the job demands and resources need to be in balance, in order to raise positive outcomes like Work engagement. That is why we cannot simply look at separate dimensions, since the dimensions have an influence on each other, and the balance between them, and therefore job resources and demands, needs to be maintained. This is also reflected in the strong correlation found between all 4 dimensions (seeTims et al., 2012), allowing us to use Job crafting as a multidimensional concept.

2.2.6 LINK TO WORK ENGAGEMENT

Earlier research found a positive relationship between Job crafting and Work engagement. This seems logical, since Work engagement means being satisfied and happy with your work, and Job crafting concerns fitting your job to your own preferences and skills. A good fit between a person and his job would understandably lead to someone who is motivated and enthusiastic about his job.

We see this in the research from Tims et al. (2012), where they shows us that an increase in social and structural job resources and an increase in challenging job demands will lead to an increase in Work engagement. This is because more job resources and more challenging demands will give employees room to use the skills they have, and the opportunity to develop themselves even more. This will lead to higher work enjoyment and an increase in job performance (Tims et al., 2012, 2013). So increasing job resources, fitting job demands to your preferences and being able to handle job demands will lead to an increase in Work engagement.

2.3 HUMAN RESOURCE MANAGEMENT

Apart from the influence that the employee himself can have on his own Work engagement, the organization or employer can also influence the Work engagement of employees. This can be done through Human Resource Management (HRM). HRM can be conceptualized as "carefully designed combinations of such practices geared towards improving organizational effectiveness and hence better

performance outcomes" (Boselie et al., 2005, p. 67). So HRM manages employees through the use of Human Resource (HR) practices.

These HR practices can be bundled into HR systems, which are intended to aid in achieving the objectives of organizations. When we look at the research of Jiang, Lepak, Hu, and Baer (2012) we see that a lot of different HR systems exist. Examples are the high-performance work system, high commitment HR system and the high involvement HR system. While there is no clear consensus on the amount, type or composition of HR practices that should be included in a HR system, there is a strong trend in literature that agrees on the idea that all the different components of HR systems fall into the different categories of the Ability-Motivation-Opportunity (AMO) model (Jiang et al., 2012).

According to this model, HR practices and systems need to attend to the skill requirements and motivations of an employee and to the quality of their jobs, in order to keep the fit with the organizational interests optimal. When employee behavior is in line with the organizational goals, performance should improve. According to Jiang et al. (2012) HR practices intended to enhance employees' knowledge, skills, abilities and motivation will lead to positive HR outcomes (being skills, abilities, attitudes, behavior and turnover), because their competencies contribute to the organization.

Jiang et al. (2012) endorse the theory of Lepak and colleagues (2006), which states that HR practices fall into one of three dimensions, focusing on potential competencies of the employees, consistent with the AMO-model.

2.3.1 ABILITIES-ENHANCING HRM PRACTICES

The area of abilities in the AMO model is made operational through skill-enhancing HR practices. These practices ensure that employees are properly skilled for the job they are hired to do. This means they focus on the human capital and directly influence the type or level of skills and abilities an employee has. Examples of practices falling under the category of skill-enhancing are recruitment and selection, to ensure employees possess the skills needed and training and development, where employees can be taught the skills they need. So enhancing abilities of employees can be done in two ways; through hiring individuals that already have the required skills and raise the skill level of the overall work forces, or through training the necessary skills in existing employees (Jiang et al., 2012).

2.3.2 MOTIVATION-ENHANCING HRM PRACTICES

Motivation is covered by motivation-enhancing HR practices. These practices are used to enhance the motivation of employees. Practices falling under motivation-enhancing HR practices focus more on the extrinsic motivation, where work efforts are linked to external rewards. Examples are competitive compensation, promotion opportunities and incentives. Intrinsic motivation, like work teams or flexible job design fall under the dimension of opportunity in the AMO model.

The dimension of motivation is linked to the other dimensions through the way the different practices work together. As said before, the different practices together form a HR system. A link between motivation and abilities, for example, can be made because skills and abilities acquired through skill-enhancing HR practices can open up career opportunities such as promotion (Jiang et al., 2012).

2.3.3 OPPORTUNITY-ENHANCING HRM PRACTICES

Opportunity-enhancing HR practices fall under the dimension of opportunity. They are used to empower employees to use the acquired skills and motivation to attain goals and objectives set by the organization. Opportunities can be offered through practices like work teams, flexible job design and employee involvement. As mentioned before, opportunity-enhancing HR practices are about raising intrinsic motivation. The HR practices used encourage employees to look for challenges at work. Examples are employee involvement, information sharing and flexible job design (Jiang et al., 2012).

2.3.4 MULTIDIMENSIONAL CONCEPT

As one can see, the third concept in our research is also a multidimensional concept. The AMO model consists of three dimensions; Ability, motivation and opportunity. These 3 dimensions are all part of the process of employers supporting and managing their employees. First the employees need the abilities and skills, in order for them to be able to perform their jobs in the right way. Next employees need the motivation so they are willing to perform their job, and they want to put in the effort to succeed in their work goals, and the goals of the company. Lastly there is opportunity. Opportunity is needed so that employees can use the motivation and skills that they received from the first two dimensions. Or as Hyde, Harris, Boaden, and Cortvriend (2009) describe it in their article; "Ability sets capability of employees to perform, motivation influences the degree to which employees enact their ability to perform and opportunity refers to infrastructure available to employees to enact ability and motivation to perform" (Hyde et al., 2009, p. 703).

But the AMO model only describes the different components necessary to form an effective HR system. In order to research the effect of HRM in relation to Job crafting and Work engagement, we need to define which HR system we are using in this research.

2.3.5 HIGH-COMMITMENT HRM

High-commitment HRM is one of the existing HR systems. According to Whitener (2001) high-commitment HR practices are used to support the development of skills, motivation, information, and empowerment of employees. He says that these practices stimulate the commitment of employees. High commitment HR practices can be perceived by employees as a way through which they receive support and trust from the organization (Whitener, 2001). When employees feel they are supported and trusted by the organization, this will raise their Work engagement. This is because employees become highly involved in the organization, and will work harder to achieve the organizational goals. When employees find that they are committed to the organization they will feel like their work is worth their energy, raising vigor. They also become more dedicated, because they can be proud about their organization and by extent their job. When the behavior and objectives of employees are line with the goals of the organization, performance will improve (Jiang et al., 2012).

Practices that fall under high-commitment HRM are for example intensive training, selective staffing and job security. Employees have a high degree of freedom in making decisions on their own, and in deciding how to perform their job (Lepak & Snell, 2002). When employees receive intensive training, this provides employees with job resources, which in turn leads to a higher degree of Work engagement.

When employees receive the job resources that they need, they can handle the job demands that they have in a better way(Bakker et al., 2007). So the high-commitment HR practices provide the employees with job resources through for example, hiring the right employees with the right skill sets. These new employees can support the already present employees and strengthen the pool of information and skills present within the organization. This means that advice and input from the different sources becomes more meaningful, and information sharing becomes more effective, since the information that is shared is relevant and useful. Another practice that provides resources is intensive training. This ensures that the employees achieve new skills and abilities, and are therefore better able to handle job demands, raising their Work engagement.

But before the different practices have the right impact on employees, and deliver the results that were intended by higher management, employees do need to perceive practices in the right way.

2.3.6 PERCEIVED HRM
There are several ways to measure HRM in an organization. One can measure the actual practices that are used in an organization, the practices the way they were intended by higher management, or the way HRM is actually perceived by employees.

In this research perceived HRM is chosen, because the way an employee perceives the existing HR practices in an organization is very important. In order to explain this, a deviation between policies and practices needs to be made. According to Boselie et al. (2005), policies represent the stated intentions of the organization regarding employee management activities, whereas practices are the actual activities, conducted by lower management, experienced by employees. There can be a lot of written policies the top management believes to be effective, but when these policies do not reach the employee through the use of HR practices, or do not have the desired effect, they are void (Boselie et al., 2005). This is because HRM is a way for employers to manage their employees. When measures do not reach those employees, employees cannot be managed, or the implemented practices will not have the intended effect. We do not merely want to measure the presence of HRM in an organization, we want to measure what practices actually reach employees. Boselie et al. (2005) tell us that changes in employee attitudes and behavior is very important for HRM's impact on performance, so it is important to take the experience of employees into account.

Work engagement is dependent on two drivers; the amount of job resources, and job demands (Bakker et al., 2007; Schaufeli & Bakker, 2004). Even though these two drivers are both quantifiable, we still want to measure the HRM perceptions of employees. We chose perceptions because perceptions show the effect that the implemented practices have on employees. When we look at actual perceptions we ask the opinion of a few HR professionals, but research has shown that there is a lot of variation how the different practices land within the organization (Boselie et al., 2005). We can try to get a more accurate measurement of how HR is perceived throughout the organization by asking the direct supervisors of different teams about the amount of practices they use and how they use them, but then we would still experience a lot of variation in the perception of the different team members (Boselie et al., 2005). As Boselie et al. (2005) say, HRM can operate at different levels in the organization, but can therefore also

be perceived differently at the different levels. That is why we ask the perception of the people that we want to study, the employees. This will give us the best measure of HRM and resources in this case.

But measuring every employee separate will not give us a very reliable measurement. This is because perceptions are subjective. It is possible that someone believes he receives a lot of resources, but in reality this is not true. The perception of an individual is not always very reliable, it can create a distorted picture. This is why we look at employee perceptions of HRM on a team level. By taking the collective opinion of a group of people, the measurement becomes less subjective. We do not want to create a HR system, or a mix of HR and Job crafting that is different for each employee. We want to research how Job crafting and HRM influence Work engagement in general, so over a larger group of employees. This in order to later be able to generalize our findings. Because we expect a collective perception of, for instance an educational team within the organization, to give a more accurate picture of the situation, we choose to measure collective perception on team level of perceived HRM by employees.

2.4 HYPOTHESES

2.4.1 PARTIAL MEDIATION

Now that we know where the different concepts originate from, and how they are constructed, we are able to create hypotheses to help in researching and answering our research question.

Figure 1. Hypothesis 1

In this first hypothesis Job crafting is a mediator between HRM and Work engagement. Here we hypothesize that HRM delivers resources necessary for Job crafting and Job crafting heightens Work engagement. So when HRM increases, Job crafting increases and in turn, Work engagement will increase.

Relationship between HRM and Job crafting

HRM has a positive impact on Job crafting because it allows employees to craft their jobs. The sub dimensions of Job crafting are dependent on the degree of HRM that is present in the organization. When employees want to craft their social resources, but they are not working in a team, or they do not receive feedback from their supervisor or receive advice from colleagues, it becomes very hard to craft those (hardly existent) social resources. This is because social resources are dependent on interaction between colleagues and supervisors and about feedback and advice (Tims et al., 2012). So the social resources that HRM provides are necessary in order for employees to craft their social resources. One way for an organization to provide those social resources is through HRM, through for example motivation-enhancing practices, like performance appraisals (which provides employees with direction and feedback) and team working (which encourages colleagues to give advice and share knowledge).

Another example of HRM providing resources is through ability-enhancing practices. This are HR practices like recruitment/selection. Through recruitment and selection new employees are attracted, who will provide new and more social resources for other employees (Warner, 2004).

But structural resources are also important in explaining the relationship between HRM and Job crafting. When employees want to craft their structural resources and want to be able to decide on their own how perform their job, it is easier when the organization supports this through HRM opportunity-enhancing practices like job design. Job design allows employees to make their own decisions, gives them a wide variety of tasks and allows employees to make decisions about how to perform their job (Oldham & Hackman, 2010). This is because HRM provides the resources to craft, through task variety and trusting employees to make their own decisions. When employees do not get the space and responsibility to form their own job, it becomes incredibly hard to craft structural resources. Another way to craft structural resources is through ability-enhancing practices like training or recruitment and selection. Training provides employees with new capabilities and job knowledge, giving employees more resources to craft. Recruitment and selection can inject the company with new knowledge and skills by hiring the right employees with the right skills (Pereira & Budhwar, 2015). Because of the new job knowledge and capabilities in the organization, more structural resources are present to craft.

Lastly there is crafting the increase of challenging demands. When organizations use motivation-enhancing practices like compensation and rewards, and put out incentives for employees to come up with new ideas, employees are stimulated to increase their challenging demands. This is because the organization gives off the message that it is desirable to innovate, and that they will give the opportunity for employees to do new things. Again, increasing challenging demands, or resources, is only possible when the employees are given space and are supported by the organization they work for (Saad, Samah, & Juhdi, 2008). HRM can provide that room for Job crafting. Opportunity-enhancing practices like job security also have an influence on challenging job demands. When an employee has a high degree of job security, he might be more inclined to take on challenging demands, because he is less likely to lose his job when it backfires (Bakker & Demerouti, 2014). But ability-enhancing practices, like training, influence challenging job demands as well. When an employee receives more training, he is more equipped to handle demands that are outside his comfort zone. Because of his increase in job knowledge and skills, he is better able to handle and craft his challenging demands.

Relationship between Job crafting and Work engagement
Job crafting in turn has a positive influence on Work engagement because Job crafting consists of increasing resources and seizing opportunities that make the job more challenging. The three dimensions of Work engagement; vigor, dedication and absorption, are influenced by these dimensions of Job crafting.

In order for employees to feel vigorous about their job, they need to feel that they can handle the hindering demands of their job. When employees feel their work is too demanding on a mental or emotional level, this will drain their energy (Schaufeli & Bakker, 2004). This means that when employees do feel they are able to handle the demands of their job, they are actually able to get energized from

their work, and become vigorous (Schaufeli et al., 2009). Job crafting is a way for employees to manage their job demands and resources (Bakker et al., 2007). So through Job crafting employees can manage their hindering demands, since they can arrange their job resources so that they support them in handling their demands, and lessen the negative effects of job demands so that they can become more energetic, and consequently more vigorous. But vigor is also dependent on structural demands. When employees are better developed and use their capabilities to the fullest, they are by extent better able to handle their job demands (Xanthopoulou et al., 2007). This again leads back to employees getting energized and vigorous about their job.

Social resources are important for the dedication of an employee. When employees get coaching from their supervisor and receive feedback about their performance, they get more inspired to perform well on their job and get easier enthusiastic and proud about their job (Bakker et al., 2007). In turn, this will lead to more Work engagement.
The dedication from employees also comes from employees feeling like their job is challenging and interesting. When employees feel that they are challenged by their work, their work can inspire them, and makes them enthusiastic. These positive emotions are connected to a positive state of mind, and consequently, engagement and dedication (Slatten & Mehmetoglu, 2011). This is also how hindering demands affect dedication. As said, dedication concerns a positive state of mind. When employees are plagued by too much hindering job demands, this positive state of mind is hard to reach, and thus, employees will not as easily get dedicated to their job. So when these hindering job demands are decreased, it will be beneficial to raising Work engagement. Structural resources have an influence on dedication through autonomy, because job autonomy causes engagement (Schaufeli & Salanova, 2007). When employees get to make more decisions and they receive more responsibility, employees will more easily become proud and enthusiastic about their job.

The last dimension of Work engagement, absorption, is also influenced by Job crafting and the balance between job demands and resources. Since absorption is a flow that employees enter, getting them carried away and happily engrossed (Schaufeli et al., 2009), hindering demands are detrimental to this process. When an employee is affected by job demands that he is not able to handle, he becomes stressed and will not be able to enter the flow of working that is required for absorption. So when employees are better able to handle their demands and resources through Job crafting, it is easier for them to become absorbed and therefore work engaged. Structural resources also play a role, in that they stimulate employees in developing capabilities. When employees feel they are able to succeed in their job, because they have the capabilities they need, they get more easily carried away, and get into the flow of being absorbed.

Mediation
The relationship that is important in this hypothesis is the partial mediation of Job crafting on the relationship between HRM and Work engagement. We expect to find mediation because we think there is a significant relationship between HRM and Job crafting, and we expect a significant relationship between Job crafting and Work engagement. So when HRM increases, Job crafting increases, and Work

engagement will increase. Job resources such as autonomy, feedback and rewards, are relevant to raise Work engagement (Hakanen et al., 2008). We hypothesize that HRM delivers the job resources that are necessary for Job crafting. When HRM provides the resources, and ensures that Job crafting can take place, Job crafting in turn will have a strong effect on Work engagement. Without HRM, Job crafting would not be as strong, and the relationship between Job crafting and Work engagement would weaken since Job crafting could not be used as effectively.

To specify our hypothesis further; we expect to find partial mediation, because full mediation, the golden standard, rarely happens in practice(Iacobucci, Saldanha, & Deng, 2007). The reason research rarely expects to find full mediation is that there are almost always other mediators that can explain the relationship between the outcome variable and the independent variable.

In this case we say that the relation between HRM and Work engagement can be explained by Job crafting. We also say that the effect of Job crafting is partial mediation, because we can think of several other variables that are able to explain the relationship between HRM and Work engagement. An example of such a variable is the leader-member-exchange (LMX). LMX generates "more effective leadership through the development and maintenance of mature leadership relations" (Graen & Uhl-Bien, 1995, p. 220). It focuses on the dyadic relationship between leaders and employees. LMX has an effect on the responsibility, access to resources and performance of employees (Deluga, 1998). When the quality of the LMX-relationship is good, performance will improve, the responsibility of employees will become bigger and employees get access to more resources. HRM is executed by the supervisor, and LMX concerns the relationship between the supervisor and employees, trust and mutual understanding. When the mutual understanding between an employee and his employer is high, the HR practices an employer executes will be better received by the employee. Because the HR practice is better received, it will most likely have a better effect on the employee, raising his Work engagement. So several mediators exist that can explain the relationship between HRM and Work engagement. But in this research we specifically look at how Job crafting partially mediates the relationship between HRM and Work engagement.

So to conclude our hypothesis, Job crafting mediates the relationship between HRM and Work engagement:

Hypothesis 1: Job crafting partially mediates the positive relationship between HRM and Work engagement.

2.4.2 POSITIVELY MODERATING

But what if HRM does have a direct influence on Work engagement? In this hypothesis Job crafting has a positively moderating role on the relationship between HRM and Work engagement. This means that the positive relationship between HRM and Work engagement is strengthened when Job crafting is added. So when Job crafting increases, the effect HRM has on Work engagement will get stronger.
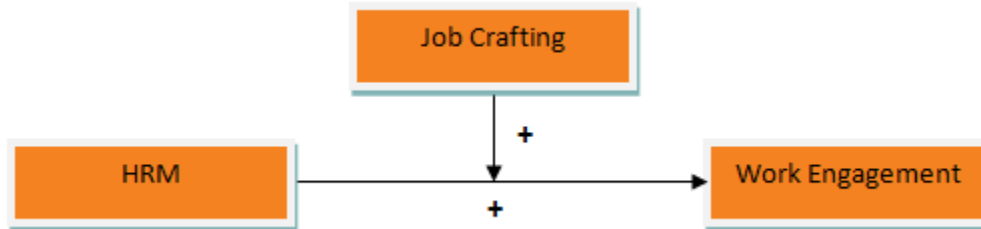

Figure 2. Hypothesis 2

In hypothesis 2 we hypothesize that Job crafting complements the relationship between HRM and Work engagement. While there is a direct positive influence of HRM on Work engagement, adding Job crafting will strengthen this relationship.

Relationship between HRM and Work engagement

HRM has a direct positive influence on Work engagement because the practices that enhance ability, motivation and opportunity have a positive influence on vigor, dedication and absorption.
When employees receive ability-enhancing practices like training, the employee receives the resources he needs to handle the demands of his job. When an employee is able to handle job demands, and feels he has adequate resources, his job will go more smoothly, and the employee will actually become energized and therefore more vigorous about his job (Shirom, 2003). Practices like recruitment and selection can facilitate promotion from within, which can make an employee more enthusiastic and inspired to perform his job well, therefore raising his Work engagement.

Motivation-enhancing practices like performance appraisals and compensation and rewards will raise the dedication and vigor an employee has towards his job. Dedication can be raised because when an employee gets feedback from his supervisor or colleagues, it can inspire an employee about his job. When an employee gets more inspired and thereby enthusiastic about his job, he becomes more dedicated to his job, raising his Work engagement. Vigor is raised through performance appraisals. Performance appraisals give employees direction, and motivate them to perform better in their job. Motivating employees will make them determined and vigorous (Shirom, 2007) and subsequently more work engaged.

Job design, a HRM practice that enhances opportunity, also influences the Work engagement of employees. When employees are able to make more decisions about how they perform their job, and get more responsibility and trust to make more decisions on their own, employees will become more dedicated about their job as well, since trust has a positive relationship with dedication (Gill, 2008). This happens because trust from a supervisor can make an employee inspired to perform well at his job, and

it raises his enthusiasm. Another effect that trust can have is that when employees experience that they receive more trust from their supervisor, their job satisfaction will increase (Saad et al., 2008), making it easier for employees to become carried away by work, raising absorption.

Moderation

So how does Job crafting influence the relationship between HRM and Work engagement in a positive way? We expect that in order for the resources that HRM offers to truly be effective, and Work engagement to increase, both the employee and employer need to be proactive. When one of those parties does not put effort in enhancing Work engagement, it will not, or barely increase. Like mentioned earlier, Job crafting is expected to complement the relationship between HRM and Work engagement.

We hypothesize that the resources that are offered need to be brought together and complement each other before a resource can have an impact on Work engagement. This means that Job crafting can provide an employee with certain resources, which need to be combined with the resources offered by HRM, in order for the resources offered by HRM to have a truly strong impact. So while this does not mean that HRM on its own has no effect on Work engagement, it does mean that the effect becomes stronger when Job crafting is used to enhance the resources of HRM. So that means that Job crafting offers important resources not available through HRM.

HRM can offer the employees several abilities and skills through ability-enhancing practices like training, but in order for employees to truly become more engaged at work, employees need to be challenged to use the abilities and skills they acquired. One way for employees to do this is through the use of Job crafting. While employees acquiring new skills will raise Work engagement because employees are better able to handle job demands, the effect on Work engagement will be much stronger when Job crafting offers challenging job demands. This is because challenging job demands have an effect on the enthusiasm and pride an employee feels about his job, raising dedication. It also has an effect on the energy and determination an employee feels. Because goals are more challenging, employees might be more determined to reach these goals, and will get energetic when goals are completed, making the employee more vigorous. So Job crafting adds something extra that HRM cannot offer, boosting Work engagement further.

Another example is that HRM provides the employees with continuous training and allows them to develop firm-specific skills. Again, having more skills and job knowledge will raise the dedication because of being better able to handle job demands, and it will raise vigor when work goals are achieved. But while Work engagement is raised this way, the effect could be a lot bigger when Job crafting adds increasing structural resources. Employees will be better motivated when they have a drive that makes them want to learn new things, and they feel they need to develop themselves professionally. By complementing the resources, employees will get even more vigorous, since they have a drive to be trained, making them more determined. This means that complementing the ability-enhancing practices from the AMO model with the drive to increase structural resources from Job crafting, will give a boost to Work engagement.

Motivation-enhancing practices from the AMO model provide employees with practices like performance appraisals. Performance appraisals on its own will increase Work engagement, since they provide employees with important resources like information and work goals. When there is a strong leader that provides employees with developmental feedback and strategic objectives, this can inspire the employees, making them more dedicated. Furthermore, setting goals in performance appraisals can make an employee determined to reach those goals, making them more vigorous. So what Job crafting adds to this equation is that employees are actively seeking feedback from both colleagues and supervisors. This means that they are more open to feedback and advice, seeking coaching and listening to people around them. So where in this case HRM offers the resources, Job crafting sets the mindset of employees, making sure that employees will use the resources offered to them. This means that through the use of Job crafting, the resources are becoming more effective, improving Work engagement further.

So Job crafting strengthens the effect HRM has on Work engagement. This leads us to formulate the following hypothesis;

Hypothesis 2: Job crafting positively moderates the positive relationship between HRM and Work engagement such that the effect of HRM on Work engagement strengthens when the level of Job crafting increases.

2.4.3 NEGATIVELY MODERATING

We already saw that HRM has a positive influence on Work engagement in the previous hypotheses. But it is also possible that instead of a positive moderating effect, Job crafting has a negative moderating effect. This hypothesis hypothesizes that there can also exist a substitution effect between HRM and Job crafting. When there already is a lot of Job crafting, how effective will HRM be?
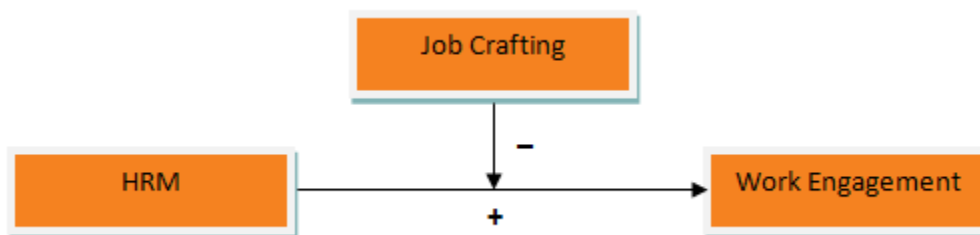

Figure 3. Hypothesis 3

In this hypothesis Job crafting has a negative effect on the relation between HRM and Work engagement. This is because in certain situations, dimensions of Job crafting can substitute for dimensions of HRM when generating certain job resources and demands.

When we look at increasing structural resources in Job crafting, employees themselves will try to develop their capabilities and develop themselves professionally. This overlaps (at least partially) with the training provided through ability-enhancing practices of HRM. When employees already develop

themselves, and seek the resources they need in order to perform in their job through training, training offered by the organization will not have as much influence. Employees already have the resources they need, so training offered by the organization will not have additional influence on Work engagement.

Another way in which Job crafting can steal the thunder from HRM is through increasing social resources. When employees want to increase their social resources, they can ask their supervisor or colleagues for advice and feedback. This will give them the resources they need to increase their Work engagement. When HRM offers similar resources through motivation-enhancing practices like performance appraisals, they will not have a (strong) effect. After all, employees already received the feedback and advice they needed through their own actions, so performance appraisals will not add a lot of new resources to the mix. So in this case, Job crafting substitutes for HRM.

Lastly there are opportunity-enhancing practices. When an employee already has a lot of structural and social resources, he most likely will already have the resources he needs, in order to decide on his own to how to do things. This means that practices like job design will not have such a strong effect on Work engagement. Employees already delegate, have good relationships with their colleagues, make their own decisions and gathered the resources they needed for this through learning new things, developing their capabilities professionally and using those capabilities to their fullest. This means that when HRM provides job design as an opportunity-enhancing practice, this does not have a strong effect.

So as shown, here we hypothesize that when employees already use a lot of Job crafting, HRM will not have a strong effect, or at least a weaker effect on Work engagement. This is because in some cases Job crafting substitutes for HRM.

Hypothesis 3: Job crafting negatively moderates the positive relationship between HRM and Work engagement such that the effect of HRM on Work engagement weakens when the level of Job crafting increases.

So in our research we established three different hypotheses. However we expect hypothesis 2 to be most valid. This is because we expect there to be a direct relationship between HRM and Work engagement, since HRM can provide resources that are important in raising Work engagement. We also expect that Job crafting will have an significant influence on Work engagement, or at least the relationship between HRM and Work engagement. The reason we do not expect hypothesis 3, is that we expect Job crafting to have a positive influence on the relation, making the influence stronger, not weaker. This is because we expect the different resources to complement each other, instead of substituting for each other.

3. METHODOLOGY

This chapter concerns the methodology used in this research, and the different methods used for data analysis. The data used is quantitative, obtained through a survey. In order to be able to test our hypothesis, answer our research question and investigate the problem, we collected data from Deltion College Zwolle.

3.1 DELTION COLLEGE ZWOLLE

Deltion College Zwolle is a college of education that facilitates intermediate vocational education (mbo-opleidingen). There are approximately 13.700 students. The company has around 1200 employees, consisting of teachers, instructors and several staff functions.

Deltion has five strategic directives they pursue in their daily activities;

- Grand in quality (Groots in kwaliteit)
- Students as the core of the organization (Student centraal)
- Experts in craftsmanship (Meesterlijk vakmanschap)
- Open-door policy (Deuren wijd open)
- Great place to work

The reason we choose Deltion as our research setting is that teachers at Deltion have a certain degree of freedom in, for example, creating and organizing their lessons. Because of this freedom we expect to find Job crafting already present in the organization, which makes it a suitable research setting. Furthermore, Deltion is a large organization with a lot of employees, making it easier to generalize our findings later on and to reach a reasonable response rate. There are around 740 teachers working at Deltion, working in educational teams. This is important, because we are interested in the perception of HRM of employees, measured on team level to get a more reliable (less biased) measurement. We are also able to research the employees directly, instead of researching them through their supervisors, which is necessary in order to adequately measure Work engagement and Job crafting. Work engagement concerns the feelings of an employee, and Job crafting is self-initiated. This means that in order to get a reliable measurement, these variables should be measured at the employee level, instead of asking supervisors to give their impression of how an employee feels or how he crafts his job.

3.1.1 SECTORS

Deltion is divided in 3 sectors; Health, Well-being & Sport, Economy & Services and Engineering & Industrial Design. Figure 4 shows the structure of each sector. Each sector has its own educational teams, consisting of teachers, instructors and senior teachers. They report to their respective program directors. Each program director controls one to three educational teams, and reports to their respective sector director. The sector director in turn reports to the executive board. Deltion has around 30-35 program directors, which translates to approximately 60 educational teams.
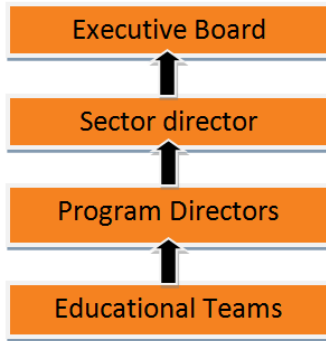
Figure 4. Organization Chart Sector

3.1.2 HR DEPARTMENT

As shown in Figure 5, each sector has their own HR adviser, who supports and advises the sector. This makes it possible to provide the different sectors with tailor-made advise and programs, since the sectors' needs can differ. Each advisor is supported by HR support. Deltion has 5 different advisors, two per sector, of which one is the senior advisor. The departments shown in white are companywide. The Deltion Academy is responsible for training, development and coaching of employees.
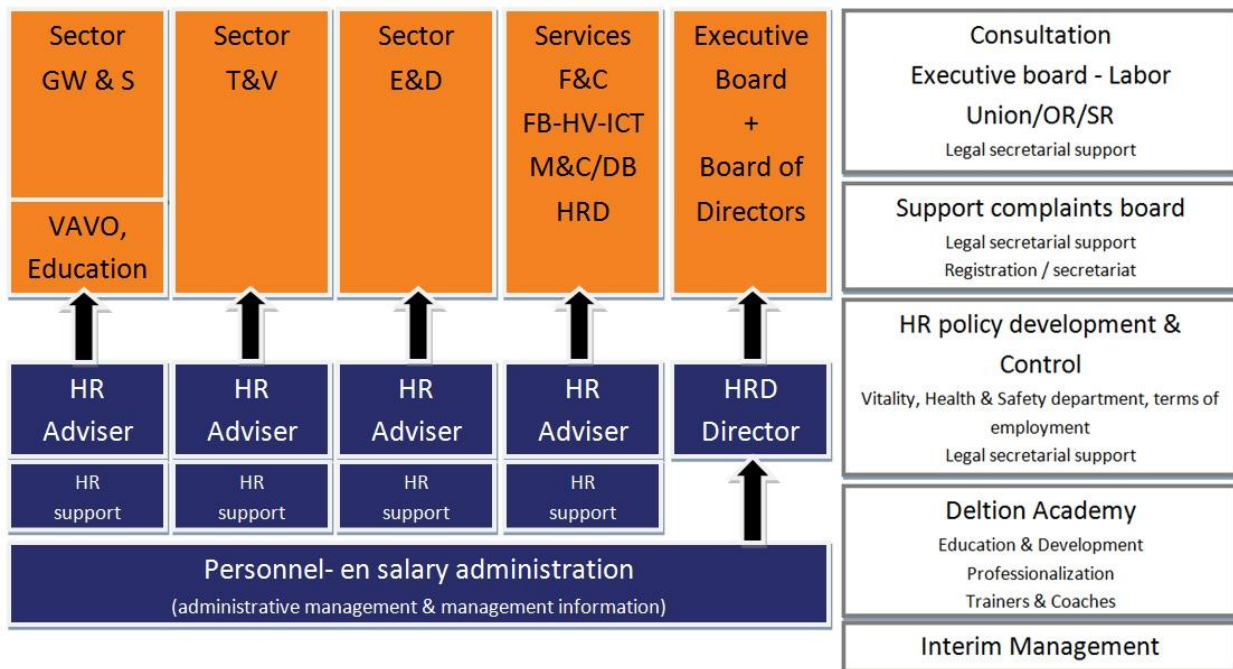

Figure 5. Organization Chart HRD

3.1.3 DELTION'S PROBLEM

Looking at Deltion's strategic directives, "a great place to work" stands out, since it is specifically aimed at employees. This means Deltion values the Work engagement of employees. They want their employees to be happy with their job, the environment in which they work and the support they receive from colleagues and superiors. Furthermore their goal is to be amongst the top employers of the Netherlands, in terms of employee satisfaction.

The request from Deltion is to investigate how they can further support and motivate their teachers, with a special focus on older teachers, aged 55 years old and up. This is because of a rise of absenteeism numbers in this age group, and new laws, requiring employees to work until an older age. Because of the shortage of teachers, it is also important for Deltion to retain the teachers that they have, and to attract new teachers by creating an attractive work environment through good HRM policies.

We translated this into investigating how Deltion can better support and stimulate their employees, and to investigating what the employees at Deltion themselves are able to do. For Deltion the contribution of this research lies in researching what HRM practices are already present in the organization, and in researching what blind-spots there are in terms of the different HRM areas (AMO). When highlighting the important HRM areas and practices that influence Work engagement the most, Deltion can see in which areas they are lacking practices, and decide whether they want to implement practices to fill that void. Another contribution lies in measuring what the effect is of the practices Deltion already uses, and how these practices are perceived by their employees. Do employees know what practices are present, and do these practices have the desired effect? Like we mentioned before under 'perceived HRM', in order to effectively manage and support employees, practices need to reach employees in the right way. Furthermore there lies a contribution in examining the state of Job crafting in Deltion. What kind of Job crafting already happens? Are employees familiar with the concept? Does Deltion offer the required resources and space, in order for their employees to successfully job craft? Is the Job crafting that already may take place in line with the companies strategies and directives? We think there may lie value in further investigating this concept in this organization.

3.2 RESEARCH DESIGN AND SAMPLING

As mentioned before, the data collected in this research is quantitative, meaning that numerical data is collected and transformed into useable statistics. This way we can generalize results from a bigger population. Patterns can be discovered, and overviews can be given about the opinions of people in a certain age group, or sector. In order to collect the data at Deltion, an electronic survey was used.

The primary reason to use a survey as the instrument for collecting data is tied to the research question of this research. The research question is; *To which extent does Job crafting mediate or (negatively or positively) moderate the relationship between HRM and Work engagement?*
The keyword here is extent. Since we want to know to what extent Job crafting influences the relationship between HRM and Work engagement, it seems that we need some sort of scale. A survey is able to provide such a scale through for example using Likert scales (Garland, 1991). Providing this kind of data through an interview is harder, since one would need a structured interview to do this. So because we want to measure the extent of something, a survey is the most effective way of collecting this data.

3.2.1 SAMPLING

Teachers were selected as the unit of analysis in this research. The reason teachers are measured is as following. In our research we want to measure Work engagement, Job crafting and HRM (as perceived by employees).

Since we are interested in the perception and feelings of employees, rather than the opinion of supervisors, we select the teachers and senior teachers at Deltion as our units of analysis. Since Work engagement is something that an employee feels, it is better measured through the opinion of the employee himself, rather than through the (biased) view of a supervisor. Furthermore we want to measure Job crafting, which is self-initiated and needs to connect to the personal needs and preferences of employees (Tims et al., 2013), strengthening our point of selecting teachers as our units of analysis. As mentioned before, we also want to measure the perception of employees on the HRM they receive, since stated intentions by management and actual activities can differ (Boselie et al., 2005).

Apart from the occupation as teacher (or senior teacher) at Deltion, there were no further selection criteria. We choose to research all three sectors present in Deltion, since we expect the results to vary between sectors, and we want a complete overview of the organization. This is because the kind of people in the sectors differ a lot in their opinions, characters and behavior. In this case that meant that we sent the survey to all the teachers currently working at Deltion, which gives us a total of 738 teachers.

To ensure that we would have enough statistical power, making sure that tests detect differences when they truly exist, a required sample size was needed. We calculated this sample size beforehand to ensure that the sample size that was needed was achievable. We calculated the sample size using the following calculation;

$$n \geq \frac{N \times z^2 \times p(1-p)}{z^2 \times p(1-p) + (N-1) \times F^2}$$

n = The required amount of respondents
z = The standard deviation with a certain reliability percentage. This is 1.96 for 95% reliability.
N = The size of the population
p = The chance somebody gives a certain answer
F = Standard error (generally 3%, 5% or 7%)

(Allesovermarktonderzoek, 2015; Journalinks, 2012)

This gives us the following calculation;

$$\frac{738 \ x \ 1.96^2 \ x \ \frac{1}{5}\left(1 - \frac{1}{5}\right)}{1.96^2 \ x \ \frac{1}{5}\left(1 - \frac{1}{5}\right) + \ (738 - 1)x \ 0.05^2}$$

Which leads to a required sample size of 185 employees.

Since our required sample size is 185 employees, and our population consists of 738 teachers, we need a response rate of $\frac{185 \times 100}{738} = 25.07 \approx 25\%$.

This means that it is wise to use the entire population of teachers at Deltion, because that raises the chance of reaching the required sample size. Even though we do not expect everyone to complete the

survey, we do expect reaching the required sample size, and therefore have enough statistical power for our research.

Research from Nulty (2008) examines different studies and their response rates, finding a mean response rate of 33% for an online survey. He does however note that several approaches for boosting response rates need to be taken. First he notes that a survey needs to pushed, meaning that it should be easy for respondents to access the survey (Nulty, 2008). In our survey we sent each teacher an email with a link that would directly take them to the survey. A clear deadline was mentioned in the survey, so that respondents knew until when the survey remained open. The survey remained open for two weeks. Secondly Nulty (2008) mentions the need for frequent reminders . In our research we chose to sent employees two reminders, since the survey was online for two weeks, and the response seemed good. The third point Nulty (2008) mentions is that respondents need to be convinced that their response will be used. This was done through a introductory text in the survey, and in the email sent to employees. It was explained to the respondents what the survey would be about, what the goal of the research was and why it was important for them to complete the survey. Fourthly, Nulty (2008) points out the boosting approach of providing rewards. In order to stimulate employees to fill out our survey, five random respondents would win a prize. Lastly Nulty (2008) points out anonymity. When respondents are ensured they are (to a certain extent) anonym, the response rate will be higher. Participants of the survey were ensured in the introduction and in the email that their answers would be handled with care, and their individual answers would not be sent to Deltion. They were also told that results would not be reported in such a way that they could be traced back to individuals.

3.2.2 FINAL SAMPLE
A total of 282 employees started the survey. Of these participants, 25 people did not answer all the statements used to measure the three main concepts of this research; Work engagement, Job crafting and HRM. This leads to a sample of 257 teachers, which is a response rate of 34.8%. That meant that the minimal required sample, 185 respondents, was easily fulfilled.

When we look at the spread of these employees over the three different sectors of Deltion, we see that out of the 270 teachers of Economy & Services, 80 teachers completed the survey (29.6%), of the 217 teachers of Health, Well-being & Sport 77 teachers completed the survey (35.5%) and of the 251 teachers of Engineering & Industrial Design, 87 teachers completed the survey (34.7%).

Out of the respondents, 61.5% was male and 38.5% was female. The mean birth year of participants was 1966.91 ≈ 1967 (Standard deviation= 10.373), which means that the mean age under the respondents was 49 years old. 80% of the respondents was a teacher and 20% was a senior teacher. The mean amount of years respondents have been working at Deltion is 12.5 years (Standard deviation = 9.928). The highest education of the respondents was as following; 2% high school, 3% MBO, 85% HBO and 10% university.
Out of all the respondents that started the survey, 47 employees did not completely finish the survey. While some surveys still delivered useful information, 25 surveys did not answer the questions about the main variables, and therefore could not be used and were dropped from the study. The 47

employees chose to break off the survey at various points, but most employees backed out when personal details such as birth year or team were asked.

In order to see if there are significant differences between the employees that dropped out, and the employees that completed the survey, a independent samples T-test was conducted through SPSS. For HRM and Work engagement we could assume that there were equal variances (significance of .391 and .079 respectively) , but for Job crafting the Levene's Test for Equal Variances was significant (.015). This means that for Job crafting the variance between the two groups is equal.

For Work engagement the mean difference between the two groups was -.13617 with a standard error difference of .09994. The significance here was .178. This means that the dropouts were a little less work engaged, and their answers were a little bit more spread out. The differences were however not significant.
For HRM, the mean difference was -.00430 with a standard error difference of .0883. The significance was .961. So employees that dropped out found HRM less effective, but again, the difference is not significant.
For Job crafting, the mean difference was .11801, with a standard error difference of .06486. Here the significance was .070. So employees that dropped out used more Job crafting, but the difference is not significant.

So even though there are small differences between employees that dropped out and employees that completed the survey, all of these differences are not significant and are therefore negligible. This means that an attrition bias is unlikely.

3.2.3 SURVEY
So due to our research question, and aiming to measure an extent, a survey is the best way to collect data. Apart from measuring an extent, a survey also seems to be the best method of reaching a large group of employees. In his book,Babbie (2007) states that when the population a researcher wants to investigate is too large to observe directly, a survey may be the best method to collect original data from this population.

There are several risks when conducting a survey. Questions can be unclear, or could be double-barred. Unclear questions should be avoided since they generally do not provide reliable or enough information(Babbie, 2007). In order to avoid this, the questionnaire was sent to and pre-tested by 5 different people, of different age, educational level, occupation and gender. These people filled in the survey, marking questions they found confusing, unclear or unfit for this research setting (Deltion). After this pre-testing some minor changes, like adding an explanation to job rotation, were made to the survey, but most of the survey items proved to be clear.

In order to keep the survey clear and consistent most questions were closed questions. A 5-point Likert scale was used as the answer option in most of the questions. The available answers were; strongly disagree, disagree, neutral, agree and strongly agree. The mean scores the Likert scale delivers are intuitively meaningful and can be used in parametric statistical tests(Spector, 1980). According to

Chomeya (2010) Likert scales are useful when researchers want to measure personal internal attributes like Work engagement. The type of questioning provided by the Likert scale allows researchers to judge the relative strength of an agreement meant by different respondents. We chose to include a midpoint, since leaving it out can distort the results and can result in more negative ratings (Garland, 1991).

Because the most teachers first language is Dutch, the questions in the survey were translated to Dutch to ensure everyone understood the questions. The translated questions and an overview of the entire survey can be found in Appendix A.

In the survey, employees were asked to rate how they experience their daily work, the activities they themselves undertake in order to develop themselves, to make their work more enjoyable and the way they believe they receive support from Deltion through HRM. Furthermore some general questions were asked, like their birth year, their gender, the amount of years they are employed at Deltion, the highest education they completed, which sector and team they are working at and the size of the teams they are working in.

3.3 MEASURING THE MAIN VARIABLES

For some of the concepts we want to measure in this research, there already exists a proven scale. This was the case for both Work engagement and Job crafting.

3.3.1 UTRECHT WORK ENGAGEMENT SCALE

The main outcome of this research is Work engagement. In order to measure Work engagement under employees, we need a scale that is able to measure this concept. Since we chose to follow the threefold division of Schaufeli and Bakker, it seems logical to also use the scale they developed to measure Work engagement, since it follows the line of reasoning and definition that we adopted in this research. This scale is the Utrecht Work engagement Scale (UWES). It measures engagement using the dimensions vigor, dedication and absorption. Employees who score high on the UWES are engaged, "active agents, who take initiative at work and generate their own positive feedback" (Schaufeli & Bakker, 2003, p. 6). Working hard is not initiated by an inner drive, but because work is experienced as a fun activity.

In this research we want to measure the Work engagement of teachers. The UWES satisfies this need, since it uses statements in the first person to measure each dimension of Work engagement. This means that we receive data on how the employee himself views his Work engagement, rather than how others (supervisors etc.) view his Work engagement. This delivers reliable data, since Work engagement is personal and subjective. The answers to the different statements can be combined into a score that represents Work engagement as a whole. So this scale allows us to measure the entire concept of Work engagement, with the added advantage of being able to split the data into the different dimensions, so that it becomes evident which dimension lacks strength, and on which dimension the organization needs to improve or better support its employees.

Several versions of the UWES exist, differing in length. In this research we choose to use the shortened version, consisting of nine questions. The main reason in choosing UWES-9 is because of the amount of questions the total survey would contain. As mentioned previously, keeping the survey shorter will lead

to a higher response rate(Sahlqvist et al., 2011). According to Schaufeli and Bakker (2003) it is acceptable to use the shortened version since we are interesting in measuring the concept of engagement as a total score, and not the specific dimensions apart from each other.

The short version uses three items per dimension; one characteristic item, and two supplementing items. Supplementing items were chosen by taking the two highest β-values from the original list out of samples, tested in several countries (Schaufeli & Bakker, 2003). The characteristic items for vigor is "At my work, I feel bursting with energy"(Schaufeli & Bakker, 2003, p. 21). For dedication there is "I am enthusiastic about my job"(Schaufeli & Bakker, 2003, p. 21). And lastly for absorption the characteristic item is "I am immersed in my work"(Schaufeli & Bakker, 2003, p. 21).The English version of the UWES-9 is adapted in the table of constructs, shown in Table 1. A Dutch version of the questionnaire can be found in Appendix A.

Table 1. Operationalization table of constructs Work engagement

1st order	2nd order	Items
Work engagement, a positive state of work-related wellbeing characterized by vigor, dedication and absorption, where employees have high levels of energy, and are enthusiastic about their work.	Vigor, employees have high levels of energy and mental resilience and are strong and determined.	At my work, I feel bursting with energy
		At my job, I feel strong and vigorous
		When I get up in the morning, I feel like going to work
	Dedication, employees are loyal to, proud and enthusiastic about their job. Their job is challenging, inspiring and has significance.	I am enthusiastic about my job
		I am proud of the work that I do
		My job inspires me
	Absorption, work occupies the mind of the employees, making employees happily immersed and engrossed in their work.	I am immersed in my work
		I get carried away when I'm working
		I feel happy when I am working intensely

Note. Items adapted from Schaufeli and Bakker (2003).

Factor analysis & reliability analysis

In order to investigate the variable relationships and to see if the variables we use in this research have similar patterns of responses, a factor analysis is conducted. Factor analyses can be used to determine how many factors, or dimensions, are responsible for explaining the main concept (Abdi, 2003). In this case, we expect to find 3 factors for Work engagement. We expect these factors because that corresponds with the different dimensions we explained in the theory section of this research. The reason we look for factors is that these factors allow us to research for concepts that we cannot easily measure directly (Abdi, 2003).

We also test the assumptions of the factor analysis through the correlation and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO-test). The correlation matrix shows the inter-correlation between variables. While variables should be correlated, they cannot correlate too highly, since that would produce the threat of multicollinearity (Field, 2000). To avoid this, values in the correlation matrix

cannot be higher than .9.

The KMO-test checks whether the sample used is big enough. This is the case when the value of the KMO is bigger than .5 (Field, 2000).

The reliability analysis is used to measure if respondents give consistent answers to items that measure the same concept(Field, 2000). This means that the reliability analysis is executed within a concept. By executing this test, the internal consistency and whether the scale is reliable in the setting of this research, is measured. In this test, the Cronbach's alpha is very important. "Cronbach's alpha is an index of reliability associated with the variation accounted for by the true score of the underlying construct" (Santos, 1999, p. 2). The alpha can range from 0 to 1. The higher the score, the more reliable a scale is. In the item total statistics there will also be looked at the corrected item total correlation. This is done to see if there are items in the scale that can be removed, in order to raise the Cronbach's alpha and strengthen the scale(Field, 2000).

First a factor analysis was done of the 9 items in the UWES. All 9 items correlated at least .4 with at least one other items, so reasonable factorability is suggested. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO test) was .880, which is above the recommended value of .6, which means that the data is suitable for structure detection. Communalities were all above .3, confirming that each item shared common variance with other items. Therefore the factor analysis is suitable with all 9 items. The factor loadings can be found in Table 2.

Table 2. Factor loadings Work engagement

Item	Factor 1
At my work, I feel bursting with energy	.817
I am enthusiastic about my job	.807
My job inspires me	.796
When I get up in the morning, I feel like going to work	.762
At my job, I feel strong and vigorous	.741
I am immersed in my work	.724
I get carried away when I'm working	.669
I am proud of the work that I do	.657
I feel happy when I am working intensely	.565

In this factor analysis we extracted one factor with an Eigenvalue above 1, explaining 53% of the variance. This means that all 9 items load onto factor 1. So instead of the three expected factors of vigor, dedication and absorption, just the overall factor Work engagement was found. The internal consistency of the scale was examined using Cronbach's alpha. The alpha was high: .888. No substantial increases in the Cronbach's alpha could be achieved through eliminating items.

A mean score was calculated for Work engagement, based on the mean of each of the 9 items in the UWES. The higher the score, the more work engaged employees are.
So overall the analysis showed that there was one distinct factor explaining Work engagement, instead

of the three expected factors. This means that the original factor structure of Schaufeli and Bakker (2003) was not found in this data. All the statements in the UWES measured the concept of Work engagement as a whole.

3.3.2 DUTCH JOB CRAFTING SCALE

Tims et al. (2012) created a generic scale for measuring Job crafting within an organization, the Dutch Job crafting scale (JCS). The categories in the JCS correspond to the four dimensions that were identified earlier. Tims et al.(2012) identified which questions were best fit to measure their dimensions of Job crafting and created a scale that would measure if employees tried to increase their resources and their challenging demands, and tried to decrease their hindering demands. As previously mentioned in the theory section, we choose to follow the reasoning of Tims et al. (2012) because their view is less limited than the view of Wrzesniewski and Dutton (2001) in that it includes more job characteristics, like avoiding unpleasant clients. While this behavior is not always valued by the organization, it is an important aspect of Job crafting in reducing job stress (Tims et al., 2012). Furthermore, the framework of Tims et al. is based on the job resources and demands model, which fits our concepts of Work engagement and HRM and is used connect the different concepts.

The scale of Tims et al. (2012) started out with 42 measurement items , but was later reduced to 21 core items. The statements in the JCS are formulated in a first-person view. This is because Job crafting requires a pro-active behavior of employees. The statements therefore are written in such a way that they refer to initiatives of employees. Once again, we want to measure the measure the experience of the employees, as opposed to the view of management.
The different items of the JCS can be found in Table 3. A Dutch version can be found in appendix A.

Table 3. Operationalization table of constructs Job crafting

1st order	2nd order	Items
Job crafting, an employee-driven approach, where employees try to better fit their job to their skills and preferences through increasing their resources, increasing their challenging demands and decreasing hindering demands.	**Increasing structural job resources**, a gain in responsibility and/or job knowledge, developing capabilities. Have a big influence on job design.	I try to develop my capabilities
		I try to develop myself professionally
		I try to learn new things at work
		I make sure that I use my capabilities to the fullest
		I decide on my own how I do things
	Increasing social job resources, a gain or impact on the social aspects of a job, reaching decent levels of interaction, asking for feedback or advice from either supervisors or colleagues.	I ask my supervisor to coach me
		I ask whether my supervisor is satisfied with my work
		I look to my supervisor for inspiration
		I ask others for feedback on my job performance
		I ask colleagues for advice
	Increasing challenging job demands, keeping a job stimulating and challenging, in order to avoid boredom and absenteeism. Actively pursuing new opportunities and being open to change and new developments.	When an interesting project comes along, I offer myself proactively as project co-worker
		If there are new developments, I am one of the first to learn about them and try them out
		When there is not much to do at work, I see it as a chance to start new projects
		I regularly take on extra tasks even though I do not receive

		extra salary for them
		I try to make my work more challenging by examining the underlying relationships between aspects of my job
	Decreasing hindering job demands, scaling demands down that are perceived as hindering or stressful, concerning both emotional demands and mental demands.	I make sure that my work is mentally less intense
		I try to ensure that my work is emotionally less intense
		I manage my work so that I try to minimize contact with people whose problems affect me emotionally
		I organize my work so as to minimize contact with people whose expectations are unrealistic
		I try to ensure that I do not have to make difficult decisions at work
		I organize my work in such a way to make sure that I do not have to concentrate for too long a period at once

Note. Items adapted from Tims et al. (2012).

Factor analysis

Again a factor analysis was conducted to investigate the underlying factors and patterns of responses. A factor analysis was done containing all 21 items of Job crafting. All items correlated at least .3 with another item, so again, reasonable factorability could be assumed. The KMO test was .781, so above the recommended value of 6. Communalities were above .3, so each item supposedly shares common variance with other items. These findings suggest that the factor analysis is suitable with all 21 items.

Six factors with an eigenvalue above 1 were found. All items were examined using varimax rotations of the factor loading matrix. The varimax rotation is used to find the optimal amount of factors, because it spreads variability more evenly among factors, and sharper distinctions in the meanings of factors can be made. Varimax searches for a rotation so that the variance of loadings is maximized (Abdi, 2003). This resulted in 6 more evenly loading factors. The different factor loadings can be found in Table 4. As we can see 6 factors were identified. Factors 1, 2, 3 and 4 had an eigenvalue above 2, explaining 14%, 13%, 12% and 11% respectively, whereas factors 5 and 6 had an eigenvalue around 1.7, both explaining 8%.

Factor labels created by Tims et al. (2012) were mostly retained, with the exception of decreasing hindering job demands and increasing social job resources.
The five items measuring "increasing challenging job demands", all load onto Factor 1 (see Table 4). These items all relate to increasing those demands that make a job interesting, challenging and by extent enjoyable. So the label of Factor 1 is "increasing challenging job demands".

Factor 2 consists of 4 items. The items in this factor all relate to "increasing structural job resources". These are again the same items as the items used to measure "increasing structural job resources" in Table 3, but the statement "I decide on my own how to do things" loaded better on Factor 5. However, the label "increasing structural job resources" was kept for Factor 2.

Table 4. Factor loadings Job crafting

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
I regularly take on extra tasks even though I do not receive extra salary for them	.749					
When an interesting project comes along, I offer myself proactively as project co-worker	.719					
If there are new developments, I am one of the first to learn about them and try them out	.667					
When there is not much to do at work, I see it as a chance to start new projects	.650					
I try to make my work more challenging by examining the underlying relationships between aspects of my job	.637					
I try to develop myself professionally		.899				
I try to develop my capabilities		.866				
I try to learn new things at work		.750				
I make sure that I use my capabilities to the fullest		.537				
I organize my work so as to minimize contact with people whose expectations are unrealistic			.783			
I manage my work so that I try to minimize contact with people whose problems affect me emotionally			.777			
I try to ensure that I do not have to make difficult decisions at work			.762			
I organize my work in such a way to make sure that I do not have to concentrate for too long a period at once			.574			
I ask my supervisor to coach me				.807		
I look to my supervisor for inspiration				.805		
I ask whether my supervisor is satisfied with my work				.783		
I make sure that my work is mentally less intense					.840	
I try to ensure that my work is emotionally less intense					.772	
I decide on my own how I do things					.426	
I ask colleagues for advice						.856
I ask others for feedback on my job performance						.846

In Factor 3 we find most of our statements used to measure "decreasing hindering job demands". The statements found in Factor 3 are all about statements that concern contacts at work, making decisions and dealing with people. That is why the label "decreasing hindering job demands concerning people" was given to Factor 3. It is clear why "I manage my work so that I try to minimize contact with people whose problems affect me emotionally" and "I organize my work so as to minimize contact with people whose expectations are unrealistic" fall under that label, but "I try to ensure that I do not have to make difficult decisions at work" and " I organize my work in such a way to make sure that I do not have to concentrate for too long a period at once", might not be so obvious. Making decisions will have an impact on other people, and so other people will have to be taken into account when making decisions. This can add pressure to that decision making, and can result in hindering job demands. Organizing work in such a way that concentration for long periods of time can be avoided is dependent on other people

as well. Others need to fit their activities to that schedule/ rhythm and choices that follow from executing that schedule. Since that might not be the way they prefer it, pressure will arise to do work in a certain way, creating the hindering demands of not being able to arrange work in that way.

Half of "increasing social job resources" is represented by Factor 4. The statements here are "I ask my supervisor to coach me", "I ask whether my supervisor is satisfied with my work" and "I look to my supervisor for inspiration". All of these statements concern the supervisor of an employee. So Factor 4 is labeled "Increasing social job resources concerning supervisor".

Factor 5 contains the other statements from "decreasing hindering job demands". The demands here concern making work less emotionally and mentally intensive. So the demands here are about the work and characteristics of work itself, and do not necessarily concern other people. The label given to Factor 5 is "decreasing hindering job demands concerning work itself".

Factor 6 contains the other statements from increasing social demands, "I ask others for feedback on my job performance" and "I ask colleagues for advice". These statements are about colleagues at work. So Factor 6 was labeled "Increasing social job resources concerning colleagues".

When the Factors were defined, item bundles were created by averaging the score on the items that load on the observed factors. These mean scores were again put into a factor analysis to see if the factors together measured Job crafting.

Two types of Job crafting
The KMO test was .687 and all items bundles correlated at least .3 with at least one other item bundle. All communalities were above .4, so each item bundle had common variance with another item bundle. The factor analysis showed two factors with an eigenvalue above 1, explaining 36% and 22% of variance. It showed that the earlier determined item bundles 1, 2, 4 and 6 loaded on factor 1, and item bundles 3 and 5 loaded on factor 2 (Table 5).

Table 5. Factor loadings item bundles Job crafting

Item bundle	Factor 1	Factor 2
Increasing structural job resources	.769	
Increasing challenging job demands	.737	
Increasing social job resources concerning colleagues	.734	
Increasing social job resources concerning supervisor	.681	
Decreasing hindering job demands concerning work itself		.810
Decreasing hindering job demands concerning people		.803

Our new Factor 1, consisting of item bundles 1, 2, 4 and 6, is positively oriented, and crafts a job by increasing social and structural job resources and increasing challenging demands. We labeled this factor, Job crafting Positive.

Factor 2 is more negatively oriented, and concerns Job crafting through decreasing hindering demands. This factor was labeled, Job crafting Negative.

The correlation between Job crafting positive and Job crafting negative was then determined using Pearson Correlation, and showed that the two factors were not correlating (β = -.047, p = .453). From these results it can be concluded that there is not just one Job crafting factor. Job crafting truly exists out of two different approaches, one increasing resources and challenging demands, and the other decreasing hindering demands.

After determining there were two factors, and deciding to measure and test for both these factors in this research, a reliability test was done. The Cronbach's alpha for Job crafting positive was .852. Deleting items would not substantially increase the Cronbach's alpha.

The same was done for Job crafting negative. Here the Cronbach's alpha was .707. It was decided to drop the item "I decide on my own how I do things", since the item correlated negatively with the other items in the scale (-.021), and deleting the item would raise the Cronbach's alpha to .772, making the scale more reliable.
It is not surprising to find two different kinds of Job crafting. Where Job crafting positive is about increasing structural and social resources, and increasing challenging demands, Job crafting negative is about decreasing hindering demands. These are fundamentally different takes on crafting your job. Where one is about enriching your job, learning new skills, being open to new things, etcetera, the other is about making sure your job is not so intense, avoiding demands, and avoiding making decisions.

So again, the original structure by Tims et al. (2012) was not found in the same way in this data. Instead of the 4 expected dimensions, 6 dimensions were found. Two of the dimensions, increasing social demands and decreasing hindering demands, were further specified, and divided up in 2 different dimensions each. Furthermore it was found that Job crafting existed of two approaches, "increasing job resources and challenging demands" and "decreasing hindering demands", and should be investigated separately in this research.

3.3.3 AMO / HIGH-COMMITMENT HRM
While most researchers agree that all the different practices and components of HR systems fall into the AMO model (Jiang et al., 2012), for HRM there is no generic widely accepted scale. But in order to research the concept of HRM, it needed to be specified further, and a certain focus of practices had to be chosen. While the practices are still classified as being in one of the AMO dimensions, we chose to focus on high-commitment HRM.

High-commitment HRM was chosen because it raises Work engagement through supporting the development of skills, motivation and information (Whitener, 2001). It stimulates Work engagement by increasing the job resources of employees through continuous training, selective recruitment, long term compensation, a high degree of freedom in job design and extensive long-term rewards (Alfes et al., 2013; Lepak & Snell, 2002). These practices put employees in a positive work-related state of mind,

because they are able to achieve their work goals, which boosts their Work engagement (Schaufeli & Bakker, 2004).

Another reason to look at high-commitment work practices has to do with Job crafting. Job crafting is not always positive and has to be in line with the organizational goals, or it might create negative side effects for the organization (Berg et al., 2008). Because high-commitment HRM raises the commitment of employees, and the employees will therefore work harder to achieve organizational goals, their behavior and objectives become more in line with the goals of the organization (Jiang et al., 2012). This reduces the risk of negative side effects for the organization when employees craft their job.

To measure HRM within the organization, an appropriate measurement is needed. In order to create this measurement, the list of HR practices of Lepak and Snell (2002) was adapted. The statements that measured high-commitment HRM were transformed so that they were formulated in the first person, measuring the opinions of the employees, rather than asking their supervisors. The item "Compensation/rewards I receive focuses primarily on my short-term performance" was removed from the items, since it was not appropriate for the setting of the research. Teachers at Deltion do not receive (monetary) incentives or bonuses. Another item that was removed was "The training activities I receive/received require an extensive investment of time/money". The reason it was not included is because we do not expect teachers to know the costs of a training they follow. So because the two items are not expected to exist in the sample, it is not relevant to ask them. This leaves 18 items to measure high-commitment HRM.

HRM is divided in several areas of HR practices. These areas were listed under the AMO as following; The dimensions Ability concerns the practice areas Training and Recruitment/selection. Motivation concerns Performance appraisal and Compensation/rewards. Lastly there is Opportunity, which concerns Job design.

Table 6. Table of constructs HRM

1st order	2nd order	3rd order	Items
HRM, a combination of practices in HR systems, aimed at improving organizational effectiveness. These systems include practices aimed to improve the three areas of the AMO model; abilities, motivation and opportunity.	**Abilities**-enhancing HRM practices, aimed to ensure employees are properly skilled for their job through training and recruitment & selection.	Training	The training activities I receive/received are comprehensive
			The training activities I receive/received are continuous
			The training activities I receive/received strive to develop firm-specific skills/knowledge
		Recruitment/ Selection	The recruitment/selection processes for new employees in my team emphasizes on promotion from within
			The recruitment/selection processes for new employees in my team focuses on selection the best all around candidate
			The recruitment/selection processes for new employees in my team focuses on their ability to contribute to our strategic objectives
			The recruitment/selection processes for new employees in my team places priority in their potential to learn
	Motivation-enhancing HRM	Performance appraisal	My performance appraisal is based on input from multiple sources (peers, subordinates, etc)

		My performance appraisal emphasize on my development
practices, aimed to ensure employees have the motivation to work, through performance appraisal and compensation.		My performance appraisal focuses on my contribution to our strategic objectives
		My performance appraisal includes developmental feedback
	Compensation/ Rewards	Compensation/rewards I receive include an extensive benefits package
		Compensation/rewards I receive provides me with incentives for new ideas on how the company can perform better
Opportunity-enhancing HRM practices, aimed to empower employees to use their acquired skills and abilities in order to attain organizational goals, through job design.	Job Design	My job allows me to make my own decisions on how to perform my job.
		My job allows me to make decisions on my own
		My job has a high degree of job security
		My job includes a wide variety of tasks
		My job contains job rotation (= perform different tasks every day)

Note. Items adapted from Lepak and Snell (2002).

Factor analyses and reliability analysis

In the first factor analysis the 18 items mentioned in Table 6 were used. All items in the correlation matrix correlated with at least one other item, and values were not above .9, meaning multicollinearity is not likely. The KMO test gave a value of .785, which is above the recommended value of .6. All communalities are above .4. This means that a factor analysis is suitable with all 18 items.

The factor analysis found 6 items with an eigenvalue above 1. The items explained 28%, 10%, 9%, 8%, 7% and 6% respectively. A Varimax rotation was done to spread variability more evenly among the factors (Abdi, 2003).

Most of the dimensions by Lepak and Snell (2002) were kept, but the dimensions Job design was divided into two factors. Since most of the factors were consistent with Lepak and Snell (2002), the label names for each factor could also stay the same. The different items, factors and the factor loadings can be found in

Table 7. Factor 1 is about Performance Appraisal, factor 2 concerns Recruitment/selection and factor 3 contains practices about Training. Factor 4 and factor 5 both contain practices from the dimensions Job design. The difference between the factors is that factor 4 contains Job design concerned with getting job rotation and a wide variety of different tasks, and factor 5 contains practices that are about the autonomy of an employee, letting them make their own decisions and giving them freedom in deciding how to perform their job. Lastly we have factor 6, which concerns Compensation/rewards.

Table 7. Factor loadings HRM

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
My performance appraisal includes developmental feedback	.839					
My performance appraisal focuses on my contribution to our strategic objectives	.799					
My performance appraisal emphasize on my development	.760					
My performance appraisal is based on input from multiple sources (peers, subordinates, etc)	.748					
The recruitment/selection processes for new employees in my team focuses on their ability to contribute to our strategic objectives		.811				
The recruitment/selection processes for new employees in my team places priority in their potential to learn		.784				
The recruitment/selection processes for new employees in my team focuses on selection the best all around candidate		.773				
The recruitment/selection processes for new employees in my team emphasizes on promotion from within		.569				
The training activities I receive/received are continuous			.868			
The training activities I receive/received are comprehensive			.837			
The training activities I receive/received strive to develop firm-specific skills/knowledge			.628			
My job includes a wide variety of tasks				.850		
My job contains job rotation (= perform different tasks every day)				.677		
My job has a high degree of job security				.598		
My job allows me to make my own decisions on how to perform my job.					.916	
My job allows me to make decisions on my own					.845	
Compensation/rewards I receive include an extensive benefits package						.831
Compensation/rewards I receive provides me with incentives for new ideas on how the company can perform better						.772

When the Factors were defined, item bundles were made by averaging the score on the items that load on the observed factors. These mean scores were again put into a factor analysis to see if the factors together measured HRM. Again all items correlated with at least .3 with another item. The KMO gave a value of .757. One factor was determined that had an eigenvalue above 1. The factor loadings of each item bundle on this one factor can be found in Table 8. This newfound factor explains 39% of the variance. This means that the item bundles together measure the concept of HRM, as expected.

Table 8. Factor loadings item bundles HRM

Item	Factor 1
Performance Appraisal	.736
Recruitment/ Selection	.661
Job design variety	.634
Compensation/ Rewards	.602
Training	.586
Job design autonomy	.513

A reliability analysis was done to determine the Cronbach's alpha of the item scale. The value of this alpha was .838. No significant change in the Cronbach's alpha could be achieved by deleting items of the scale.

HRM on team level

Because we are interested in the perception of HRM of employees on team level, we need to calculate the mean of HRM for each team separately. These means were connected to each specific employee and used to calculate another mean , so that we would get a number which would be an overall representative for the perceptions of HRM of employees on a team level (p = .838).

3.3.4 CONTROL VARIABLES

In order to reduce the risk of confounding effects, several control variables were included in our research.

Education, tenure and age

At the individual level of analysis we controlled for education, tenure and age. The information for these variables was acquired through the surveys send to employees. At the end of the survey, each employee was asked their birth year, how long they were working at Deltion and their highest completed education. Education was included since it influences the skills, abilities and knowledge of employees (Darling-Hammond, 2000). The reason to include tenure is that tenure has had a significant influence on Job crafting in past research (Tims et al., 2013). Lastly there is age, which was included as a control variable since the influence of HR practices can have different effects on employees of different age groups (De Lange et al., 2015).

Leader-member-exchange

In order to measure if the relationship between an employee and a supervisor, the Leader-member-exchange (LMX) was used. As mentioned before, LMX focuses on developing mature leadership relations, so more effective leadership can be achieved (Graen & Uhl-Bien, 1995). LMX can provide employees with more resources through increasing the trust between employees and the supervisor and employees subsequently gaining more responsibility (Deluga, 1998). Since LMX has an influence on resources, and resources have a big influence in Job crafting and Work engagement, it seems important to see if LMX also has an influence on the main variables in this research and if LMX disturbs the

relationships between these main variables. In order to measure LMX, the items from the interviews of Liden and Graen (1980) were used.

A factor analysis was used to see if the items were all suitable to measure LMX with the acquired data. The KMO test was .887. The analysis found 3 factors with an eigenvalue above 1, namely 5.2, 3.0 and 1.1. They explained 35%, 20% and 7,5% respectively. For each of the factors a mean was calculated, and used in a second factor analysis. The second analysis had a KMO of .549, and found one factor. This factor explained 55% of the variance. A reliability test was done to measure if respondents would answer consistently on the items of the scale, and gave a Cronbach's alpha of .662. No substantial changes could be achieved by deleting items from the scale.

Job Performance

Job performance measures how well employees perform their assigned tasks and responsibilities (Kluemper, DeGroot, & Choi, 2013). One way for job performance to influence Work engagement of employees is that when employees perform their job well, they are clearly able to handle the expectancies of their job, and their job demands will not become overwhelming, meaning that they are easier getting work engaged. In order to measure job performance, the items used by Kluemper et al. (2013) in their research.

A factor analysis was also used to measure the items of performance in the data. The KMO test gave a value of .790. All communalities were above .3. This means that the scale is suitable for structure detection. Two items with an eigenvalue above 1 were found, which explained 36% and 21% of the variance. A mean was calculated for both factors, and used in a second factor analysis. Here a KMO of .5 was found, and the eigenvalue explained 63% of the variance. The reliability analysis showed an alpha of .757. Removing items would not improve the alpha.

3.4 METHOD OF ANALYSIS

In order to give an answer on the research question and the hypotheses, several methods need to be applied. Tests need to be applied so it can be established if there exists a mediator or moderator. In order to test the three hypotheses constructed in this research, a mediator and moderator analysis need to be executed.

In mediation there is a hypothesized causal chain. One variable affects a second, which in turn affects a third. The second variable here is the mediator. It intervenes between the predictor and the outcome (Baron & Kenny, 1986). In order to test for mediation, we take the four step approach of Baron and Kenny (1986). Here they conduct several regression analyses to test for the different paths in the equation. As seen in Figure 6, the different paths between the concepts are called a, b and c. In the four step approach simple regression analyses need to be done for path c, a and b. This is done to see if the relationships between these variables are significant. When one of these relationships is not significant, mediation is not likely (Baron & Kenny, 1986). Lastly a multiple regression analysis is done to determine what kind of mediation is happening. Full mediation happens when the independent variable is no

longer significant if the mediator is controlled, and partial mediation is found when the independent variable is still significant (Baron & Kenny, 1986).
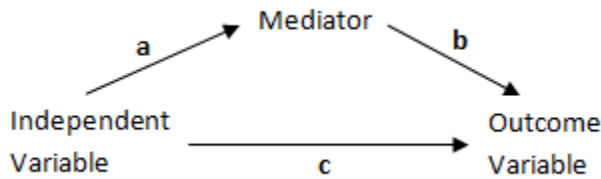

Figure 6. From Baron and Kenny (1986, p. 1176); *Mediator model*

A moderator implies an interaction effect. This can either change the direction or the strength of a relationship. To do this, an interaction effect should be included in the model, and a check must be done to see if this interaction is significant and whether it helps explain the variation in the model better than before (Baron & Kenny, 1986). The moderator can be tested using the following steps. First the independent and moderator variable should be centralized. Then a predictor should be calculated by taking the product of the variables that were just standardized. Lastly a multiple regression should be done on the outcome variable, predictor and both the centralized moderator and independent variable(Baron & Kenny, 1986). This will test the relationships a, b and c from Figure 7.
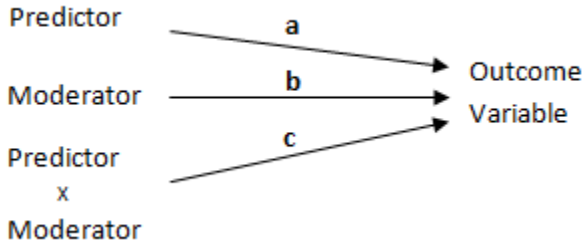
Figure 7. From Baron and Kenny (1986, p. 1174); *Moderator model*

4. RESULTS

In this research the teachers of an intermediate vocational education were investigated to answer the question about to which extent Job crafting mediates or moderates the relationship between HRM and Work engagement. All 738 teachers, originating from 55 different teams, were asked to fill in the survey measuring the main variables, and some control variables like tenure, age, education, LMX and Job performance. Because we wanted to measure mediation and moderation, the techniques of Baron and Kenny (1986) were used.

4.1 CORRELATION BETWEEN VARIABLES

When we look at the correlation between the different variables, we see that several significant correlations exist. These correlations are shown in Table 9. It is important to understand how the different variables relate to each other, since that helps us in understanding our results. Correlation helps us determine the strength of a relationship. Positive correlation means that when one variable increases, so will the other variable, whereas negative correlation indicates that when one value decreases, the other increases.

In Table 9 we see that a positive significant correlation exists between Job crafting positive and LMX. This means that when LMX increases, Job crafting positive increases as well. In practice this means that when the relationship between the supervisor and the employee improves, supervisors are more willing to provide employees with resources and support (Wilkinson, Bacon, & Snell, 2009). This increase in feedback, coaching and trust is crucial in Job crafting, since it provides Job crafting with the resources and space to craft. So the improvement of the relationship between a supervisor and employee makes it easier to Job craft, meaning that when LMX increases, so will Job crafting positive.

We also find a positive significant correlation between LMX and Work engagement, meaning that when LMX increases, so will Work engagement. When the relationship between employees and their supervisor improves, employees will be better supported and trusted by their supervisor. When employees receive more trust, and subsequently tasks that involve more responsibility and are more challenging, it becomes easier for employees to become vigorous about their job. They become determined to succeed in these tasks, not wanting to disappoint their supervisor. The increase in trust and tasks will also make them more proud and enthusiastic about their job, because of the increase in responsibility they received.

The correlation between Job crafting positive and performance is also positive and significant. The effect here is interesting, because it shows that when employees use more Job crafting positive, their performance will increase as well. The reason is that because of Job crafting, employees are better able to use their resources effectively, and are better able to handle their job demands, because these job demands and resources are aligned with the abilities and needs of employees. This proves to be beneficial for the performance of employees (Bakker et al., 2012; Tims & Bakker, 2010).

Lastly we want to highlight the negative significant correlation between Job crafting positive and age. The correlation we find means that when age increases, Job crafting positive will decrease. So when

employees get older, they will make less use of Job crafting. The reason for this effect could be that older employees already have more knowledge, skills and resources, making it less necessary for them to use Job crafting. When you are already sufficiently able to effectively manage and utilize your resources, or you are already satisfied with your benefits or your work situation, is it important to effectively try to improve them even more?

Table 9. Correlation table variables

	N	LMX	Perfor-mance	Age	Tenure	Education	HRM	Job crafting positive	Job crafting negative	Work engage-ment
LMX	252	-								
Performance	252	.267**	-							
Age	241	-.053	-.074	-						
Tenure	241	-.030	-.006	.625**	-					
Education	244	-.048	-.027	.019	.017	-				
HRM	235	.210**	.090	-.151*	-.058	-.068	-			
Job crafting positive	252	.339**	.279**	-.266**	-.205**	-.100	.243**	-		
Job crafting negative	252	.001	-.088	.043	.073	-.015	-.040	-.047	-	
Work engagement	252	.404**	.301**	-.110	-.153*	-.039	.238**	.444**	-.053	-

Notes: **Pearson Correlation**

** Correlation significant at the 0.01 level (2-tailed)

* Correlation significant at the 0.05 level (2-tailed)

4.2 MEDIATOR ANALYSIS

Hypothesis 1 stated that *Job crafting partially mediates the positive relationship between HRM and Work engagement .*To test this hypothesis, a mediator analysis was done. This analysis consists of four steps.

4.2.1 JOB CRAFTING POSITIVE

Because we discovered that Job crafting exists of two different approaches, the mediator analysis has to be performed twice. The first analysis is done with Job crafting positive.

Control variables

First we look at how the control variables influence Work engagement. The different values describing the relationship between the control variables and Work engagement can be found in Table 10, Model 1. We see that LMX has a strong positive significant influence on Work engagement (β = .333, p < .001), meaning that when the relationship between an employee and his supervisor improves, the Work engagement of that employee will also improve. Performance also has a positive significant influence on Work engagement (β = .190, p < .01), meaning that when employees improve their performance, they also become more work engaged. Lastly there is tenure, which has a negative significant influence on

Work engagement (β = -.158, p < .05). This implies that the longer employees work at an organization, the less work engaged they become.

Effect of HRM on Work engagement

In the first step we measure the effect that HRM has on Work engagement. In order for mediation to be able to occur, this relationship has to be significant. When we look at Table 10, Model 2, we see that HRM has a positive significant influence on Work engagement (β = .153, p < .05). So when HRM increases, so will the Work engagement of employees.

Table 10. Regression results for Work engagement as the outcome

	Model 1	Model 2	Model 3	Model 4
LMX	.333****	.304****	.252****	.235****
Performance	.190***	.184***	.138**	.137**
Age	.044	.067	.093	.107
Tenure	-.158**	-.163**	-.133*	-.139*
Education	-.018	-.005	-.004	.004
HRM	-	.153**	-	.115*
Job crafting Positive	-	-	.288****	.269****
R²	.195	.217	.261	.273

Notes: **N = 231 due to list wise deletion of missing values.**
*p < 0.10, **p <0.05, ***p < 0.01, ****p < 0.001

Effect of HRM on Job crafting positive

The second step involves the relationship between HRM and Job crafting positive. This relationship also has to be significant, in order for mediation to occur. When we look at Table 11, Model 1, the relationship between the control variables and Job crafting positive are shown. We see here that LMX and Performance both have a significant positive effect on Job crafting positive (β = .281, p < .001, β = .180, p < .01, respectively). LMX implies that the better the relationship between a supervisor and his employee is, the more positive Job crafting the employee will perform. For Performance it means that the better an employee performs, the more he will make use of positive Job crafting. Age has a significant negative effect on Job crafting positive. This implies that the older an employee is, the less he will craft his job. This is because an older employee often has better developed job resources and better benefits, lowering the need for job crafting.

Table 11, Model 2 shows the relationship between HRM and Job crafting positive. Since this relationship is significant (β = .141, p < .05), it means that when the amount of HRM increases, Job crafting positive will as well.

Table 11. Regression results for Job crafting Positive as the outcome

	Model 1	Model 2
LMX	.281****	.225****
Performance	.180**	.175**
Age	-.170**	-.148*
Tenure	-.085	-.091
Education	-.046	-.034
HRM	-	.141**
R²	.204	.223

Notes: **N = 231 due to list wise deletion of missing values.**
*p < 0.10, **p <0.05, ***p < 0.01, ****p < 0.001

Effect of Job crafting positive on Work engagement

The third step of the mediation analysis entails checking if the relationship between Job crafting positive and Work engagement is significant. When we look at Table 10, Model 3, we see that a strongly significant positive relationship exists between Job crafting positive and Work engagement (β = .288, p < .001), meaning that the more an employee uses positive Job crafting, the more the employee will become work engaged.

Both HRM and Job crafting positive

The last step in the mediation analysis has us checking what happens to the significance of both HRM and Job crafting positive when they are both included in the model. These values can be seen in Table 10, Model 4. Here we see that both HRM (β = .115, p < .10) and Job crafting positive (β = .269, p < .001) remain significant, which implies that mediation is indeed taking place. Partial mediation can be assumed since the independent variable, HRM, is still significant. When HRM would have turned insignificant after we added the mediator, Job crafting positive, to the model, it would have meant that full mediation would have been occurring. Since HRM remained significant, it means that while most of the relationship between HRM and Work engagement is explained through Job crafting positive, HRM still has a residual direct influence as well, meaning that partial mediation of Job crafting positive on the relationship between HRM and Work engagement is occurring.

We also see that LMX does remain strongly significant in this model (β = .235, p < .001), meaning that there are other variables explaining the relationship between HRM and Work engagement beside Job crafting positive, further confirming our finding of partial mediation of Job crafting positive.

Hypothesis

The requirements for a significant relationships between HRM and Job crafting positive, Job crafting positive and Work engagement and HRM and Work engagement were all met. Since both HRM and Job crafting positive continue to be significant in Model 4, the last step of our analysis, we can assume that partial mediation is taking place. This means that even though HRM still has a residual direct influence on Work engagement, the relationship through Job crafting positive had a much stronger influence when explaining Work engagement. In other words, when HRM provides the resources for Job crafting

positive to craft, this will work engage employees more than just offering of HRM to employees would have done. So HRM provides the job resources that are necessary for Job crafting, and Job crafting in turn will have a strong influence on Work engagement, making employees more work engaged. However, we also see that LMX has a strong influence on Work engagement. This effect is stronger than the effect HRM has on Work engagement, meaning that the influence of LMX might be more relevant than the influence of HRM or that LMX might be another strong mediator on the relationship between HRM and Work engagement.

Returning to our first hypothesis; Job crafting *partially mediates the positive relationship between HRM and Work engagement,* we can now say that this hypothesis is supported for Job crafting positive as the mediator.

4.2.2 JOB CRAFTING NEGATIVE

Because of the divide we found in Job crafting, we now repeat the mediator analysis. In this second mediator analysis we examined the influence of Job crafting negative. The same control variables were used as were used in the first mediator analysis (see Table 13, Model 1). The first step of the analysis, measuring the effect of HRM on Work engagement, also did not change (see Table 13, Model 2) from the results we found in our first analysis.

Effect of HRM on Job crafting Negative

The second step in the mediator analysis involves the relationship between HRM and Job crafting negative. Again, this relationship has to be significant in order for mediation to occur. When we look at Table 12, Model 1, we find the effects the control variables have on Job crafting negative. None of the control variables have a significant influence on Job crafting negative. When we look at Model 2, we see that the relationship between Job crafting negative and HRM is also not significant ($\beta = -.027$, $p = .691$). This means that mediation is not able to occur, since it requires a significant relationship between the independent variable and the mediator. We however still continue with step 3 and 4, since we are interested in the relationship between the mediator and the outcome variable.

Table 12. Regression results for Job crafting Negative as the outcome

	Model 1	Model 2
LMX	.082	.087
Performance	-.102	-.101
Age	-.039	-.043
Tenure	.109	.110
Education	.037	.035
HRM	-	-.027
R^2	.022	.022

Notes: N = 231 due to list wise deletion of missing values.

*p < 0.10, **p <0.05, ***p < 0.01, ****p < 0.001

Effect of Job crafting negative on Work engagement

The third step of the mediation analysis entails checking if the relationship between Job crafting negative and Work engagement is significant. When we look at Table 13, Model 3, we see that no significant relationship exists between Job crafting negative and Work engagement (β = -.027, p = .656), further confirming that Job crafting negative cannot be a mediator between HRM and Work engagement.

Both HRM and Job crafting negative

The last step in the mediation analysis has us checking what happens to the significance of both HRM and Job crafting negative when they are both included in the model. These values can be seen in Table 13, Model 4. Here we see that while HRM does have a significant relation to Work engagement (β = .152, p < .05), Job crafting negative does not (β = -.023, p = .701). The R^2 of Model 4 is the same as the R^2 of Model 2, meaning that adding Job crafting negative to Model 4 does not improve the amount of variance explained by Model 2. This also indicates that Job crafting negative has no (significant) influence on Work engagement.

Table 13. Regression results for Work engagement as the outcome

	Model 1	Model 2	Model 3	Model 4
LMX	.333****	.304****	.335****	.306****
Performance	.190***	.184***	.187***	.182***
Age	.044	.067	.043	.066
Tenure	-.158**	-.163**	-.155**	-.161**
Education	-.018	-.005	-.017	-.005
HRM	-	.153**	-	.152**
Job crafting Negative	-	-	-.027	-.023
R^2	.195	.217	.196	.217

Notes: N = 231 due to list wise deletion of missing values.
*p < 0.10, **p <0.05, ***p < 0.01, ****p < 0.001

Hypothesis

In this mediator analysis, we found that there were no significant relationships between HRM and Job crafting negative and between Job crafting negative and Work engagement. This means that the conditions for mediation were not met, and it is impossible for mediation to take place. Accordingly, the mediation hypothesis when using Job crafting negative as the mediator was not supported by the data, and therefore hypothesis 1 is partially rejected.

4.3 MODERATOR ANALYSIS

Our second hypothesis was; *Job crafting positively moderates the positive relationship between HRM and Work engagement such that the effect of HRM on Work engagement strengthens when the level of Job crafting increases.*

The third hypothesis was; *Job crafting negatively moderates the positive relationship between HRM and Work engagement such that the effect of HRM on Work engagement weakens when the level of Job*

crafting increases.

Both these hypotheses concern whether and how Job crafting moderated the positive relationship between HRM and Work engagement. In order to test for these hypotheses, a moderator analysis was conducted.

Control variables

Model 1 in Table 14 shows how the different control variables affect Work engagement. Here we see that tenure (β = -.158, $p < .05$), performance (β = .190, $p < .01$) and LMX (β = .333, $p < .001$) all have a significant effect on Work engagement, while age (β = .044, $p = .568$) and education (β = -.018, $p = .769$) do not.

Job crafting positive

When we look at the regression analysis in Table 14, Model 2, we see that HRM has a significant positive regression (β = .104, $p < .10$). This means that the more HRM is practiced, the more employees will become work engaged. There also is significant positive regression at Job crafting positive (β = .273, $p < .001$). This indicates that Job crafting positive also has a positive influence on Work engagement. So the first two conditions for moderation are met. However, when we look at the predictor, HRM x Job crafting positive, we see that even though the predictor has a very small positive effect, the effect is not significant (β = .068, $p = .246$). Because no significant effect is found, it leads to the conclusion that Job crafting positive is not a moderator on the relationship between HRM and Work engagement.

Other variables worth noting in Model 2 are Tenure, performance and LMX. Tenure has a negative effect in this model, meaning that the longer an employee works at a company, the less work engaged he becomes. Both performance and LMX have positive effects. For performance this means that the more an employee perceives his performance as good, the more work engaged he will become. LMX tells us that the better the relationship between the supervisor and his employees, the more work engaged employees become.

Table 14: Regression results testing the moderation on Work engagement.

	Model 1	Model 2	Model 3
Age	.044	.102	.074
Tenure	-.158**	-.145**	-.165**
Education	-.018	.001	-.003
Performance	.190***	.136**	.185***
LMX	.333****	.235****	.312****
HRM	-	.104*	.139**
Job crafting Positive	-	.273****	-
HRM x Job crafting Positive	-	.068	-
Job crafting Negative	-	-	-.015
HRM x Job crafting Negative	-	-	-.078
R^2	.195	.277	.223

Notes: N = 231 due to list wise deletion of missing values.*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$, ****$p < 0.001$

Job crafting negative

A second moderator analysis was done to investigate whether Job crafting negative has a moderation effect on the relationship between HRM and Work engagement (Table 14, Model 3). In this model we see that HRM has a significant positive effect (β = .139, p < .05). Job crafting negative however, does not (β = -.015, p = .805). This means that the first two conditions for a moderator effect are not met, and moderation will not be able to take place. This is why the predictor, HRM x Job crafting negative, is also not significant (β = -.078, p = .198). From the results in Model 4 we can conclude that Job crafting negative does not have a moderation effect on the relationship between HRM and Work engagement.

Hypotheses

Our second hypothesis was that *Job crafting positively moderates the positive relationship between HRM and Work engagement such that the effect of HRM on Work engagement strengthens when the level of Job crafting increases.*
In the moderator analysis we found that there was a significant positive effect for both HRM and Job crafting positive, but the predictor, HRM x Job crafting positive, was not significant. We do see a small positive effect (β = .068, p = .246) that would fit our hypothesis, since it states that both HRM and Job crafting need to be used, in order for HRM to have a strong effect on Work engagement. But it is very small, and it is not significant. Since we do not find a (significant) effect for the predictor of either Job crafting positive or Job crafting negative, we say that there is no positively moderating effect of Job crafting on the relationship between HRM and Work engagement, and we have to reject our second hypothesis.

The third hypothesis of this research was; *Job crafting negatively moderates the positive relationship between HRM and Work engagement such that the effect of HRM on Work engagement weakens when the level of Job crafting increases.* In the moderator analysis with Job crafting negative we find that only HRM has a significant influence, and Job crafting negative does not. The predictor also is not significant. The predictor does show a small negative effect of Job crafting negative on the relationship between HRM and Work engagement, which would support our third hypothesis, indicating that the more Job crafting negative is used, the weaker the effect of HRM on Work engagement will become. However the effect is so small, and insignificant, which means that we also have to reject our third hypothesis. Again, the predictors of both the moderator analysis with Job crafting positive, and the analysis with Job crafting negative did not show a significant effect. This has us concluding that Job crafting does not have a moderator effect on the relationship between HRM and Work engagement.

5. DISCUSSION

5.1 DISCUSSION

We started out wanting to research what the effect of Job crafting was on the relationship between HRM and Work engagement. The results found in this study suggest several implications for both research and practice. To give a clear overview of these implications, we divided the discussion section into two parts.

5.1.1 THEORETICAL IMPLICATIONS

One factor Work engagement

First off, we find just one overlapping factor in our analysis of Work engagement, instead of the 3 sub-factors, vigor, dedication and absorption, mentioned in literature. This means the items we used to measure the concept of Work engagement all loaded on one single factor, which goes against the notion of Schaufeli and Bakker (2003). So why do we find just one factor? The reason might be that all three dimensions are very closely related and influence each other. Especially the items from vigor and dedication load highly on Work engagement (Table 2). We think that employees found it hard to make a distinction between the dimensions, since the items asked in the survey are closely related, and occur subsequently. For example, "feeling like going to work in the morning" and "being enthusiastic about their job", are closely connected, because feeling like going to work in the morning is tied to being proud or enthusiastic about their work. If an employee is enthusiastic about his work, he will most likely not have a problem with wanting to go to work. Absorption is also closely tied to vigor and dedication, because, as we stated earlier, absorption can be seen as a logical result of these two dimensions. When employees feel good about their work, and are in a good state of mind, it is easier for them to get into a flow of work, where one is swept away and absorbed by his work.

What this means for future research is not that one should automatically assume that Work engagement is just one factor. More research has to be done towards the different settings that exists within organizations, to see if the UWES-9 holds up within these settings. Researchers should think about using the longer UWES scale when researching organizations within a similar setting as the setting we have here, since that scale might be able to make clearer distinctions between the different dimensions.

Influence of the employee himself and LMX

As said before, we wanted to research what the effect of Job crafting was on the relationship between HRM and Work engagement. The underlying idea of the research is that we want to research who has the stronger influence on Work engagement; the organization/employer or the employee? When we look at our results they indicate that Job crafting positive has a stronger influence than HRM has on Work engagement. Job crafting positive is more significant and the effect (the standardized beta) it has is bigger. This leads to the conclusion that the employee himself has a stronger influence on his own Work engagement than the organization or employer does.

This finding is further supported by the effect of LMX we find in our analyses, which proved to be strongly significant. The effect of LMX on Work engagement was more significant and stronger than the

effect of HRM on Work engagement. Since LMX stands for the relationship between the employee and his supervisor, it concerns itself with matters on a day to day basis. LMX happens at lower levels of the organization. HRM on the other hand, is more concerned with long-term leadership, and the overall picture, instead of management on a day-to-day basis. Decisions are made at a higher level in the organization, by higher management. Since the effect of LMX was stronger than the effect of HRM, we can say that Work engagement is stronger influenced by factors that happen daily, within that relationship between the employee and his supervisor, than by factors that originate from higher up, at higher management, or the relationship between the employee and the organization. So again, the influence of the employee himself has on Work engagement is a stronger effect than the influence that the organization can have on Work engagement. This means that in literature and research, it would be wise to (also) look at the employee behavior, the employee himself and management on a day-to-day basis when researching topics like Work engagement, rather than just focusing on the organization and management from higher up.

HRM and Job crafting

We also find that Job crafting mediates between HRM and Work engagement, but it does not have a moderating effect. The moderating effects we find are insignificant, which leads us to conclude that Job crafting has no impact on the relationship between HRM and Work engagement. But since Job crafting does mediate between HRM and Work engagement, it is important to look at how HRM relates to Job crafting.

First, we want to argue that it is very important how employees perceive and use HRM. We say that Job crafting (positive) needs to be used by employees in order for HRM to have the desired effect, and the expected outcomes. When employees do not make use of Job crafting, the translation from HRM to desired outcomes will not occur. In other words, Job crafting can be seen as a translation of HRM to the desired outcomes.

Second, we state that it is not a condition that HRM has an influence. Job crafting is the key to having HRM translated to results and outcomes. That does not mean that Job crafting improves the effect of HRM on Work engagement and other outcomes, it ensures that HRM has an influence and works altogether. So HRM needs Job crafting in order to produce outcomes. Employees taking up HRM and using it through Job crafting is one way in which HRM can translate to outcomes.

It is true that we do find a significant relationship between HRM and Work engagement, but we are of the opinion that this relationship is enabled by other factors. These factors are most likely passive, where Job crafting is an active behavior. The behavior of employees is very important in ensuring whether HRM has an influence on Work engagement. Previous studies did not research behavior of employees as a mediator, but rather used cognitions or affects, like for example affective commitment or perceived organizational support. In our research we show that it is not just important to look at cognitions, knowledge or resources, but that it is also very important to look at what employees do with their job resources. The way employees use their job resources has a significant impact and is very important.

Research setting

So Job crafting positive has a bigger influence on Work engagement than HRM has. But is this also the case in other research settings? Our research was done within an educational facility, which offers a lot of freedom in terms of designing your own job. Challenging job demands for example, are easy to shape and mold, since teachers are able to draft their own teaching plan or decide in what order topics are treated and discussed. There is a lot of professional space within educational facilities and the kind of people that teach in these educational facility are mostly professionals. They received higher professional education, so one can assume that they ask for advice and feedback, and that they are able to handle the feedback that they receive. HRM in this environment might be considered more bottom-up, supporting Job crafting, whereas in other environments, HRM might be more top-down driven. Furthermore, Job crafting might be inherent to the nature of the job. When you are not able to use Job crafting, you most likely will not succeed in an educational job environment. Employees who stick too strictly to their job description are not able to anticipate things, and are not able to handle their job resources and demands effectively. So teaching requires employees to change the task boundaries of their job, and in order to effectively teach and handle students in a class, the interactions and relationships with the students have to be kept up to date and effective as well.

Because of these facts, teachers might be the perfect group to research Job crafting, since Job crafting might be inherent to the teaching job, is most likely present within the organization and is likely to be supported through bottom-up HRM, or at least given the space to be enacted.

Two kinds of Job crafting

The context of our research might also explain why we find two different kinds of Job crafting and why one of these types of Job crafting has no effect on Work engagement.

The factor analyses in this research showed that in our data we found support that Job crafting did not exist of the 4 dimensions proposed by (Tims et al., 2012). Instead we found that there were two different kinds of Job crafting; Job crafting positive and Job crafting negative. The reason we found this distinction is not that surprising; where Job crafting positive focuses on increasing resources and challenging demands, Job crafting negative focuses on decreasing hindering demands. So where positive Job crafting has a positive relationship with for example Work engagement, an increase in resources and challenging demands will result in an increase in Work engagement, negative Job crafting has the opposite effect. In negative Job crafting the focus is on decreasing hindering demands. So the relationship between negative Job crafting and Work engagement works so that when hindering demands decrease, Work engagement will increase.

The educational setting of our research explains the distinction between the two types of Job crafting, but also why we did not find a significant effect of Job crafting negative on Work engagement. Teachers have more influence on their job resources and their challenging demands due to the high degree of freedom and professional space in the educational setting, whereas their hindering demands might be harder to influence. The dimension "hindering demands concerning people that is part of Job crafting negative" is a good example here, since a teacher cannot have less contact with students, or avoid the

problems of students. External influences such as crowded classes, standing in front of students or having to deal with the problems of students cannot be changed or avoided as easily.

In sectors where there is a lot of interaction between the customer and the employee, or the dependency of customers upon employees is high, it becomes very hard to craft hindering demands. This is because the relationship between employees and customers is necessary to facilitate the service offered by the organization, making it harder or even impossible to reduce the contact between employees and customers (and therefore craft this part of the job).

Another reason for Job crafting negative not to have an effect on Work engagement in educational settings is because of rules, regulations and the administrative side of the job. Rules are in place, and have to be followed constantly. It is not easy to change or craft these rules, so it might be logical if employees are tired of trying to craft (around) them, and gave up on trying to change these parts of their job, neglecting to decrease their hindering demands.

So for organizations where the dependency of customers on employees is high, Job crafting negative is less likely to be found, since minimizing contact with people is almost impossible. When research is done within a setting such as the setting we researched here, we recommend that the focus of the research is on Job crafting positive, since Job crafting negative proved hard enact, and will most likely have no theoretical value or impact on the variables researched.

No moderation

So why is Job crafting not a moderator? We expected to find a moderation effect of Job crafting on the relationship between HRM and Work engagement when we started this research, but this expectation was not met. While we did find that Job crafting positive is a mediator, it was not deemed a moderator since no interaction effect of Job crafting was found on the relationship of HRM and Work engagement. So even though both HRM and Job crafting positive have a significant effect on Work engagement when applied or researched on their own, Job crafting did not influence the relationship between HRM and Work engagement. This means that the relationship between these three variables is not that simple, and other variables have to be taken into account when they are further researched.

Not finding a negative moderator effect implies that Job crafting is not a substitute for HRM. The resources provided by Job crafting cannot replace the resources offered through HRM. So when a company has a bad HRM policy, Job crafting will not be able to account for this bad policy. In other words, the resources provided by HRM and Job crafting are distinctly different, and both have their own role to play in raising Work engagement. HRM and its resources are needed to create the professional space in which Job crafting is able to operate, and need to stimulate or give the opportunity to employees to Job craft. Job crafting meanwhile, has resources that are necessary for translating the intentions of higher management into day-to-day management, and shape these resources in such a way that they fit the preferences and skills of the employee. This means that both HRM and Job crafting are important when increasing Work engagement. The way the relationships between these variables work is that HRM enables or stimulates Job crafting, and Job crafting in turn increases Work engagement. The direct relationship that exists between HRM and Work engagement is explained through other variables. The scenario where the relationship between HRM and Work engagement is

either strengthened or made weaker by Job crafting does not occur, since Job crafting does not make HRM more effective in increasing the Work engagement of employees (so no moderation effect), it ensures that HRM has an effect at all on Work engagement (the mediation effect).

Bottom-up vs. top-down

The theoretical implication here is not that we find that HRM is useless in this equation, but that HRM has a more indirect effect through Job crafting. In our research we chose to research Job crafting as a separate variable, not covered by HRM. We proposed that even though the concepts are likely to have a strong influence on each other, the executors or initiators of these practices are different people, in different roles and layers of the organization. Due to these differences, we found that a different approach to HRM might be in order. More thought should be given to managerial HR and employee driven HR. In settings such as the one in our research, where employees have more discretion and professional space, HRM has to function more as a bottom-up approach, where it supports employees in crafting their job. This is the opposite of a control environment, where HRM is top-down and leaves less to no room for endeavors such as crafting a job. A better distinction should be made between top-down driven HRM and bottom-up HRM.

This means that in a setting which is more commitment based, HRM practices might not be as important as we thought. Day-to-day management, LMX and the proactive behavior of employees may be much more influential.

5.1.2 PRACTICAL IMPLICATIONS

But apart from the theoretical implications of this research, there are also practical implications that can be derived from our research. What do managers need to take away from the results of our research?

It turns out that HRM might not to be as important as people assumed. At least, not in the way HRM is mostly used and portrayed now. HRM is necessary to enable Job crafting, since it creates the professional space, environment and resources people need in order to use Job crafting effectively. So instead of focusing on different HR policies and trying to engage employees through different HR practices, managers need to focus on enabling Job crafting. This means that a shift from managerial HRM to employee-driven HRM needs to occur. HRM should be more bottom-up driven, instead of top-down. Instead of leadership behavior, the focus needs to be put on what employees themselves can do, in order to be motivated and stimulated and to feel good about their work. Ideals, ambitions and preferences need to be included to keep the employee engaged. HRM should be aimed in such a way that it gives employees the opportunity and incentives to craft their jobs.

We started this research with wanting to increase Work engagement, and seeing who had the most influence to do this. Our results show that there are several ways to increase Work engagement, since HRM, Job crafting positive, LMX and performance all have a significant positive effect. Performance has a positive influence, meaning that when the performance of employees is increased, Work engagement will increase as well. The reason for this is that when the performance of employees increase, they are better able to handle their responsibilities and perform their tasks, This will lead to them better handling

job resources, and job demands not getting overwhelming, meaning that it becomes easier for them to become work engaged.

We find that the employee himself has the most influence on his own Work engagement, since Job crafting positive and LMX have the highest significance, and the biggest effect. The effect of LMX is stronger and more significant than the effect HRM has on Work engagement. This leads us to argue that when organizations want to improve the Work engagement of employees, it would be most wise to focus their efforts on LMX instead of HRM. Like we mentioned in our theoretical implications, Work engagement is more strongly influenced by the employee himself, than by the organization. An active behavior of employees is required to increase this engagement, meaning that the organization cannot simply tell employees to be more engaged. Job crafting and LMX both fit into this picture, since Job crafting is a self-initiated behavior, and LMX is about the feelings of the employee. LMX can be increased by improving the relationship between the employee and his employer. But what can an organization do to stimulate Job crafting?

There are several ways in which Job crafting positive can be stimulated. The variables that we found had a significant effect were LMX, performance and HRM. Because of the positive effect that HRM has on Job crafting positive, it can improve Job crafting positive through offering resources to employees. HRM can provide employees with training, performance appraisals, team working or feedback, through which employees receive more resources they can craft, stimulating Job crafting.
LMX also has a positive significant effect on Job crafting positive. Since LMX is concerned with effective leadership through a good relationship between supervisors and their employees, organizations should improve these relationships when wanting to stimulate employees to use Job crafting. Improving the relationships between supervisors and their employees will result in more responsibility and room for employees to exercise Job crafting. When employees are trusted and supported to job craft, we suspect Job crafting will increase.

Another variable that had a significant influence on Job crafting positive was performance. A significant positive correlation exists between performance and Job crafting positive. We argue that employees who perform better at their job, will use more Job crafting. This is because employees who perform well are better able to handle their job demands, and use their job resources, and will therefore be better able to craft these job resources and demands.

5.2 LIMITATIONS AND FUTURE RESEARCH

Limitations

When looking at the findings of this research, one must keep in mind that it is important to take note of several limitations.
The biggest limitation of this research is that we did a cross sectional study. Because the data was collected at one point in time, a snapshot was made. The problem here is that while this snapshot shows the outcome and other variables of interest, it does not give an indication about the sequence of events,

meaning that we do not know in what direction the relationship works. This makes it impossible to infer causality.

Furthermore, data was gathered through a self-reported questionnaire. Normally this could lead to colored data, because employees have to rate their, for example, own performance. However, the questionnaires used were validated, and most constructs were best measured through self report, since other ways of collecting data for these constructs could distort the data. This is because Work engagement, LMX and performance are based on how the employee himself feels and Job crafting has to be self-initiated by employees. Only HRM could prove to be a problem here, but if we frame HRM as the employees' perception of HR practices on a team level, self-reporting should be the best way to research this. One can argue that at least two data sources should be questioned in order to rule out the validity threats of self-report. However, Levy and Williams (2004) say that the performance ratings and other perceptions of supervisors can be just as biased as the self-report measure we use here. We however do have to keep in mind that self-rated performance can be biased upwards, meaning that employees can be less work engaged, or performing less Job crafting than what they reported in the questionnaire.

Another limitation of our study is our group of respondents. The mean age of this group is almost 50 years of age, meaning that the overall group can be classified as an older population. This could be a limitation, since the majority of the working population is aged between 25 and 45 years (CBS Statistics Netherlands, 2016) . Since the mean age of our respondents (49 years) lies above that age group, this may affect the results that we found.

Next we have the degree to which we can generalize the findings of our research. We did reach a sample size that gave us enough statistical power to do our research, but that does not necessarily mean that we can generalize the findings of our research throughout literature and practice. The research was conducted in a specific context, namely, education. While we may be able to extent our findings to some sectors, there are also sectors that are very different. We therefore say that we might be able to extent our findings towards organizational settings where professionals have a lot of professional space. In other words, while we might generalize our findings towards commitment-based organizational environments, we cannot generalize our findings towards control-based organizational environments.

Future research

Since Deltion is an educational institution in the Netherlands, it might be representative for other educational institutions, but other corporate companies have very different corporate cultures, company goals, etcetera. This means that differences may occur when we extrapolate our findings to an organization that is in another branch, where different organizational goals and focuses may be set. This is why we recommend future research to examine different companies, in different branches, to see if the same effects and relationships are found there. We already mentioned before that more research should be put into the distinction between control-based top-down HRM, and commitment based bottom-up HRM. In an organization where the customers are highly dependent upon employees, HRM might need to be handled differently than in organizations where this dependency is not as high.

The same can be said for countries, since cultural differences between countries may shift the focus or drivers employees have. In order for the data to be generalized over a bigger population, extending to differently focused companies or even other countries, more research should be done with a wider variety of companies.

This research can be used as a starting point for comparable research, since we found a few interesting findings. When conducting our research we found that there was another mediator/moderator, LMX, which had a stronger effect on Work engagement than HRM and existed next to Job crafting. Furthermore it might be interesting to see if new research could replicate the key findings of this research when they are for example using different HR practices. We focused on high-commitment HRM, but other HR practices might yield different results. One factor that is very interesting for future research is the measuring of active behavior of employees when researching Work engagement or other related concepts. Most research focuses on resources, cognitions or knowledge, instead of looking at behavior of employees or in the case of this research, the way employees use or handle job resources.

Lastly , future research is necessary to further research the relation between HRM, Job crafting and Work engagement needs to be further researched. This research showed that scales and models from the existing literature could not just be applied to our research. For example, our data just found one factor explaining Work engagement, instead of the earlier found three by Schaufeli and Bakker (2003). Other examples include the twofold division of Job crafting and the 6 factors of high-commitment HRM, instead of the proposed four. Since our data did not reproduce the expected findings from literature, as mentioned in the discussion, a remark should be added to existing literature, and more research is needed to confirm or disprove our findings.

6. CONCLUSION

We started this research wanting to answer the following research question; *To which extent does Job crafting mediate or (negatively or positively) moderate the relationship between HRM and Work engagement?* Through this question we attempted to determine who had the biggest influence on Work engagement, either the employee or the employer. We did this by executing a mediator and a moderator analysis. While we did find that Job crafting was a partial mediator between HRM and Work engagement, no moderating effect could be established. So even though there are most likely other variables mediating or moderating the relationship between HRM and Work engagement, we found that Job crafting positive did indeed partially mediated the relationship. Job crafting however did not moderate the relationship between HRM and Work engagement. So the answer to our research question is that Job crafting has a partial mediating effect on the relationship between HRM and Work engagement, but there is no moderating effect.

Our research found that the active behavior of employees was most important when wanting to influence Work engagement, providing the new insight that apart from the well researched knowledge, cognitions and resources, the actual behavior and the way employees handle job resources is truly important when researching outcomes like Work engagement. So who has the most influence on increasing the Work engagement of employees? The employee himself.

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APPENDIX

UNIVERSITEIT TWENTE.

Enquête Werkbeleving & Human Resource Management

Welkom

Het Onderzoek
Deze vragenlijst – die uitgevoerd wordt door de Universiteit Twente – gaat over uw werkbeleving en de human resource management praktijken (zoals werving, selectie, trainingen en functioneringsgesprekken) die binnen Deltion aangeboden worden. In deze vragenlijst wordt gevraagd naar hoe u uw werk binnen Deltion beleeft, manieren waarop u uw werk inricht en de wijze waarop u hierbij door Deltion word ondersteunt. Uw bijdrage is belangrijk omdat dit Deltion uiteindelijk in staat stelt om u en uw collega's goed te ondersteunen. Vandaar dat we u willen vragen uw persoonlijke ervaringen als docent bij Deltion via deze vragenlijst te delen. Het invullen van deze vragenlijst zal ca.20 minuten in beslag nemen.
Aan het eind van de vragenlijst verloten we // tegoedbonnen van //.

Vertrouwelijkheid en anonimiteit
Iedereen die deze vragenlijst ontvangt moet zich vrij kunnen voelen om de vragenlijst in te vullen. Daarom zijn vertrouwelijkheid en anonimiteit van het grootste belang. Er zal volstrekt vertrouwelijk met de ingevulde vragenlijst worden omgegaan. Individuele vragenlijsten komen nooit bij Deltion terecht, maar worden direct doorgestuurd naar de Universiteit Twente. De rapportage die door de Universiteit Twente gemaakt wordt zal volstrekt anoniem zijn. Er zal nooit gerapporteerd worden op een wijze waardoor resultaten tot op individueel niveau herleid kunnen worden.

Vragen?
Heeft u vragen over dit onderzoek dan kunt u contact opnemen met Ilana Oudkerk Pool (zie contactgegevens). Tevens is het mogelijk om opmerkingen te plaatsen op het einde van deze vragenlijst.
Bij voorbaat hartelijk dank voor uw bijdrage!

Contactgegevens:
Ilana Oudkerk Pool
Student aan de Universiteit Twente en stagiair Deltion Academie

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UNIVERSITEIT TWENTE.

Enquête Werkbeleving & Human Resource Management

1. Werkbeleving

De volgende uitspraken hebben betrekking op hoe u uw dagelijks werk beleeft.

Wilt u aangeven in hoeverre u het met de volgende stellingen eens bent (1 = zeer mee oneens t/m 5 = zeer mee eens)?

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
Op mijn werk bruis ik van energie.	○	○	○	○	○
Als ik werk voel ik me fit en sterk.	○	○	○	○	○
Ik ben enthousiast over mijn baan.	○	○	○	○	○
Mijn werk inspireert mij.	○	○	○	○	○
Als ik 's morgens opsta heb ik zin om aan het werk te gaan.	○	○	○	○	○
Wanneer ik heel intensief aan het werk ben, voel ik mij gelukkig.	○	○	○	○	○
Ik ben trots op het werk dat ik doe.	○	○	○	○	○
Ik ga helemaal op in mijn werk.	○	○	○	○	○
Mijn werk brengt mij in vervoering.	○	○	○	○	○

UNIVERSITEIT TWENTE.

Enquête Werkbeleving & Human Resource Management

2. Job Crafting (1)

Dit deel van de vragenlijst gaat over de activiteiten die u onderneemt om uzelf te ontwikkelen en uw werk aangenamer te maken.

Wilt u aangeven in hoeverre u het met de volgende stellingen eens bent (1 = zeer mee oneens t/m 5 = zeer mee eens)?

De volgende stellingen gaan over de ontwikkeling van vaardigheden.

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
Ik probeer mijn vaardigheden te ontwikkelen.	○	○	○	○	○
Ik probeer me verder te professionaliseren op het werk.	○	○	○	○	○
Ik probeer nieuwe dingen te leren op mijn werk.	○	○	○	○	○
Ik zorg ervoor dat ik mijn vaardigheden volledig inzet op het werk.	○	○	○	○	○
Ik bepaal zelf hoe ik mijn werk uitvoer.	○	○	○	○	○

De volgende stellingen gaan over het verkrijgen van feedback.

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
Ik vraag mijn leidinggevende om mij te coachen.	○	○	○	○	○
Ik vraag mijn leidinggevende of hij/zij tevreden is met mijn werk.	○	○	○	○	○
Ik kijk naar mijn leidinggevende voor inspiratie,	○	○	○	○	○
Ik vraag anderen om feedback op mijn werkprestaties.	○	○	○	○	○
Ik vraag collega's om advies over hoe mijn prestaties verbeterd kunnen worden.	○	○	○	○	○
Ik bespreek mijn ideeën met mijn leidinggevende over hoe mijn werkprestaties verbeterd kunnen worden.	○	○	○	○	○

UNIVERSITEIT TWENTE.

Enquête Werkbeleving & Human Resource Management

2. Job Crafting (2)

Dit deel van de vragenlijst gaat over de activiteiten die u onderneemt om uzelf te ontwikkelen en uw werk aangenamer te maken.

Wilt u aangeven in hoeverre u het met de volgende stellingen eens bent (1 = zeer mee oneens t/m 5 = zeer mee eens)?

De volgende stellingen gaan over de uitbreiding van taken.

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
Ik draag potentiële nieuwe medewerkers aan.	○	○	○	○	○
Ik help bij het opstellen van functie- en/of vacature omschrijvingen.	○	○	○	○	○
Ik promoot Deltion als een attractieve werkgever (bijv. bij opleidingsinstituten, (banen)beurzen of professionele verenigingen).	○	○	○	○	○
Als zich een interessant project voordoet, bied ik mezelf proactief als projectmedewerker aan.	○	○	○	○	○
Als zich nieuwe ontwikkelingen voordoen, ben ik één van de eersten die zich hierin verdiept en deze toepast.	○	○	○	○	○
Als het op het werk rustig is, zie ik dit als een kans om nieuwe/andere taken op me te nemen.	○	○	○	○	○
Ik neem regelmatig nieuwe taken op me, zelfs als ik hier geen extra vergoeding voor ontvang.	○	○	○	○	○
Ik probeer te onderzoeken hoe taken gecombineerd kunnen worden, om zo mijn werk uitdagender te maken.	○	○	○	○	○

De volgende stellingen gaan over het verminderen van werkbelasting.

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
Ik zorg ervoor dat mijn werk mentaal minder intensief is.	○	○	○	○	○
Ik probeer ervoor te zorgen dat mijn werk emotioneel gezien minder intensief is.	○	○	○	○	○
Ik probeer mijn werk zo te organiseren dat ik zo min mogelijk contact heb met personen wiens problemen mij emotioneel aangrijpen.	○	○	○	○	○
Ik organiseer mijn werk zo dat ik zo min mogelijk contact heb met personen die onrealistische verwachtingen hebben.	○	○	○	○	○
Ik probeer er voor te zorgen dat ik zo min mogelijk moeilijke beslissingen hoef te maken op het werk.	○	○	○	○	○
Ik organiseer mijn werk op een wijze die ervoor zorgt dat ik me niet te lang achter elkaar hoef te concentreren.	○	○	○	○	○

UNIVERSITEIT TWENTE.

Enquête Werkbeleving & Human Resource Management

3. Human Resource Praktijken (1)

De volgende stellingen gaan over de verschillende manieren waarop Deltion u ondersteunt.

Wilt u aangeven in hoeverre u het met de volgende stellingen eens bent (1 = zeer mee oneens t/m 5 = zeer mee eens)?

De volgende stellingen gaan over taakontwerp.

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
Mijn baan stelt mij in staat om zelf te bepalen hoe ik mijn werk uitvoer.	○	○	○	○	○
Mijn baan stelt me in staat om zelf beslissingen te nemen.	○	○	○	○	○
Mijn baan heeft een hoge mate van baanzekerheid.	○	○	○	○	○
Mijn baan heeft een grote verscheidenheid aan taken.	○	○	○	○	○
Mijn baan bevat taakroulatie (u voert dagelijks verschillende taken uit).	○	○	○	○	○

De volgende stellingen gaan over prestatiebeoordelingen.

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
Mijn prestatiebeoordeling is gebaseerd op de input vanuit verschillende bronnen (collega's, leidinggevenden, etc.).	○	○	○	○	○
Mijn prestatiebeoordeling legt de nadruk op ontwikkeling.	○	○	○	○	○
Mijn prestatiebeoordeling is gericht op de mate waarin ik bijdraag aan de doelstellingen van Deltion.	○	○	○	○	○
Mijn prestatiebeoordeling bevat feedback gericht op mijn ontwikkeling.	○	○	○	○	○

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Enquête Werkbeleving & Human Resource Management

3. Human Resource Praktijken (2)

De volgende stellingen gaan wederom over de verschillende manieren waarop Deltion zijn werknemers ondersteunt door middel van de verschillende Human Resource praktijken.

Wilt u aangeven in hoeverre u het met de volgende stellingen eens bent (1 = zeer mee oneens t/m 5 = zeer mee eens)?

De volgende stellingen gaan over werving & selectie.

De werving en selectie van nieuwe medewerkers in mijn team...

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
... legt de nadruk op de bevordering van de huidige medewerkers (interne promotie).	○	○	○	○	○
... richt zich op het selecteren van de beste all-round sollicitant.	○	○	○	○	○
... is gericht op hun vermogen om bij te dragen aan de strategische doelen van Deltion.	○	○	○	○	○
... geeft de prioriteit aan het leervermogen van de sollicitant.	○	○	○	○	○

De volgende stellingen gaan over training & scholing.

De training/scholing die ik vanuit Deltion ontvang/ontvangen heb...

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
... is zeer uitgebreid.	○	○	○	○	○
... is doorlopend/onafgebroken.	○	○	○	○	○
... kost een hoop tijd/geld.	○	○	○	○	○
... is gericht op het ontwikkelen van kennis en vaardigheden die specifiek zijn voor Deltion.	○	○	○	○	○

De volgende stellingen gaan over beloning & compensatie.

De compensatie/beloning die ik ontvang...

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
... is vooral gebaseerd op korte-termijn prestaties.	○	○	○	○	○
... bevat een uitgebreid pakket aan secundaire voorwaarden.	○	○	○	○	○
... verschaft mij prikkels om met nieuwe ideeën te komen over hoe Deltion beter kan presteren.	○	○	○	○	○

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Enquête Werkbeleving & Human Resource Management

Job Performance

De volgende vragen gaan over de manier waarop u uw taken binnen het Deltion uitvoert, en de manier waarop u met verantwoordelijkheid omgaat.

Wilt u aangeven in hoeverre u het met de volgende stellingen eens bent (1 = zeer mee oneens t/m 5 = zeer mee eens)?

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
Alle aan mij toegewezen taken voer ik adequaat uit.	○	○	○	○	○
Ik voldoe aan alle verantwoordelijkheden die in mijn taakomschrijving staan.	○	○	○	○	○
Ik voer alle taken uit die van mij verwacht worden.	○	○	○	○	○
Ik voer activiteiten uit die mijn prestatiebeoordeling direct beïnvloeden.	○	○	○	○	○
Ik help anderen die (lang) met verlof zijn geweest.	○	○	○	○	○
Ik besteed graag tijd aan het helpen van anderen die werk-gerelateerde problemen hebben.	○	○	○	○	○
Ik doe mijn best zodat nieuwe(re) medewerkers zich in mijn team welkom voelen.	○	○	○	○	○
Ik maak tijd om anderen te helpen die werk- of prive-gerelateerde problemen hebben,	○	○	○	○	○
Ik help anderen met het uitvoeren van hun taken.	○	○	○	○	○

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Enquête Werkbeleving & Human Resource Management

Relatie met uw leidinggevende en Deltion

De volgende vragen gaan over uw relatie met uw leidinggevende en Deltion.

Wilt u aangeven in hoeverre u het met de volgende stellingen eens bent (1 = zeer mee oneens t/m 5 = zeer mee eens)?

	Zeer mee oneens	Oneens	Neutraal	Eens	Zeer mee eens
Mijn leidinggevende is bereid om de invloed/ bevoegdheid die hij/zij als leidinggevende heeft in te zetten om mij te helpen problemen in mijn werk op te lossen.	○	○	○	○	○
Ik kan erop rekenen dat mijn leidinggevende mij zal steunen als dat nodig is, ook al levert dit misschien problemen voor hem/haar op.	○	○	○	○	○
Mijn leidinggevende begrijpt mijn behoeften en problemen op het werk.	○	○	○	○	○
Mijn leidinggevende erkent mijn capaciteiten.	○	○	○	○	○
Mijn leidinggevende heeft vertrouwen in mij, zodat hij/zij mijn beslissingen zal verdedigen als ik afwezig ben.	○	○	○	○	○
Doorgaans weet ik hoe tevreden mijn leidinggevende is met mijn prestaties op het werk.	○	○	○	○	○
Mijn werkrelatie met mijn leidinggevende is effectief.	○	○	○	○	○
Ik zou heel blij zijn als ik de rest van mijn loopbaan bij Deltion kan doorbrengen.	○	○	○	○	○
Ik geniet ervan om over Deltion te praten met mensen die er niet werken.	○	○	○	○	○
Ik voel echt dat Deltion's problemen ook de mijne zijn.	○	○	○	○	○
Ik denk dat ik gemakkelijk gehecht kan raken aan een andere organisatie, zoals ik nu aan Deltion gehecht ben.	○	○	○	○	○
Ik voel me niet als een 'deel van de familie' bij Deltion.	○	○	○	○	○
Ik voel me niet 'emotioneel gehecht' aan Deltion.	○	○	○	○	○
Deltion betekent veel voor mij.	○	○	○	○	○
Ik voel me niet thuis bij Deltion.	○	○	○	○	○

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Enquête Werkbeleving & Human Resource Management

Algemene gegevens

Wat is uw geboortejaar?

Wat is uw geslacht?

Hoeveel jaar bent u werkzaam bij Deltion?

Wat is uw huidige functie?

Wat is de hoogste opleiding die u heeft voltooid?

In welke sector bent u werkzaam?

UNIVERSITEIT TWENTE.

Enquête Werkbeleving & Human Resource Management

Teams GWS

Bij welk team bent u werkzaam?

Hoeveel mensen maken onderdeel uit van uw team?

Wilt u kans maken op één van de /// tegoedbonnen van ////? Vul dan hieronder uw e-mailadres in.

We willen u hartelijk bedanken voor uw deelname aan ons onderzoek!
Mocht u nog vragen en/of opmerkingen hebben, dan horen wij dat graag.