# The relationship between age and performance
# how to motivate older employees to perform better

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# The relationship between age and performance: How to motivate older employees to perform better

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# Management summary

An issue that is going to play a major role in the next years for all companies in the world is the aging workforce. The world's population is aging rapidly and the percentage of employees older than 50 years will grow noticeably in the next 25 years in every industrialized country. Every organization will have to deal with the issues arising from an older workforce eventually. Issues that might arise include retirement, desire of working part-time, and longer illness.

All these developments make clear that the labor market is changing dramatically. Organizations need to prepare themselves for these changes and act accordingly. Managers will need to know what is changing in the individual when one ages and whether this influences their performance. Some authors have found that competencies and motives change with age. In addition, a meta-analysis of the relationship between age and job attitudes has been published. Hence, much research has already focused on the individual changes when aging.

This thesis will extend the research on the effects of aging by studying how these individual changes can be utilized to the advantage of the organization. The thesis will study the effects of age on the motivation of the employees at Waterschapsbedrijf Limburg (WBL). WBL have noticed that many of their employees are aged 50 years or older and they want to know how this affects their motivation and ultimately their performance. This leads to the following main research question.

**Main research question:** What are the effects of age on performance?

An extensive literature study learns that aging is accompanied by change. As a result, when employees age, they develop different needs and desires. Two motivational constructs that will be studied here are goal orientation and job crafting. Goal orientation focuses on the abilities of employees and the type of goal an employee is pursuing. Job crafting is an action where an individual alters the design of the job or the social environment in which he or she works, or both. The question here is whether the job crafting behaviors change when employees age and whether goal orientation is a mediator in the relationship between age and performance.

**Research question 1:** What are the effects of goal orientation and job crafting on the relationship between age and performance?

In addition, the effects of several other variables on the relationship between age and motivation will be evaluated. The influence of subjective age, level of education, personal initiative, organizational tenure, and job autonomy will be studied to discover their effects. This leads to the second research question.

**Research question 2:** What are the effects of subjective age, level of education, personal initiative, organizational tenure, and job autonomy on the relationship between age and motivation?

The literature study resulted in the conceptual framework shown in Figure 1. The conceptual framework shows how the constructs were expected to be related to one another. The research questions served to explore these relationships. To answer the research questions, a questionnaire was created to measure the constructs mentioned in the conceptual framework. The questionnaires

were distributed among the employees of WBL and the response rate was 81,6%. Interviews were held afterwards in order to discuss potential intervention strategies for WBL.

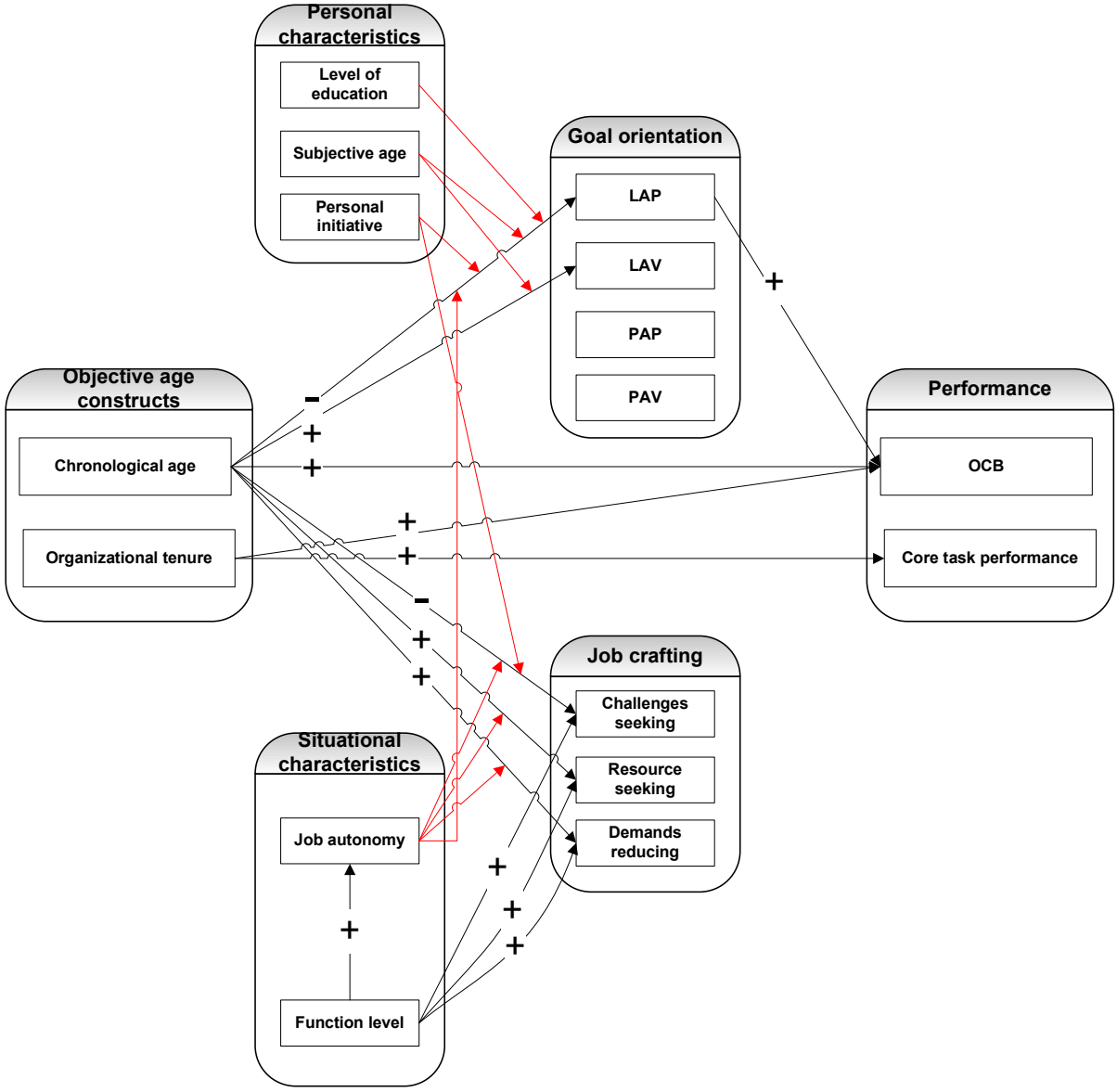


Figure 1 Conceptual framework

After the questionnaires were returned, the data was analyzed and several significant relationships were found. These findings will be discussed below. First, the relationship between chronological age and performance will be discussed. Then, the effects of the motivational constructs will be analyzed. Next, the influences of the personal and situational characteristics will be reviewed. Lastly, the intervention strategies will be explored.

The data analyses revealed that chronological age has a positive effect on performance. To be more precise, chronological age has a positive effect on Organizational Citizenship Behavior (OCB). OCB are those extra behaviors that are not part of the core tasks of an employee, but benefits the organization nonetheless. Examples are: helping out colleagues or maintaining an organized working area. No link was found between chronological age and core task performance and no relationship was found between organizational tenure and OCB or core task performance.

With regards to the motivational constructs, no mediating effects were found for goal orientation in the relationship between chronological age and performance. However, goal orientation in turn was found to have an effect on OCB. Another motivational construct studied here is job crafting. Chronological age was found to be related to job crafting.

The personal and situational characteristics were expected to moderate the relationship between chronological age and the motivational constructs: goal orientation and job crafting. The analyses showed that no moderating effects were found. However, several personal and situational characteristics did affect the motivational constructs directly. Level of education and job autonomy were found to affect job crafting positively and personal initiative was found to affect learning-approach goal orientation positively. For subjective age, no relationships were found with goal orientation or job crafting.

In summary, older employees show more OCB and they show different job crafting behaviors. No significant effects were found for chronological age on goal orientation. On the other hand, chronological age was found to affect job crafting significantly. In addition, employees with a higher education level and more job autonomy show more job crafting behavior and employees who show more personal initiative also show higher levels of learning-approach goal orientation. No effects were found for subjective age.

These findings indicate that older employees do not perform better or worse than their younger colleagues in terms of core task performance. They do, however, show more OCB, which does benefit the organization. One could say that older employees contribute more to the overall performance of an organization. Furthermore, older employees have different job crafting desires. They show less resource seeking behavior but more demands reducing behavior. It is important to enable them to exhibit their job crafting preferences. Employees who perceive job crafting opportunities are expected to be more satisfied with their job (Wrzesniewski & Dutton, 2001) and employees who perceive more job satisfaction achieve higher levels of performance (Petty et al., 1984). In conclusion, older employees have different needs and they are motivated differently compared to younger employees.

Managers can use these findings to their benefit and improve the performance of their older employees. Older employees show more demands reducing behavior for example. Managers can diminish these demands if possible. The jobs can for example be made less physically demanding. Or in the case that these demands are fundamental in the job, they can provide assistance in coping with these demands. The manager can decide to appoint employees who provide help actively to the older employees. Another job crafting aspect where chronological age is related to is resource seeking. Older employees show less resource seeking behavior and thus show less job crafting behavior in this aspect. However, since job crafting is indirectly positively related to performance, it is important to counter this negative relationship. This can be achieved by increasing job autonomy. Job autonomy is found to have a positive influence on resource seeking. Job autonomy can be enlarged by giving older employees more control over how they execute their tasks.

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# 1. Introduction

An issue that is going to play a major role in the next years for all companies in the world is the aging workforce. The world's population is aging rapidly (Calo, 2007; Calo, 2008; Ng & Feldman, 2010a; Zacher & Frese, 2009) and the percentage of employees older than 50 years will grow noticeably in the next 25 years in every industrialized country (Stamov-Roβnagel & Hertel, 2010). Every company will have to deal with the issues arising from an older workforce eventually, for example retirement, desire of working part-time, and longer illness (Streb et al., 2008).

These trends are also observable in the Netherlands. According to the data published by the Central Bureau of Statistics Netherlands, the number of employees aged 50 or above has steadily increased in the period 1996 to 2006. This is partly due to employees postponing their retirement age. Since 2006, a great drop can be observed in the number of employees retiring before the age of 60. At the same time, an increase can be observed in the number of employees retiring at the age of 66 or above. In other words, employees are working longer. It should be noted that in addition, the Dutch government strives to keep the older workforce in the labor market. There are plans to increase the age at which citizens gain access to their social security benefits. All these developments make clear that the labor market is changing dramatically. Organizations need to prepare themselves for these changes and act accordingly. Managers will need to know what is changing in the individual when one ages and whether this influences their performance. Some authors have found that competencies and motives change with age (Calo, 2007; Kanfer & Ackerman, 2004; Ng & Feldman, 2008). But how these changes affect performance has only been studied to some extent. This thesis will extend the research on the effects of aging by studying the effects of age on motivation and how this affects performance.

The structure of this thesis is as follows. In chapter 2, a description of the company (WBL) will be given. Chapter 3 discusses the theoretical framework, which covers the most important findings in literature on the effects of aging. Chapter 4 will discuss the research questions that guide this thesis. In chapter 5, the method used in this research is explained. The next chapter, chapter 6, reports the results from the data analyses. In chapter 7, these results will be discussed and in chapter 8, the managerial implications are clarified. Lastly, the limitations of the study and suggestions for future research can be found in chapter 9.

## 2. Company description

Waterschapsbedrijf Limburg (WBL) is an organization that is dedicated to the wastewater treatment in the province Limburg in the Netherlands. They transport domestic and industrial wastewater to one of their 18 sewage treatment plants. In these plants the existing contaminants in the water are removed or reduced and the water is then returned into the natural environment. The aim of WBL is to continuously improve the operations in the organization by improving efficiency, employee satisfaction, and customer satisfaction. This research will study the employees at WBL. They are responsible for the daily operations mentioned above. They take care of the transport and the purification of contaminated water, and the processing and drying of sludge. Sludge is a residual from the water treatment processes. WBL has 141 employees and a graph showing their age is displayed in Figure 2.

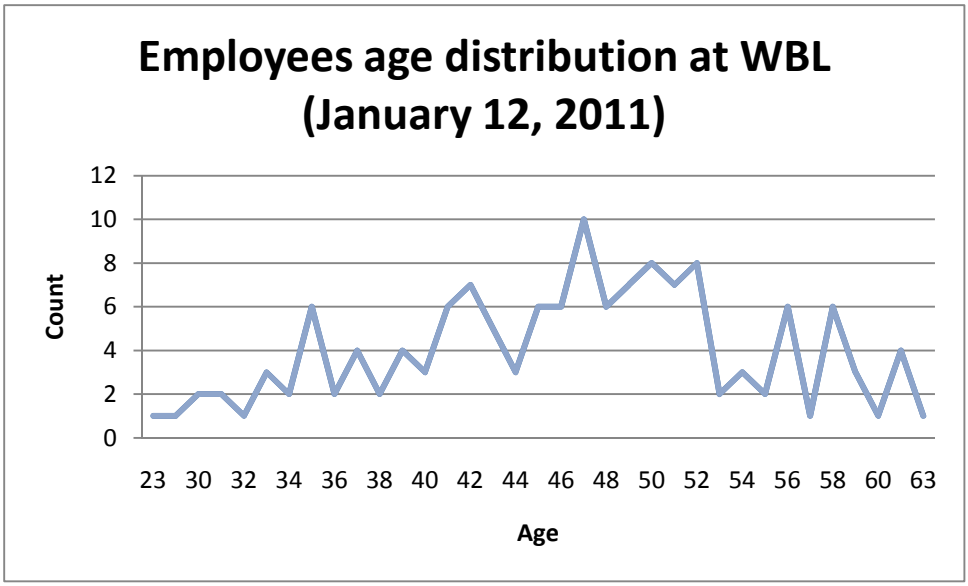


Figure 2 Age distribution at WBL

Figure 3 illustrates the organizational structure at WBL. At the top, the CEO can be found. The CEO is in charge of the management of the entire organization. One layer below are Planning & Control and Human Resource. These departments are responsible for the supportive tasks within WBL, such as the financial management and staff management. They are responsible for the supervision of the wastewater treatment division as well as the tax division. However, since this research does not include the employees in the tax division, this division is also not shown in Figure 3. The employees that take part in this study are all employed in one of the departments depicted in Figure 3. In the wastewater treatment division, there are five teams. These five teams are responsible for the day-to-day operations at WBL. While all these teams consist of white collar workers, Team Operations and Team Maintenance are the only exceptions where blue collar workers are part of the team. White collar workers are educated professionals whose jobs mainly involve office tasks. Blue collar workers are those employees who mainly perform manual labor.

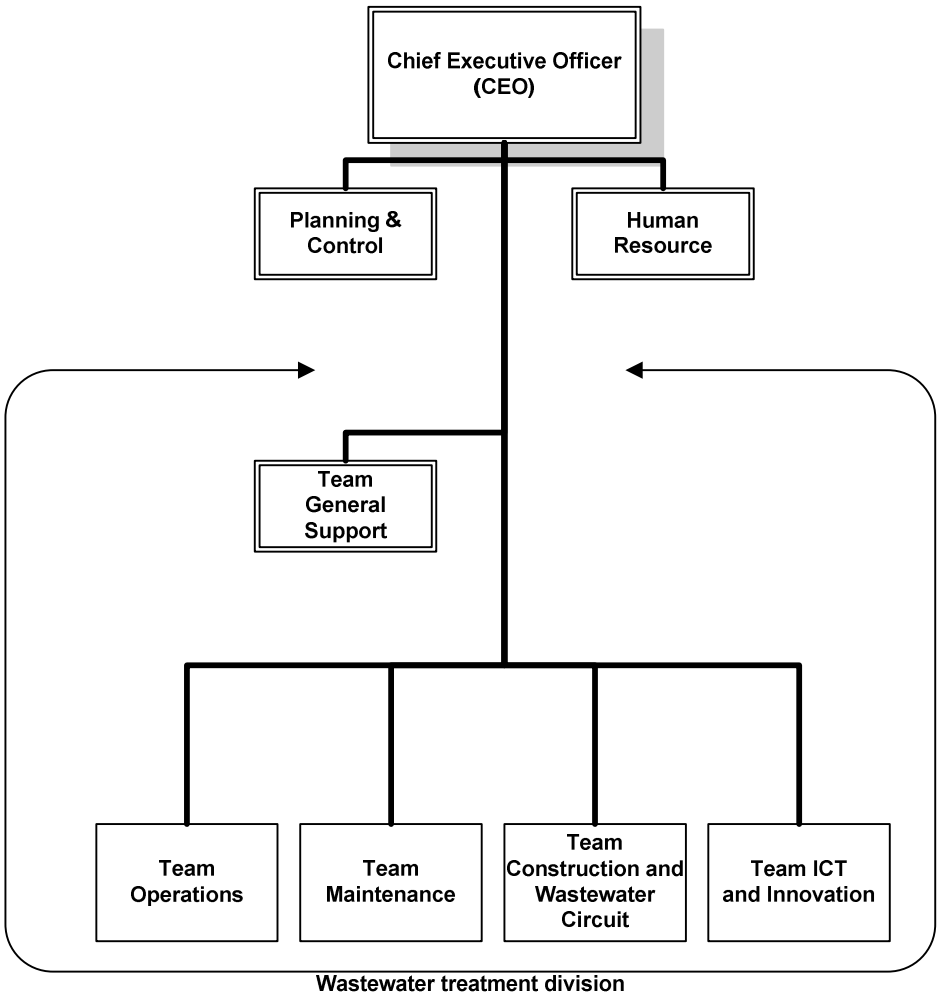


Figure 3 Organizational Structure at WBL

A distinctive characteristic is that WBL is a non-profit organization and as such, the goals and targets they set for their employees is focused on cost-reducing and working more efficient. Their main goal is not to make high profits. Nonetheless, they still want their employees to achieve high performance, similar to organizations in a competitive setting. In addition, the majority of the employees at WBL is male. This might influence the organizational culture at WBL, making it more likely that WBL incorporates a masculine culture. However, since this topic is outside the scope of this study, it will not be discussed here.

This study will focus on older employees and how to motivate them to perform better. WBL is concerned with the relatively large number of older employees they employ. They want to know whether these employees have different needs compared to younger employees. They expect these older workers to have other incentives that motivate them to perform better, since they are nearing their retirement and have a longer organizational tenure in general. WBL want to know whether the older workforce differs significantly from the younger workforce, what these differences are, and how they can motivate their older employees to perform better.

# 3. Research question

The aging workforce is going to affect all companies in the world. It is therefore important for all organizations to better understand the characteristics of an aging workforce and to understand how to motivate older employees specifically. This thesis will study the effects of age on the motivation of the employees at WBL. WBL have noticed that many of their employees are aged 50 years or older and they want to know how this affects their motivation and ultimately their performance. This leads to the following main research question.

**Main research question:** What are the effects of age on performance?

An extensive literature study learns that aging is accompanied by change. Aging is associated with decline and growth. As a result, when employees age, they develop different needs and desires. WBL want to know what these needs are in order to effectively motivate employees in their late career stage. Two motivational constructs that will be studied here are goal orientation and job crafting. Do the job crafting behaviors change when employees age and is goal orientation a mediator in the relationship between age and performance?

**Research question 1:** What are the effects of goal orientation and job crafting on the relationship between age and performance?

In addition, the effects of several other variables on the relationship between age and performance will be evaluated. The influence of subjective age, level of education, personal initiative, organizational tenure, and job autonomy will be studied to discover their potential effects. This leads to the second research question.

**Research question 2:** What are the effects of subjective age, level of education, personal initiative, organizational tenure, and job autonomy on the relationship between age and performance?

# 4. Theoretical framework

The aging workforce has received much attention in both politics and academic research in recent years. Many authors have studied the general effects of aging on the individual. When employees age, they change. Aging affects personality traits (Kanfer & Ackerman, 2004; Kanfer & Ackerman, 2007), job attitudes (Ng & Feldman, 2010), and job characteristic preferences (Kanfer & Ackerman, 2007). Older employees will show higher levels of Organizational Citizenship Behavior (OCB) (Ng & Feldman, 2008; Zacher et al., 2010), but declines can be observed in their physical performance (Streb et al., 2008; Zacher & Frese, 2009). There is a general believe that older employees tend to be less motivated and thus perform worse, but this is incorrect (Kanfer & Ackerman, 2004; Rabl, 2010; Stamov-Roβnagel & Hertel, 2010). Thus older employees are not less motivated, but there might be changes in what motivates older employees to perform better. This thesis will contribute to the existing knowledge about the effects of aging by studying the changes in terms of motivation. The following chapters will discuss all constructs examined in this thesis. First, age is discussed which is the most important construct. Then, performance is described, followed by an explanation of the motivational constructs. Lastly, the personal and situational characteristics are covered.

## 4.1 Chronological age

Studying the relationship between age, motivation, and performance, one needs to clarify what is meant by age. In order to prevent any confusion, age will be specified by chronological age. Chronological age refers to the number of years a person has lived. Chronological age itself is an 'empty' variable (Settersten & Mayer, 1997). It is rarely directly linked to a behavior and it becomes less useful in studying older employees, since the diversity among similarly aged individuals increases over time (Settersten & Mayer, 1997; Cleveland & McFarlane Shore, 1992). Settersten and Mayer (1997) add that chronological age is often a poor indicator for biological, social, or psychological age. First, individual development is different for all individuals and age is therefore only a 'rough indicator' for biological, social, and psychological age. Second, age is only meaningful in a relative sense. In other words, age is meaningful in comparing an individual's age with others. Finally, age is only meaningful when there is sufficient background information concerning the cultural and social meaning attached to given chronological ages. Despite these shortcomings of chronological age, it is an indispensable index according to Settersten and Mayer (1997). It is an easily measured, objective and universal attribute and it is therefore a variable for classifying and ordering society. Most organizational policies are geared to this age concept (Stamov-Roβnagel & Hertel, 2010) and it considers health-, job-, and qualification-oriented aspects related to age (Rabl, 2010). Moreover, chronological age is highly correlated with other age concepts, such as functional age, psychosocial age, organizational age, and lifespan age (Stamov-Roβnagel & Hertel, 2010).

### 4.1.1 Organizational tenure

While WBL is particularly interested in what the effects of chronological age are, they also want to know how organizational tenure affects the motivation and performance of their employees. Organizational tenure can be defined as the amount of time an employee is employed at the current organization (Ng & Feldman, 2010b). It differs from job tenure and group tenure in that it measures the total amount of time an employee has been employed in the same organization and not the amount of time in a specific job or group in the same organization. It is also not identical to work experience (Ng & Feldman, 2010b). While work experience can also be gained through accumulating years of employment in an organization, it can also be increased by job training or job rotation,

unlike organizational tenure. Organizational tenure can only be increased over time in a specific organization. In addition, two individuals with identical years of organizational tenure do not necessarily have identical work experience.

## 4.2 Performance

Where chronological age is one main aspect in this research, performance is another one. This is an important aspect for all organizations. When the performance of the employees increases, it will benefit the organization. It is therefore important for organizations to understand how performance can be improved. Performance can be divided into numerous different job related behaviors (Ng & Feldman, 2010b). There is core task performance, citizenship behavior (Ng & Feldman, 2010b), also referred to as Organizational Citizenship Behavior (OCB), innovative job performance or creativity (Janssen & Van Yperen, 2004), and adaptability, to name a few. This study will focus on core task performance and OCB, since these are the two constructs that are of particular interest for WBL. Core task performance refers to the basic required duties in a particular job (Ng & Feldman, 2010b). These duties are the main components of a job and are therefore mandated, appraised, and rewarded by the organization (Janssen & Van Yperen, 2004). Moreover, Janssen and Van Yperen (2004) state that these duties are composed of sets of rules and procedures, meant to make work behavior predictable. This in turn enables organizations to coordinate and control organizational tasks in order to achieve organizational goals. OCB can be described as the activities engaged in by an employee that are not part of the core task requirements, but nonetheless contribute to the organization's effectiveness (Ng & Feldman, 2010b). For example helping out colleagues or maintaining an organized and clean work environment. Ng and Feldman (2008) concluded in their meta-analysis that chronological age is unrelated with core task performance and is positively related with OCB. So older and younger employees achieve the same levels in core task performance, but the older employees do outperform their younger colleagues in OCB. Ng and Feldman (2008) mention that older employees are more motivated to volunteer in general, which results in higher scores for OCB. This indicates that motivation plays a role in the relationship between chronological age and performance.

## 4.3 Motivational constructs

According to McCloy et al. (1994), motivation is one of three factors that determine performance. The other two factors affecting performance are: declarative knowledge and procedural knowledge and skills. These two factors will not be studied as they have already been studied by Kanfer and Ackerman (2004). Their research shows that that declarative knowledge increase with age and procedural knowledge and skills decrease with age. Consequently, this research will only focus on motivation. "Motivation is defined as the combined effect of three choice behaviors: (a) the choice to expend effort, (b) the choice of what level of effort to expend, and (c) the choice to persist in the expenditure of the chosen level of effort." (McCloy et al., 1994, p. 494). In other words, motivation is the choice to work on the job tasks for some period of time at some level of effort. Since Ng and Feldman (2008) state that older employees show more OCB due to their motivation to volunteer, the relationship between chronological age and performance is expected to be mediated by motivation. However, motivation in general does not change when aging (Kanfer & Ackerman, 2004; Rabl, 2010; Stamov-Roβnagel & Hertel, 2010). But some motivational constructs might change over time. Two motivational constructs that will be studied here are goal orientation and job crafting. These constructs will be explained and discussed in more detail below.

### 4.3.1 Goal orientation

Goal orientation is not to be confused with goal setting. Goal setting focuses on the motivation of employees. Goal orientation focuses on the abilities of employees and the type of goal an employee is pursuing. There are two different forms of goal orientation: a learning goal orientation and a performance goal orientation (Janssen & Van Yperen, 2004). A learning goal orientation focuses on developing competences, acquiring new skills, learning from experience (Janssen & Van Yperen, 2004; Seijts et al., 2004), and doing one's best (Janssen & Van Yperen, 2004). A performance goal orientation is related to a strong desire to impress others (Seijts et al., 2004) and focuses on establishing one's superiority over others (Janssen & Van Yperen, 2004). Both orientations can in turn be subdivided in an approach and an avoidance orientation, resulting in the following four orientations: learning-approach goal orientation (LAP), learning-avoidance goal orientation (LAV), performance-approach orientation (PAP), and performance-avoidance orientations (PAV) (Janssen & Van Yperen, 2004). LAP is focused on the development of competences through task mastery. This can be achieved by attending workshops to develop new skills for example. LAV is focused on avoiding deterioration, losing skills, or leaving a task unmastered. Employees focused on LAV, experience high desires to stay current in their jobs. This can be achieved by studying text-books or reading journals for example. PAP is related to the desire to outperform others and to demonstrate one's superiority, e.g. by highlighting one's own effort or take on tasks in which one excels. PAV is related to avoiding failure and to avoid looking incompetent, e.g. by delegating or assigning difficult tasks to others. It should be noted that different types of goal orientations can co-exist in one individual, meaning that individuals differ in the extent to which they pursue each of the four goal orientations. An individual can for instance focus more on one type of goal orientation, relative to another type of goal orientation.

Goal orientations are considered to be rather stable personality characteristics, formed by the beliefs individuals have concerning their development of attributes, such as intelligence, personality, abilities, and skills (Janssen & Van Yperen, 2004). Employees with a learning goal orientation believe that their attributes are dynamic and changeable and that displaying effort leads to performance improvements. Employees with a performance orientation believe that their attributes are fixed, concrete, and internal entities and that working hard does not lead to performance improvements.

Seijts et al. (2004) mention that individuals with a learning goal orientation show feedback-seeking behavior and consequently show higher levels of performance. The opposite is true for individuals with a performance goal orientation, they show no feedback-seeking behavior and as a result they achieve lower levels of performance. Feedback-seeking is important for one's performance, because it suggests ways to improve an individual's abilities. The reason why performance oriented individuals show no feedback-seeking behavior is because they view their abilities as fixed and fear to receive criticism about what they believe they cannot improve. Furthermore, Seijts et al. (2004) mention that a learning goal orientation is always appropriate, even for experienced employees.

So they conclude that feedback-seeking behavior is important for improving performance. This means that a learning goal orientation improves performance. But Stamov-Roβnagel and Hertel (2010) and Rabl (2010) state that when employees become older, their need to learn new things diminishes. When employees are entering their late career, their career priorities will change (Calo, 2008). At this age, their focus shifts from accumulating assets to forming close relationships and being more socially meaningful. As a result, older employees will likely have lower levels of LAP in

comparison to younger colleagues. However, it is unwise for older employees not to learn any new knowledge. It is important for them to learn new things in order to remain current in their job (De Lange et al., 2010; Spitulnik, 2006). Employees who have a desire to stay current in the job, they have a focus on LAV. Thus, in addition, older employees are likely to have higher levels of LAV compared to their younger colleagues. This leads to hypothesis 1a.

**Hypothesis 1a:** Chronological age is negatively related to LAP and positively related to LAV.

Hypothesis 1a suggests that there is a direct relationship between age and goal orientation. In addition, goal orientation is also directly related to performance. LAP leads to higher performance (Janssen & Van Yperen, 2004), PAP does not relate negatively to performance and PAV leads to lower performance (Payne et al., 2007). This means that a negative relationship is expected between chronological age and LAP and there is positive relationship between LAP and performance. Given that chronological age is also directly related to OCB (Ng & Feldman, 2008), it is likely that goal orientation plays a mediating role in the relationship between chronological age and OCB. Consequently, hypothesis 1b is formulated as follows.

**Hypothesis 1b:** The relationship between chronological age and OCB is mediated by LAP.

In addition, goal orientation might also mediate the relationship between organizational tenure and performance. Ng and Feldman (2010b) have studied the relationship between organizational tenure and performance. Performance was measured as the combined effect of core task performance, citizenship behavior, and counterproductive behaviors. Counterproductive behavior are those activities engaged in by an employee that intentionally harms the well-being of the organization (Ng & Feldman, 2010b). These three categories all contribute to the overall performance of an employee. The major contributor is core task performance, followed by counterproductive behavior and OCB (Ng & Feldman, 2010b).

They have found that organizational tenure is positively related to core task performance and OCB. Three potential explanations are given for this positive relationship. First, long tenured workers have gained much job related knowledge. They have gained declarative, or procedural knowledge, or both (Ng & Feldman, 2010b), which are two antecedents of performance (McCloy et al., 1994). Second, the reason why long tenured workers are employed for a long period of time in one organization is because there is a fit between the person and the organization (P-O fit). They possess the right set of characteristics and perform well enough. They are therefore contracted to the organization for a longer period of time. This means that the long tenured employees, as a group, are more likely to perform better than new employees, as a group. Third, research has shown that high levels of organizational tenure are related to lower job changing intentions and behavior. This decreased interest in changing jobs causes an increase in the interest in the current job and as a result the employee becomes more motivated to perform well. Furthermore, the unwillingness to leave the organization makes the employee's personal career success and job security heavily dependent on the organization's profitability. For this reason they are likely to be motivated to perform well.

Organizational tenure was found to contribute the most to core task performance when tenure ranged from three to six years (Ng & Feldman, 2010b). The effect of organizational tenure on core task performance virtually drops to zero after 14 years of employment. The explanation the authors give for these results is that in the first years of employment, employees need a couple of years to

learn how to do their jobs effectively. But once they know how to perform effectively in their job, the increases in performance stagnate. Furthermore, the effect of organizational tenure on OCB was strongest in the first three years of employment. This means that employees immediately display OCB from the start of their employment.

It appears that the relationship between organizational tenure and performance is strongest in the first six years of organizational tenure. A possible explanation for this relationship could be found in the mediating effect of goal orientation. Employees with low levels of organizational tenure are expected to have a high LAP because the organization is new to them and they need to learn how to behave and act in their new job. After six years in the same organization, the novelty disappears, the job becomes a routine because there is nothing more to learn about the tasks, and the desire to learn how to perform the tasks slowly declines. Thus in the first six years of organizational tenure, LAP amplifies the positive relationship between organizational tenure and performance. After six years, LAP diminishes the positive relationship between organizational tenure and performance. Consequently, hypothesis 1c can be formed.

**Hypothesis 1c:** The positive relationship between organizational tenure and performance levels out after six years due to the mediating effects of LAP.

### 4.3.2 Job crafting

Wrzesniewski and Dutton (2001) define job crafting as the physical and cognitive changes individuals make in their work regarding their tasks or the relationships one nurtures. So job crafting is an action where an individual alters the design of the job or the social environment in which he or she works, or both. The three types of job crafting are: altering the number of activities performed while doing the job; altering how one sees the job; or changing the individuals or groups with whom one interacts while doing the job. Job crafting is a creative and improvised process in which individuals adapt their jobs in ways that create and sustain a viable definition of the work they do and who they are at work. Whether this crafting is good or bad for the organization depends on the situation and the changes an employee makes. Wrzesniewski and Dutton (2001) assume that employees alter their task and relational boundaries to create work they are more satisfied with. Employees who perceive more job satisfaction in turn achieve higher levels of performance (Petty et al., 1984). Wrzesniewski and Dutton (2001) add that employees display job crafting to fulfill three individual needs: to have some control over their jobs in order to avoid alienation from the work; to create a positive self-image in their work; and to fulfill a basic human need for connection to others.

Petrou et al. (2010) demonstrate a different approach for defining job crafting. Petrou describes job crafting in terms of crafting job resources and job demands. Job resources are those physical, psychosocial, social or organizational aspects of the job that are functional in achieving work goals, or stimulate personal growth and development. Job demands are those physical, social, or organizational aspects of the job that require sustained physical or mental efforts. They state that there are three types of job crafting: resources seeking, challenges seeking, and demands reducing. Examples for these three types of job crafting are respectively: asking advice from a coworker, requesting more responsibilities, and ask for less physical demanding tasks.

Job crafting is related to changing a job in order to create a better fit with the job characteristics an employee desires (Wrzesniewski and Dutton, 2001). Kanfer and Ackerman (2007) have studied which job characteristics are preferred by older employees. They state that job characteristics that

are particularly attractive for older workers are security, health benefits, and opportunities for control over work assignments. These characteristics promote a positive sense of self. Older employees prefer jobs that have a meaning, they want to feel useful, respected and recognized (Bal et al., 2010; Hunter, 2007; Kanfer and Ackerman, 2004; Kanfer and Ackerman, 2007; Rabl, 2010; Slagter, 2007; Stamov-Roβnagel and Hertel, 2010). In addition, older employees focus on their personal relationships with colleagues, family and friends (Bal et al., 2010). They are more interested with the social activities they engage in, compared to their younger counterparts. These findings suggest that older employees have desires to increase the resources in their jobs. They want to have a job with security, health benefits, opportunities for control over the work assignments, and better relationships with colleagues. This leads to hypothesis 2a.

**Hypothesis 2a:** Chronological age is positively related to resource seeking.

With regards to challenges seeking, older employees tend to attach less value on work goals (Kanfer & Ackerman, 2007). However, the fact that older employees attach less value on their work goals does not mean that they put less effort in achieving their work goals (Kanfer & Ackerman, 2007). Older employees still display the same level of effort in achieving their work goals, even though they value it less than the younger employees. In addition, for older employees the interest in developmental opportunities declines (Kanfer & Ackerman, 2004). When individuals age, the importance of acquiring additional knowledge diminishes (Stamov-Roβnagel & Hertel, 2010) and the desire to attain high levels of competence declines (Rabl, 2010). Consequently, older employees are expected to be satisfied with the situation as it is. They are likely to show less challenges seeking behavior, see hypothesis 2b.

**Hypothesis 2b:** Chronological age is negatively related to challenges seeking.

In addition to job resources, there are also job demands according to Petrou et al. (2010). Older employees have different desires in changing job demands compared to younger employees. Kanfer and Ackerman (2007) mention that flexible work schedules are particularly desired by older employees. This means that they do not want to be strictly tied to fixed working schedules and as a result, they are expected to reduce the demands in their job. Consequently, hypothesis 2c is formulated as follows.

**Hypothesis 2c:** Chronological age is positively related to demands reducing.

## 4.4 Personal characteristics

To this point, the relationship between chronological age, motivation, and performance has been discussed. But there are more variables that influence (parts of) this chain. McCloy et al. (1994) add that personal as well as situational characteristics can affect motivation. The personal characteristics will be discussed below, the situational characteristics will be explored in the next paragraph. Personal characteristics are individual factors that can influence how age is related to motivation, and as a result, can indirectly affect the level of performance. Three types of personal characteristics will be studied here: subjective age, level of education, and personal initiative. These constructs will be discussed below.

### 4.4.1 Subjective age

Since chronological age alone is not considered to be the most suitable operationalization of the age construct, alternative measures and conceptualizations of age have been developed (Cleveland & McFarlane Shore, 1992). These appear to be more accurate in predicting and providing additional explanations beyond chronological age for the health, satisfaction and functioning of older employees. One alternative measure for defining age is subjective age. Subjective age is not equal to chronological age. Chronological age is an objective perspective of one's age, while subjective age can be defined as the perception of one's age. Subjective age is related to how old one feels, which age group an individual believes he or she belongs to, or how old he or she would like to be, regardless of one's chronological age (Settersten & Mayer, 1997).

Cleveland and McFarlane Shore (1992) state that subjective age is more psychologically meaningful for older individuals. That is, old is perceived to be similar to decline and deterioration and if individuals perceive themselves as healthy and productive despite being older chronologically, they may consider themselves as subjectively younger. Older employees with a relatively lower subjective age believe they are not near their retirement yet and might therefore still have the desire to develop themselves, to learn new knowledge. They feel young and might therefore also behave accordingly. In contrast, employees who perceive a relatively higher subjective age compared to their chronological age, feel they are closer to their retirement and behave older accordingly. So while chronological age is expected to negatively affect LAP and positively affect LAV, a lower subjective age is expected to actually reverse that effect, whereas a higher subjective age is assumed to amplify that effect. This leads to hypothesis 3.

**Hypothesis 3:** The relationship between chronological age and goal orientation is moderated by subjective age.

### 4.4.2 Level of education

Level of education concerns the type of education an employee has enjoyed and the academic credentials or degrees he or she has obtained (Ng & Feldman, 2010a). This is a personal characteristic that might influence an employee's performance at work. Formal education provides employees with in-depth and analytical knowledge which improves their performance (Ng & Feldman, 2010b). But it might also be related to one's goal orientations. According to Janssen and Van Yperen (2004), employees with a learning goal orientation consider their attributes to be dynamic and changeable and that displaying effort leads to performance improvements. So employees who have had a high level of education might realize that their attributes are indeed dynamic and not static, for they have developed their knowledge and skills over the years and ultimately accomplished in finishing a high level of education. They might therefore be more eager to develop themselves even further by acquiring even more knowledge and skills. Employees with a low level of education might perceive the exact opposite and they consider themselves to be unable to attain high knowledge and skill levels. While hypothesis 1a suggests that age is negatively related to LAP, this relationship is expected to be moderated by the level of education an employee has had. A high level of education is expected to weaken the negative relationship and a low level of education is likely to amplify the negative relationship. Hypothesis 4 captures this expectation.

**Hypothesis 4:** The relationship between chronological age and LAP is moderated by level of education.

### 4.4.3 Personal initiative

Personal initiative is a concept that can be described as an employee's own willingness to initiate an action that brings outcomes that are beneficial for himself or for the organization, or for both (Bledow & Frese, 2009). Bledow and Frese (2009) have found that self-efficacy and felt responsibility are antecedents of personal initiative and that personal initiative enhances general performance in the eyes of the supervisors. However, performance is not only higher in the perceptions of supervisors, it is indeed higher in reality (Belschak et al., 2010; Thomas et al., 2010). In addition, personal initiative is related to the need for achievement and an action orientation (Frese et al., 1997).

With regards to the relationship between age and personal initiative, Stamov-Roβnagel and Hertel (2010) have found that there is no significant age difference in personal initiative. So both younger and older employees display the same levels of effort in achieving work goals and overcoming barriers. In contrast, Thomas et al. (2010) have found that age is significantly related to personal initiative, but the positive effect is rather small. This means that age has a small or non significant effect on personal initiative. However, the absence of a noteworthy linear relationship does not exclude the presence of a moderating relationship. Personal initiative is expected to moderate the relationship between age and goal orientation and job crafting. While age is expected to have a negative effect on LAP, the strength of this relationship might be affected by personal initiative. An employee who shows high levels of personal initiative is more likely to weaken this negative relationship between age and LAP. In other words, employees who are showing initiative are more likely to make efforts in learning new knowledge. For job crafting, the same logic applies. Employees with high levels of personal initiative are expected to show more job crafting activities, since they show more willingness to initiate an action, they are less passive. This leads to hypotheses 5a and 5b.

**Hypothesis 5a:** The relationship between chronological age and LAP is moderated by personal initiative.

**Hypothesis 5b:** The relationship between chronological age and challenges seeking is moderated by personal initiative.

## 4.5 Situational characteristics

In addition to personal characteristics, situational characteristics are also expected to affect motivation (McCloy et al., 1994). Situational characteristics are contextual factors that can influence the relationship between chronological age and motivation. Two situational characteristic will be studied here: job autonomy and function level. Job autonomy is a construct that can be controlled and modified by an organization and it is therefore relevant to study here. Moreover, older employees attach more value to the importance of job autonomy (Bipp, 2010) and the level of job autonomy for white and blue collar workers differs (Berg et al., 2010). This offers opportunities where modifications in job autonomy can affect employees' motivation. In addition, function level is examined. Function level refers to the type of function an employee fulfills. A distinction is made between blue collar workers and white collar workers. Blue collar workers mainly perform manual labor and white collar workers primarily perform office tasks.

### 4.5.1 Job autonomy

Job autonomy is related to the degree of freedom, independence, and discretion to schedule work, make decisions, and select the methods used to perform tasks (Morgeson et al., 2005). As mentioned before, Kanfer and Ackerman (2007) have found that flexible work schedules and opportunities for control over work assignments are particularly attractive for older workers. In line with these findings, older employees are expected to have a greater need for job autonomy. Indeed, Bipp (2010) has found that older employees attach more value to the importance of job autonomy.

Morgeson et al. (2005) have mentioned that employees with more job autonomy consider a wider range of skills and knowledge important for their roles. The increase in job control, that is accompanied by an increase in job autonomy, motivates employees to master new tasks. This means that they have a focus on development, or in other words they have a LAP. This suggests that the negative relationship between age and LAP might be moderated by job autonomy. As mentioned before, age is expected to have a negative effect on LAP. Consider an employee, regardless of his or her age, with low job autonomy. Low job autonomy means less freedom and control in the job. In other words, this person will only do what is asked. This does not stimulate the worker to engage in LAP. However, when job autonomy is high, the expected negative relationship between age and LAP is likely to be weaker due to the motivation to master new tasks. Consequently, hypothesis 6a is formulated as follows.

**Hypothesis 6a:** The relationship between chronological age and LAP is moderated by job autonomy.

In addition, job autonomy might also influence job crafting. When older employees have more job autonomy, they will have more freedom in their jobs and more control over their jobs. This means that it is likely that they will also see more job crafting opportunities and can also engage in more job crafting activities. Morgeson et al. (2005) stated that employees who have the opportunity and capability to do more, will do more in their jobs. For these reasons, it is likely for older employees with high levels of job autonomy to actually exhibit job crafting. So job autonomy is expected to have a moderating effect on the expected positive relationship between age and job crafting. High job autonomy means more freedom and control in the job, which is expected to increase job crafting. In contrast, low job autonomy is expected to reduce the number of job crafting activities, see hypothesis 6b

**Hypothesis 6b:** The relationship between chronological age and job crafting is moderated by job autonomy.

With regards to white collar and blue collar workers, the frequency by which these two groups engage in job crafting activities might differ. The job tasks of white collar workers are not necessarily fully documented. Their job design is more focused on the goals they must accomplish and not as much on the means by which to achieve those goals (Berg et al., 2010). This provides them opportunities to integrate their personal preferences in how to perform their tasks. In contrast, the jobs of the blue collar workers have predetermined goals as well as means to achieve these goals. Their job designs prescribe specifically how they should spend their time at work. This leaves the blue collar workers with almost no room for job crafting opportunities. So blue collar workers are expected to show lower levels of job crafting. Hypothesis 6c captures this expectation, focusing on the older employees.

**Hypothesis 6c:** Older blue collar workers show lower levels of job crafting and job autonomy in comparison with older white collar workers.

## 4.6 Conceptual framework

As mentioned before, this research will explore the relationship between age and motivation and how this affects performance. In addition, several personal characteristics and situational characteristics are explored. The conceptual framework in Figure 4 shows these relationships. The objective age constructs are expected to affect the motivational constructs: goal orientation and job crafting. These relationships are in turn expected to be moderated by personal characteristics and situational characteristics. All these relationships will directly or indirectly influence the performance of an employee.

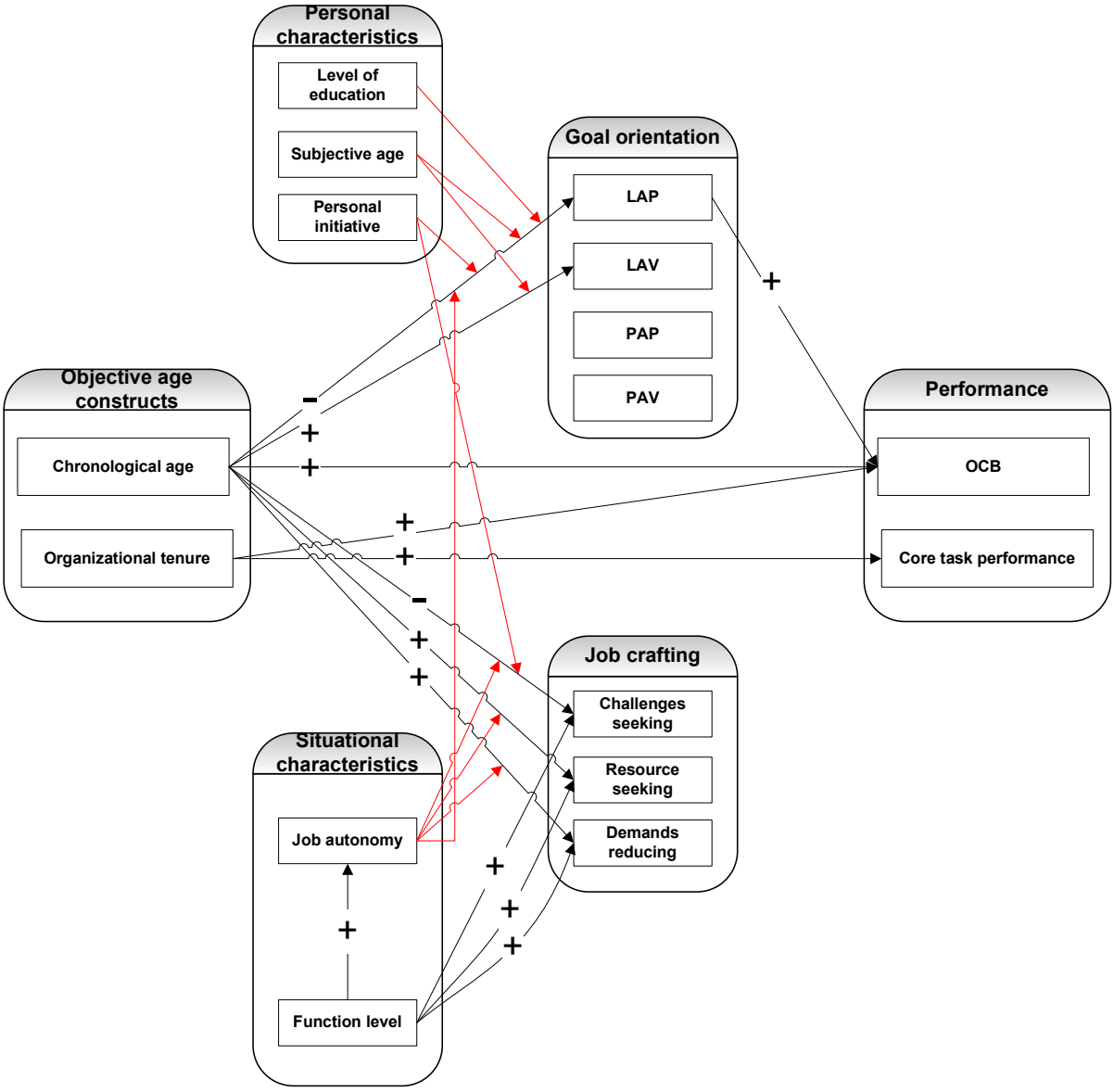


Figure 4 Conceptual framework; black arrows indicating direct effects, red arrows indicating moderating effects

# 5. Method

This research consisted of two parts. In the first part, questionnaires were distributed to gather quantitative data. After the questionnaires were returned, interviews were held to discuss potential intervention strategies to motivate the older employees at WBL. The questionnaires and interviews are both discussed in more detail below.

## 5.1 Questionnaires

### 5.1.1 Procedure

Hardcopy questionnaires were distributed at five sewage treatment plants and at the headquarter of WBL. The five sewage treatment plants were located in Susteren, Hoensbroek, Maastricht, Venlo and Roermond. The headquarter was also located in Roermond. Employees were informed by their managers a week in advance about the questionnaire. The survey was conducted during office hours.

In three consecutive days, the five sewage treatment plants were visited and the questionnaires were distributed among the employees who were scheduled to participate in the questionnaire. The questionnaires were distributed in advance or after a work meeting, introduced by a short outline about the thesis and the questionnaire.

The survey at the headquarter was conducted in two days. These employees were not scheduled to take part in the questionnaire and therefore an active approach was used to distribute the questionnaires. The student actively approached employees at their working areas. After giving the same introduction as at the water treatment plants, the participants were requested to fill in the questionnaires and to return the completed questionnaires to the student or his mentor at WBL.

Ideally, all scheduled employees would be present at their respective water treatment plant and all office employees would be present at the headquarter to fill in the questionnaires. However, as expected, this was not the case. Employees were absent due to illness, a day off or other reasons. For these absent employees, the questionnaires were e-mailed to them. In the e-mail a short introduction was given and the participants were requested to return the completed questionnaires by e-mail or by mail.

### 5.1.2 Questionnaire concept

The questionnaire was composed of two parts: a self-report questionnaire and a peer questionnaire (see Appendix A). The self-report questionnaire measured the constructs in the conceptual framework. The peer questionnaire assessed the respondent's perception of the performance of a colleague or subordinate. The purpose of the peer questionnaire is to validate the ratings given for performance in the self-report questionnaires in order to come to sensible and truthful results. All participants were requested to fill in a self-report questionnaire and the majority was also asked to complete an additional peer questionnaire. Some participants were not requested to fill in a peer questionnaire since they were unable to assess the performance of others. They did not work with each other, or the participant was employed in a detached job function in which he or she has no colleagues and only a supervisor, whom he or she is unable to assess either. Ideally, a self-report questionnaire and a peer questionnaire would be available for each employee at the end of the survey.

The self-report and peer questionnaires were linked to each other as follows. For all employees at the headquarter of WBL, the target employee for the peer questionnaire was predetermined by the student's mentor at WBL. Only the student and his mentor at WBL knew which employee was going to assess which colleague. To keep the survey anonymous, the student assigned a two letter code to every office employee. Participants were requested to fill in their own personal code on the front page of self-report questionnaire and to fill in the code of their peer on the peer questionnaire. Both codes were provided by the student on site. These codes were used to match self-report and peer questionnaires. A self-report questionnaire of person AA would be matched afterwards with a peer questionnaire targeting person AA. As soon as a match was found for a self-report and a peer questionnaire, the questionnaires were put together and the front pages of both questionnaires were removed and disposed of.

For the employees at the sewage treatment plants, no codes were created in advance. That is because it was not possible to predict in advance which employees would be present at the work meetings, due to illness or other reasons. Therefore codes were assigned to the participants on site. Each participant received a letter of the alphabet and they only needed to remember their own letter and the letter of their peer for the peer questionnaire. For the peer questionnaires the participants were requested to select their peer randomly among those present, with the only requirement that for each participant one peer questionnaire needed to be filled in. At the end of the session, the matching questionnaires were bundled and the front pages of both questionnaires were disposed of.

Even though no names were asked on the questionnaires, some employees still questioned the anonymity. With information like age, gender, organizational tenure, and function being asked, WBL could easily find out which employee filled in a specific questionnaire. It was assured that the information provided in the questionnaires will be used confidentially and that WBL will receive an adjusted version of the data file. For example, function name would be left out of the data file and it would be replaced with function level, which can either be blue collar worker or white collar worker. Although some employees still questioned this approach and decided not to participate in this survey, most of the employees eventually agreed to participate.

### 5.1.3 Participants

All 141 employees at WBL's wastewater treatment division were invited to participate in the questionnaire survey on a voluntary basis. They were encouraged by their respective managers to participate and fill in the questionnaires truthfully and with care. Respondents needed 20-30 minutes to fill in both the self-report and the peer questionnaire. No incentives were provided for participating in this survey, but the participants were promised that a summary of the results of this study will be posted on WBL's intranet when the study is finished.

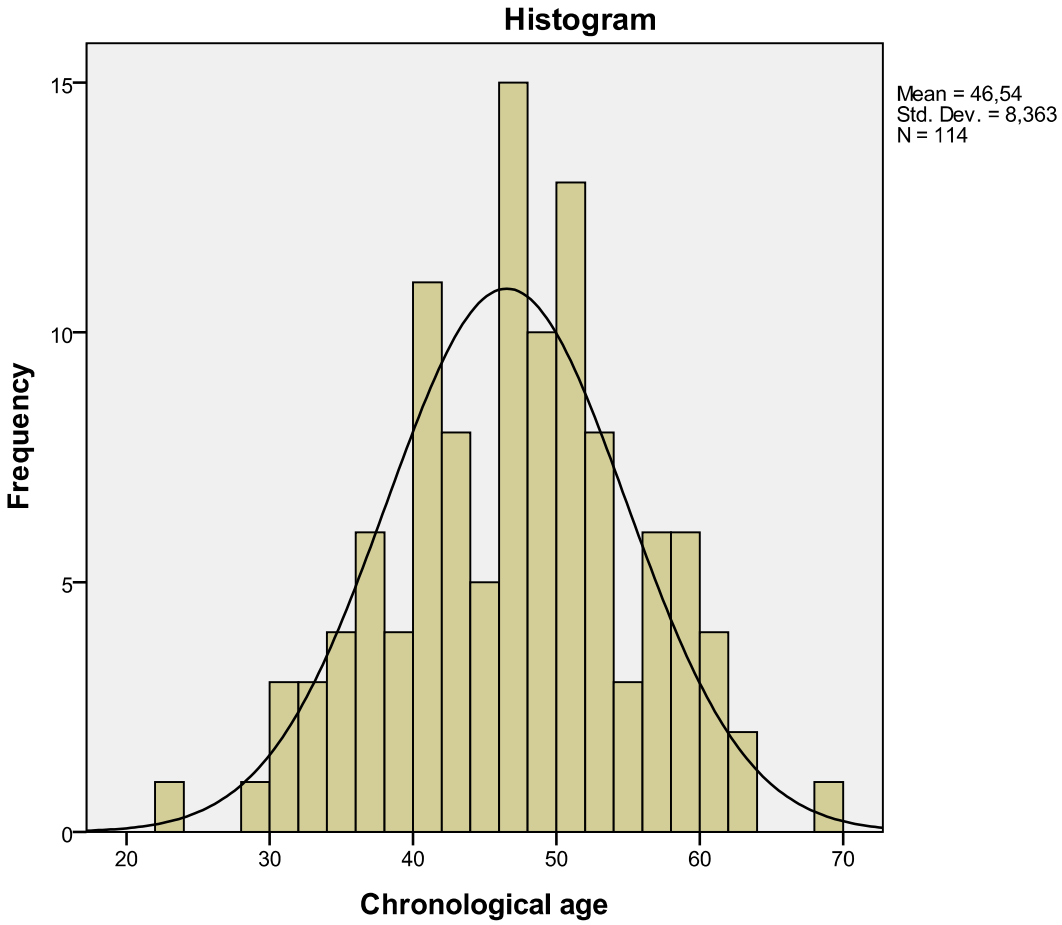


Figure 5 Age distribution participants WBL

115 employees eventually participated (105 male and 10 female) which equals a response rate of 81,6%. The average age of the respondents was 46,54 years (SD = 8,363; range of age: 23-68) (see Figure 5, N is 114 here because there was one respondent who did not reveal his or her age). Age as normally distributed with a p-value of 0,61 following from the Kolmogorov-Smirnov test.

In line with several authors who have drawn the line for older employees at 50 years (Stamov-Roβnagel & Hertel, 2010), this study will also abide to that rule. Figure 5 makes clear that WBL employ a substantial number of older employees. To be precise, 43 out of the sample of 114 employees was aged 50 years or older, which is equal to 37,7%. In the sample of 115 employees, 46,1% held a high school degree or higher. Work experience on average was 25,52 years (SD = 8,86) with two participants with less than 10 years of work experience (4 and 4,5 years respectively). Organizational tenure ranged from 0,25 years (3 months) to 37 years with an average of 15,89 years (SD = 10,22). Nine participants did not have a fulltime contract. A fulltime contract at WBL is 36 hours per week and these nine participants have contracts ranging from 20 hours per week to 32 hours per week. In this sample, 28,7% were blue collar workers, 65,2% were white collar workers, and 6,1% were undefined (these participants did not fill in their function name). Blue collar workers are Monteur, E-Monteur, Mechanisch Monteur, Senior Monteur, Senior Monteur E, Operator, Proces Operator, and Senior Operator. The remaining functions are all white collar workers.

Out of the 115 participants, for 102 participants both a self-report and a peer questionnaire was returned. This means that for 13 participants there was a self-report questionnaire filled in, but the peer questionnaire was missing. Missing means that either the peer had no intention of filling in a peer questionnaire or the peer simply did not participate in this survey. Nonetheless, these 13 cases were included in the data analyses since these data can still be used in the analyses. In addition, there were 15 peer questionnaires for which the self-report questionnaires were missing. The explanation for this is that from 15 employees who did not participate in this survey, their peers did participate and therefore filled in the respective peer questionnaires. Comparing the means for OCB and core task performance for the sample of 102 participants that has a matching self-report questionnaire and the sample of 15 participants that has no matching self-report questionnaire, results in the following. On average, the 102 participants showed higher scores for OCB ($M$ = 3,91, $SE$ = 0,05) than the 15 participants ($M$ = 3,51, $SE$ = 0,15). This difference was significant $t(115) = 2{,}82$, $p < {,}05$. The 102 participants also showed higher scores for core task performance ($M$ = 4,00, $SE$ = 0,05) than the 15 participants ($M$ = 3,75, $SE$ = 0,19). This difference was not significant $t(15{,}85) = 1{,}28$, $p > {,}05$. Notice that the difference in OCB is significant. However, since these 15 cases have no matching self-report questionnaire which makes it impossible to determine the overall/objective scores for OCB, these 15 cases will be excluded from further data analyses.

### 5.1.4 Measures

Since WBL is a Dutch company, all constructs were measured with items that were translated in Dutch. The constructs measured are listed below and an explanation is given for how they were measured.

**Chronological age** – Chronological age was measured with a single item asking the participant what his or her age is. This variable has a continuous scale.

**Subjective age** – To my knowledge, there is no Dutch scale developed for this construct and the items used by Galambos et al. (2005) are therefore translated to Dutch for this study. Galambos et al. (2005) used a five-item scale ranging from 1 (a lot younger than my age) to 7 (a lot older than my age). An example of such an item is: “Compared to most people of my age, most of the time I feel…”.

**Organizational tenure** – Organizational tenure was measured with a single item asking the participant how many years he or she is employed at WBL.

**Level of education** – Level of education was measured with a single item that asks the respondent to choose the highest level of education he or she has completed. The answers contained the educational levels used in the Dutch education system. But since this research studied employees aged 50 and higher, they might have completed educational levels that are not being used anymore. For this reason, the questionnaire also contained a blank area where respondents had the option to fill in their educational level.

**Function level** – The type of work an employee performs. An employee can either be a blue collar worker (performs mainly manual labor) or a white collar worker (performs mainly office tasks). This variable was measured by asking the respondent what his or her function is. Based on the function, an employee could be classified as a blue collar or a white collar worker.

**Personal initiative** – Belschak et al. (2010) have developed a Dutch translation for the items for measuring personal initiative. These items were translated from the original items developed by Frese et al. (1997). Personal initiative was measured using a seven-item scale ranging from 1 (disagree completely) to 7 (agree completely). An example of such an item is: "I actively attack problems".

**Job autonomy** – This construct was measured using the scale used by Bakker et al. (2004), a Dutch version of Karasek's (1985) Job Content Questionnaire. This is a three-item scale ranging from 1 (Never) to 5 (Always). An example of such an item is: "Can you decide for yourself how you carry out your tasks?".

**Job crafting** – To measure job crafting, a scale explained by Petrou et al. (2010) was used. They have developed a thirteen-item scale that describes the three types of job crafting (resources seeking, challenges seeking, and demands reducing). The items were measured with a 5-point Likert scale ranging from 1 (Never) to 5 (Often). Resources seeking was measured with five items (e.g. "I ask my supervisor for advice"), challenges seeking was measured with three items (e.g. "I ask for more challenging tasks"), and demands reducing was measured with five items (e.g. "I try to ensure that my work is less emotionally intense").

**Goal orientation** – Goal orientation was measured using the original Achievement Goal Questionnaire (AGQ) items from Elliot and McGregor (2001). This is a twelve-item scale, which was translated to Dutch for this study. The four aspects of goal orientation were: PAV, PAP, LAV, and LAP. These four aspects were measured with three items each, with a scale ranging from 1 (completely disagree) to 6 (completely agree). An example of a PAV item was "My goal in my job is to avoid performing poorly". An example of a PAP item was "It is important for me to do well compared to others in my job". An example of a LAV item was "Sometimes I'm afraid that I may not understand the content of my job as thoroughly as I'd like". An example of a LAP item was "I want to learn as much as possible in my job".

**Performance (2 questionnaires)** – Performance was the only construct that was measured with two questionnaires, one self-report questionnaire and one peer questionnaire. Cleveland and McFarlane Shore (1992) mentioned that employees and managers pay attention to different issues and may store information differently, leading to potential bias in the ratings for this subjective construct. It is therefore important to validate the ratings given in the self-report questionnaire. Performance was measured using a fourteen-item scale ranging from 1 (disagree completely) to 5 (agree completely). Two aspects of performance were measured: OCB and core task performance. OCB and core task performance were each measured with seven items. These items originated from Williams and Anderson (1991) and was translated to Dutch for this study. They referred to core task performance as in-role behavior. An example of an OCB item was "I help colleagues who have been absent". An example of a core task performance item was "I adequately complete my assigned duties".

## 5.2 Interviews

### 5.2.1 Procedure

The second part of the research method consisted of interviews. Interviews are a useful method to discuss potential intervention strategies to motivate older employees. Hence, the main focus of the interviews was to discuss the empirical findings from the data analyses and how to turn these

findings into practical use for WBL. The interviews made clear whether specific interventions would work or why not. Furthermore, the interviews provided an opportunity to discuss the interventions that already take place at WBL. Does WBL use interventions that are specifically targeted at the older employees? Based on the discussions in the interviews, the researcher was able to make suggestions for how to motivate the older employees to perform better.

### 5.2.2 Participants

Ten employees were interviewed who had also participated in the questionnaires. In consultation with the student's mentor at WBL, the following participants were selected: two younger blue collar employees were selected, two older blue collar workers, two younger white collar employees, two older white collar employees, one younger white collar employee (former blue collar employee) and one older white collar employee (former blue collar employee). There were no blue collar employees who were former white collar employees. The ten interviewees were selected based on a long organizational tenure and being talkative. The interviews with the blue collar workers were held at the wastewater treatment plants and the interviews with the white collar workers were held at the head office of WBL.

# 6. Results

In this section, the procedures of the data analyses of the questionnaires are described. First, the descriptive statistics are presented. Next, the data will be tested for normal distribution. Subsequently, a correlation matrix will be presented. Lastly, the hypotheses will be tested.

## 6.1 Descriptive statistics

An overview of the descriptive statistics can be found in Table 1. Table 1 shows the number of items by which a variable is measured, the range of the scale used to measure the variable, the mean, the standard deviation and Cronbach's Alpha. Note here that the Cronbach's alpha values for the performance of the peer questionnaires takes into account the regular peer questionnaires as well as two additional peer questionnaires. These additional peer questionnaires were two cases for which a double peer questionnaire is filled in by accident.

**Table 1 Descriptive statistics**

| | N items | Scale | M | SD | Cronbach's Alpha |
|---|---|---|---|---|---|
| **Subjective age** | 5 | 1-7 | 3,17 | 0,72 | 0,81 |
| **Personal initiative** | 7 | 1-7 | 5,51 | 0,76 | 0,89 |
| **Job autonomy** | 3 | 1-5 | 3,68 | 0,79 | 0,84 |
| **Job crafting** | | | | | |
| • Challenges seeking | 3 | 1-5 | 2,93 | 0,77 | 0,68 |
| • Resources seeking | 5 | | 3,52 | 0,53 | 0,67 |
| • Demands reducing | 5 | | 2,35 | 0,66 | 0,73 |
| **Goal orientation** | | | | | |
| • PAP | 3 | 1-6 | 3,32 | 1,22 | 0,85 |
| • LAP | 3 | | 5,08 | 0,59 | 0,74 |
| • PAV | 3 | | 3,74 | 1,01 | 0,63 |
| • LAV | 3 | | 2,43 | 0,96 | 0,87 |
| **Performance (self-report)** | | | | | |
| • OCB | 7 | 1-5 | 3,97 | 0,38 | 0,69 |
| • Core task | 7 | | 4,11 | 0,41 | 0,73 |
| **Performance (peer)** | | | | | |
| • OCB | 7 | 1-5 | 3,92 | 0,50 | 0,85 |
| • Core task | 7 | | 4,00 | 0,50 | 0,79 |
| **Performance (overall)** | | | | | |
| • OCB | 14 | 1-5 | 3,96 | 0,33 | 0,77 |
| • Core task | 14 | | 4,06 | 0,33 | 0,72 |

**Number of items, Scale range, Mean (M), Standard Deviation (SD) and Cronbach's Alpha; Sample size range: 102-115.**

Cronbach's alpha measures the internal consistency of a construct. Alpha scores of 0,60 and higher are considered acceptable (Field, 2005; Murphy & Davidshofer, 1988). As can be seen, all values for Cronbach's alpha were higher than 0,60, meaning that the items measuring the constructs were internally consistent.

It is interesting to notice that the participants considered themselves to score high on personal initiative (5,51 on a scale from 1 to 7) and LAP (5,08 on a scale of 1 to 6). This means that employees at WBL considered themselves to be active employees who perform tasks without being instructed to do so and also to be employees who are eager to develop their competencies. The standard

deviation values for Personal initiative and LAP were not particularly high, which means that the majority of the participants share the same opinion.

Furthermore, the scores for performance were rather high in both questionnaires, with an average score of 4 on a scale from 1 to 5. This means that the majority considered their own performance to be high in Organizational Citizenship Behavior (OCB) and core task performance and their peers shared the same opinion. Also the standard deviation scores were not particularly high, indicating relatively high consensus among the participants. Nonetheless, these scores were normally distributed, which will be discussed below in the Kolmogorov-Smirnov test.

Lastly, the standard deviation scores for the four aspects of Goal orientation differ. While LAP had a rather low standard deviation, the other three aspects had higher standard deviations. This indicates that the participants differed in opinion in how they score on PAP, PAV, and LAV.

## 6.2 Normal distribution test

Table 2 shows the p-values for the Kolmogorov-Smirnov test, which checks the normality distribution of the variables. Any p-value lower than 0,01 is considered to be significant and as a result not normal distributed. The constructs that were not normal distributed are: job autonomy, LAP, LAV, and OCB (peer questionnaire). In order to determine how these constructs deviated from a normal distribution, histograms were made (see Appendix B). The histograms show that job autonomy did slightly resemble a normal distribution, but one cannot say that it was normally distributed. The other constructs did not resemble a normal distribution. What is interesting about them is that their scores are heavily concentrated. LAP has a high concentration of scores around 5, LAV is highly concentrated on 2 and OCB (peer) is highly concentrated just above 4. In conclusion, job autonomy, LAP, LAV, and OCB (peer questionnaire) were not normally distributed, as the Kolmogorov-Smirnov test indicated, and which was also confirmed by the histograms.

Table 2 Kolmogorov-Smirnov Test

| | Z-value | p-value |
|---|---|---|
| **Chronological age** | ,758 | ,614 |
| **Subjective age** | 1,048 | ,222 |
| **Organizational tenure** | 1,050 | ,220 |
| **Personal initiative** | 1,124 | ,160 |
| **Job autonomy** | 1,662 | ,008** |
| **Job crafting** | | |
| • Challenges seeking | 1,111 | ,170 |
| • Resources seeking | ,995 | ,275 |
| • Demands reducing | ,830 | ,495 |
| **Goal orientation** | | |
| • PAP | 1,138 | ,150 |
| • LAP | 2,271 | ,000** |
| • PAV | 1,033 | ,237 |
| • LAV | 1,802 | ,003** |
| **Performance (self-report)** | | |
| • OCB | 1,318 | ,062 |
| • Core task | 1,335 | ,057 |
| **Performance (peer)** | | |
| • OCB | 1,696 | ,006** |
| • Core task | 1,295 | ,070 |
| **Performance (overall)** | | |
| • OCB | 0,872 | ,433 |
| • Core task | 1,051 | ,219 |

**p<0,01; *p<0,05

## 6.3 Correlation

The correlation matrix can be found in Table 3. Bivariate correlation was used here since the correlation between two variables was studied here. For the variables that were normal distributed, Pearson's correlation coefficients were calculated. For the variables that were non-normal distributed (job autonomy, LAP, LAV, and OCB (peer)), the Spearman's correlations coefficients were calculated. All correlations calculated here were based on a two-tailed test. All cases were included in the calculation of the correlations, with the number of cases for each variable ranging from 102 to 115.

The first two constructs, level of education and function level, served as control variables in this study. Level of education was either low (participant has no high school or university degree) or high (participant has a high school or university degree). Function level also had two levels: a low function level, indicating a blue collar employee, and a high function level, indicating a white collar employee.

Some findings in the correlation matrix were rather self-explanatory. First, level of education seems to be highly positively correlated with function level (r = ,519). This means that high education levels are linked with white collar employees and low education levels are linked with blue collar employees. This is a rather trivial finding. Furthermore, chronological age was highly positively correlated with organizational tenure (r = ,683), which was also a rather straightforward finding.

Other findings need more explanation, for example the negative correlation between chronological age and subjective age (r = -,363). This means that older employees considered themselves to be younger than their chronological age and younger employees considered themselves to be older than their chronological age. A possible explanation for the younger employees is that they feel old because they work with many older employees, 37,7% of the employees at WBL is older than 50 years. This makes them feel old because they spend much time with colleagues who are older than themselves. The older employees might feel young because they do not have a sense of deterioration. WBL encourages their employees to achieve high performance and as a consequence, older employees will need to learn new competences and keep performing well. This makes them aware that they do not deteriorate yet, which is a common belief among older employees (Cleveland & McFarlane Shore, 1992). The older employees understand that they can perform as well as the younger employees and this makes them feel younger than their chronological age.

In addition, chronological age was found to be positively correlated with OCB (overall) (r = ,203). Moreover, chronological age was negatively correlated with resources seeking (r = -,211). Older, more experienced employees appeared to exhibit less resources seeking behavior and younger, less experienced employees exhibited more resources seeking behavior. A possible explanation for this might be that younger employees encounter situations more frequently in which they do not know how to act. Older employees have more experience and they are familiar with many unforeseen situations. They do not require any additional resources to solve the situation. Younger employees might need help in order to bring a novel situation to a successful end.

Job autonomy was correlated with many other constructs: level of education (r = ,329), function level (r = ,338), personal initiative (r = ,229), resource seeking (r = ,343), LAV (r = -,282), OCB (overall) (r = ,264), and core task performance (overall) (r = ,451). Lastly, the scores for OCB and core task performance in the self-report questionnaires, the peer questionnaires, and overall were not all correlated with each other. There are differences in opinion when a participant rates oneself or when a peer rates the participant. A participant might think that he shows high levels of OCB, but a peer might think otherwise.

One of the most unusual findings was perhaps the finding that the scores for OCB and core task performance were uncorrelated in the self-report and peer questionnaires. One would expect that the performance score an employee gave to oneself would be similar to the performance score given by a peer. Apparently this was not the case, which means that the perceptions of the performance of an employee differs depending on whether the employee himself is judging the performance or a colleague is.

Table 3 Correlation matrix

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Level of education | - | | | | | | | | | | | | | | | | | | | |
| 2 | Function level | ,519* | - | | | | | | | | | | | | | | | | | | |
| 3 | Chronological age | ,044 | ,044 | - | | | | | | | | | | | | | | | | | |
| 4 | Subjective age | -,016 | -,083 | -,363** | - | | | | | | | | | | | | | | | | |
| 5 | Organizational tenure | -,088 | ,101 | ,683** | -,263** | - | | | | | | | | | | | | | | | |
| 6 | Personal initiative | ,008 | -,097 | ,139 | -,050 | -,019 | - | | | | | | | | | | | | | | |
| 7 | Job autonomy | ,329** | ,338** | ,149 | -,038 | ,050 | ,229* | - | | | | | | | | | | | | | |
| 8 | Challenges seeking | ,112 | ,003 | -,020 | ,077 | -,175 | ,233* | ,066 | - | | | | | | | | | | | | |
| 9 | Resources seeking | ,378** | ,391** | -,211* | ,181 | -,294** | ,154 | ,343** | ,358** | - | | | | | | | | | | | |
| 10 | Demands reducing | -,259** | -,311** | ,172 | -,128 | ,044 | -,064 | -,114 | -,021 | -,199* | - | | | | | | | | | | |
| 11 | PAP | ,045 | -,056 | ,107 | ,076 | -,109 | ,192* | -,007 | ,380** | ,094 | ,047 | - | | | | | | | | | |
| 12 | LAP | -,018 | -,031 | -,122 | ,090 | -,249** | ,183 | -,142 | ,140 | ,208* | -,142 | ,285** | - | | | | | | | | |
| 13 | PAP | -,352** | -,201* | ,126 | -,033 | ,109 | -,017 | -,157 | ,039 | ,014 | ,142 | ,206* | ,180 | - | | | | | | | |
| 14 | LAV | -,220* | -,200* | -,094 | ,158 | -,088 | -,212* | -,282** | ,002 | ,018 | ,255** | ,038 | ,171 | ,427** | - | | | | | | |
| 15 | OCB (self-report) | ,077 | -,065 | ,188* | -,152 | ,049 | ,366** | ,288** | ,245** | ,323** | -,113 | ,180 | ,188* | ,188* | -,107 | - | | | | | |
| 16 | Core task (self-report) | ,208* | ,113 | ,029 | -,053 | ,000 | ,391** | ,302* | ,106 | ,224* | -,341** | ,213* | ,207* | -,002 | -,269** | ,534** | - | | | | |
| 17 | OCB (peer) | -,103 | -,101 | ,091 | -,054 | ,096 | ,100 | ,164 | ,042 | ,044 | ,256** | -,004 | -,114 | ,222* | ,190 | ,151 | -,053 | - | | | |
| 18 | Core task (peer) | ,138 | ,049 | ,014 | ,053 | ,110 | ,097 | ,281** | -,012 | ,058 | ,046 | -,025 | -,213* | -,127 | -,181 | -,015 | ,123 | ,411** | - | | |
| 19 | OCB (overall) | -,063 | -,085 | ,203* | -,099 | ,096 | ,225* | ,264** | ,195 | ,201* | ,132 | ,153 | -,002 | ,220* | ,096 | ,637** | ,219* | ,806** | ,341** | - | |
| 20 | Core task (overall) | ,251* | ,125 | ,022 | ,063 | ,080 | ,330** | ,451** | ,079 | ,219* | -,150 | ,146 | -,138 | -,099 | -,263** | ,271** | ,659** | ,267** | ,828** | ,383** | - |

**significant at p<0,01; *significant at p<0,05; N=102-115; white cells are Pearson's correlation coefficients; grey cells are Spearman's correlation coefficients

## 6.4 Hypotheses testing

With the data gathered from the questionnaires the hypotheses were tested. Two control variables were used: level of education and function level. Linear regression was used to test the hypothesis where a direct relationship was expected and to test moderating effects. The four steps procedure of Baron and Kenny (1986) was used to test mediation. ANCOVA was used to test for any significant differences between two groups of employees and ANOVA was used to determine significant differences between multiple groups of employees.

In addition, for all hypotheses concerning chronological age, an additional test was performed. This additional test studied the effects of age groups, rather than chronological age. There are two age groups: a younger group (aged younger than 50 years) and an older group (aged 50 years and older). This analysis was used to detect any significant differences between older and younger employees and could determine the important characteristics of the older group. For age groups, only the significant findings will be mentioned though.

### 6.4.1 Relationship between age and performance

Before testing the hypotheses, the relationship between age and performance was studied first. Since this is the most important relationship in this thesis, it was important to obtain a basic understanding of this link. A regression analysis was performed to evaluate the relationship between age and performance. More specifically, between chronological age and OCB (overall), and between chronological age and core task performance (overall). Level of education and function level were used as control variables. Both variables only had two possible scores, either high or low. A summary of the relationship between chronological age and OCB is shown in Table 4 and the relationship between chronological age and core task performance is shown in Table 5.

**Table 4 Relationship chronological age and OCB**

| | OCB (overall) | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level** | -,015 | -,020 |
| **Function level** | -,119 | -,145 |
| **Chronological age** | | ,222* |
| **$R^2$** | ,016 | ,064* |
| **$R^2$ change** | ,016 | ,049* |

**p<0,01; *p<0,05; +p<0,10; N=102

In Table 4, OCB was inserted as the dependent variable. Education level and function level were entered in block 1 of the regression analysis and chronological age was added in block 2. Model 1 shows that no significant effects of education level and function level were found. The $R^2$ was also not significant, meaning that Model 1 could not predict a significant amount of variance in OCB (overall). Model 2 indicates that there was a significant positive relationship between chronological age and OCB. The effect size of the relationship between chronological age on OCB (β = 0,222) can be labeled as a small effect size (Cohen, 1992). $R^2$ was significant in this model, indicating that Model 2 could predict a significant amount of variance in OCB (overall). 6,4% of the variances in OCB (overall) could be explained by Model 2.

Table 5 Relationship chronological age and core task performance

| Core task performance (overall) | | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**Chronological age** | ,301**<br>-,125 | ,300**<br>-,127<br>,018 |
| **$R^2$** | ,076* | ,076* |
| **$R^2$ change** | ,076* | ,000 |

**p<0,01; *p<0,05; +p<0,10; N=102

Table 5 shows the results of the linear regression analysis for core task performance (overall). Core task performance (overall) was inserted as the dependent variable. In block 1, the control variables education level and function level were added. Chronological age was added in block 2. In Model 1, education levels appeared to be highly significantly and positively related to core task performance (overall). Function level had no effect on core task performance (overall). Model 1 was able to predict a significant amount of variance in core task performance (overall). 7,6% of the variances in core task performance (overall) could be explained by Model 1. Chronological age was added in Model 2, but it had no effect on core task performance (overall). Model 2 did not predict core task performance (overall) better than Model 1. It was still significant in predicting 7,6% of the variances in core task performance (overall).

What is interesting to mention is that when OCB and core task performance were split up into their relative scores for the self-report questionnaires and the peer questionnaires, different results were obtained (see Appendix C). There was still a significant positive relationship between chronological age and OCB (self-report) (β = ,195), but the relationship between chronological age and OCB (peer) was not significant. In addition, education level was not significantly related to core task performance (self-report), but both education level and function level were significantly related to core task performance (peer) when corrected for outliers (β = ,284 and β = -,258 respectively). Apparently, the perception of one´s own performance differs significantly from the perception of a peer. In the next chapters, the hypotheses will be discussed.

### 6.4.2 Chronological age and goal orientation (hypotheses 1a, 1b, and 1c)

**Hypothesis 1a: Chronological age is negatively related to LAP and positively related to LAV.**

Linear regression was used here to test this hypothesis. LAP was inserted as the dependent variable. Education level and function level were entered in block 1 of the regression and served as control variables. In block 2, chronological age was entered in order to study its additional predictive value. The results are shown in

Table 6. Model 1 shows that education level and function level were not significantly related to LAP. In addition, the $R^2$ was not significant, meaning that Model 1 did not contribute significantly in predicting an essential amount of variance in LAP. In Model 2, chronological age was added and the relationship between chronological age and LAP appeared to be non significant. Also the $R^2$ was not significant, thus Model 2 could not explain a significant amount of variances in LAP either.

Table 6 Relationship chronological age and LAP

| | LAP | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**Chronological age** | -,069<br>-,013 | -,060<br>-,012<br>-,133 |
| **$R^2$** | ,006 | ,023 |
| **$R^2$ change** | ,006 | ,017 |

**p<0,01; *p<0,05; +p<0,10; N=107

The second part of hypothesis 1a states that chronological age is positively related to LAP. Again, linear regression was used to test the hypothesis (see Table 7). LAV was used as the dependent variable. Education level and function level were the control variables and are inserted in block 1. Chronological age was inserted in block 2. Model 1 shows that the relationship between education level and function level, and LAV was not significant. However, it is remarkable that Model 1 seemed to be significant in predicting LAV. 5,6% of the variance in LAV could be explained by Model 1. According to Model 2, no significant relationship was found between chronological age and LAV. The predictive power of Model 2 was also not significantly more than Model 1. In conclusion, hypothesis 1a was not supported.

Table 7 Relationship chronological age and LAV

| | LAV | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**Chronological age** | -,156<br>-,114 | -,147<br>-,113<br>-,128 |
| **$R^2$** | ,056* | ,072* |
| **$R^2$ change** | ,056* | ,016 |

**p<0,01; *p<0,05; +p<0,10; N=107

**Hypothesis 1b: The relationship between chronological age and OCB is mediated by LAP.**

Only OCB (overall) was studied here, OCB (self-report) and OCB (peer) were not included in the analyses. The self-report and peer scores were excluded because they reflect perceptions of performance. This hypothesis attempted to make clear whether chronological age and LAP had an effect on the actual, objective OCB performance, not on the perception of it. To analyze the effects of a mediator, several steps need to be taken (Baron & Kenny, 1986), which are explained below.

**Step 1: test significance of chronological age with OCB (overall).**

The hypothesis suggests that LAP mediates in the relationships between chronological age and OCB (overall). However, for a mediating effect to exist, a significant relationship between the independent and dependent variable needed to be present. This condition was already tested above and was found to be true for the relationship between chronological age and OCB (overall).

**Step 2: test significance of LAP with OCB (overall).**

The second step was to determine the significance of the relationship between the mediator and the dependant variable, LAP and OCB (overall) respectively. This relationship was analyzed with linear regression. The dependent variable was OCB (overall). The control variables were education level and function level and these were entered in block 1 in the regression. In block 2, LAP was entered. The results are shown in Table 8. The relationship between LAP and OCB (overall) appeared to be not significant. Therefore, hypothesis 1b was not supported.

Table 8 Relationship goal orientation and OCB (overall)

| | OCB (overall) | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**LAP** | -,056<br>-,053 | -,056<br>-,053<br>-,002 |
| **$R^2$** | ,009 | ,009 |
| **$R^2$ change** | ,009 | ,009 |

**p<0,01; *p<0,05; +p<0,10; N=98

**Hypothesis 1c: The positive relationship between organizational tenure and OCB and core task performance levels out after six years due to the mediating effects of LAP.**

To test this hypothesis, organizational tenure was divided into two tenure groups: one group with employees with low organizational tenure (<6 years) and a second group with high organizational tenure (≥6 years) (see Table 9). The low tenure group counts 24 employees who are, on average, employed 1,95 years with a standard deviation of 1,43 years. The high tenure group counts 91 employees who are, on average, employed 19,57 years with a standard deviation of 8,14 years.

Table 9 Descriptive statistics tenure groups

| | Count | M | SD |
|---|---|---|---|
| **Organizational tenure <6 years** | 24 | 1,95 | 1,43 |
| **Organizational tenure ≥6 years** | 91 | 19,57 | 8,14 |

Mean (M) and standard deviation (SD) are in years

An ANCOVA was then performed to find any significant differences between these two groups. OCB and core task performance were subsequently used as the dependent variable. Education level and function level were inserted as covariates, which served as the control variables in the analyses. Tenure group was inserted as a fixed factor. Comparing both tenure groups did not result in any significant results. The effect of tenure group was non-significant on:

- OCB (self-report), $F(1, 104) = 0,495$, $p = ,483$
- OCB (peer), $F(1, 94) = 0,012$, $p = ,915$
- OCB (overall), $F(1, 94) = 0,131$, $p = ,718$
- Core task performance (self-report), $F(1, 104) = 0,795$, $p = ,375$
- Core task performance (peer), $F(1, 94) = 0,119$, $p = ,731$
- Core task performance (overall), $F(1, 94) = 1,394$, $p = ,241$

Since no significant relationship was found between organizational tenure and performance, no mediating effect can exist for LAP. Hypothesis 1c is therefore not supported.

### 6.4.3 Chronological age and job crafting (hypotheses 2a, 2b, and 2c)

**Hypothesis 2a: Chronological age is positively related to resource seeking.**

A linear regression analysis was used to study this hypothesis. Resource seeking was inserted as the dependent variable. The control variables, education level and function level, were included in block 1. In block 2, chronological age was added. The results are shown in Table 10. Model 1 indicates that education level and function level were both significantly positively related to resource seeking. Moreover, function level appeared to be highly significantly related to resource seeking. This means that employees with a higher education level and a higher function level exhibit more resource seeking behavior. Model 1 also explained a significant part in the variances in resource seeking. 19,3% of the variance could be explained by the variables in Model 1. In Model 2, chronological age was added. As can be seen, the relationship between chronological age and resource seeking was highly significant and negative. Thus older employees showed less resource seeking behavior in comparison with younger employees. Model 2 was significantly better in predicting resource seeking. 25,1% of the variances in resource seeking could be explained by the variables in Model 2. The exact opposite of hypothesis 2a was supported.

Table 10 Relationship chronological age and resource seeking

| | Resource seeking | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**Chronological age** | ,213*<br>,289** | ,231*<br>,294**<br>-,241** |
| **$R^2$** | ,193** | ,251** |
| **$R^2$ change** | ,193** | ,058** |

**p<0,01; *p<0,05; +p<0,10; N=106

**Hypothesis 2b: Chronological age is negatively related to challenges seeking.**

Again, linear regression analysis was used. The dependent variable was challenges seeking. Education level and function level were inserted in block 1 and chronological age was inserted in block 2.

Table 11 shows that neither education level nor function level was significantly related to challenges seeking. Model 1 could only predict 2,2% of the differences in variance in challenges seeking, which was not significant. In Model 2, chronological age was added, but it did not have a significant effect either. Model 2 was also not significant in predicting challenges seeking. As a result, hypothesis 2b was not supported.

Table 11 Relationship chronological age and challenges seeking

| Challenges seeking | | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**Chronological age** | ,175<br>-,088 | ,179<br>-,087<br>-,062 |
| **$R^2$** | ,022 | ,026 |
| **$R^2$ change** | ,022 | ,004 |

**p<0,01; *p<0,05; +p<0,10; N=105

**Hypothesis 2c: Chronological age is positively related to demands reducing.**

Linear regression was used to test this hypothesis (see Table 12). The dependent variable was demands reducing. In block 1, education level and function level were inserted and in block 2, chronological age was added. In Model 1, one can see that function level was significantly negatively related to demands reducing. Apparently, white collar employees show less demands reducing behaviors. Model 1 could explain 11,5% of the variances in demands reducing, which was a significant amount. Model 2 indicated that the relationship between chronological age and demands reducing was significant and positive. Older employees thus have more demands reducing needs. This model was significantly better in predicting demands reducing needs and was able to account for 14,9% of the variances in demands reducing behavior. Hypothesis 2c was supported.

Table 12 Relationship chronological age and demands reducing

| Demands reducing | | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**Chronological age** | -,134<br>-,249* | -,148<br>-,254*<br>,184* |
| **$R^2$** | ,115** | ,149** |
| **$R^2$ change** | ,115** | ,034* |

**p<0,01; *p<0,05; +p<0,10; N=106

### 6.4.4 Moderating effects of subjective age and level of education (hypotheses 3 and 4)

**Hypothesis 3: The relationship between chronological age and goal orientation is moderated by subjective age.**

A linear regression analysis was performed with three blocks to detect any moderating effects. The four types of goal orientation (PAP, PAV, LAP, and LAV) were used as the dependent variable subsequently in the linear regression analyses. Education level and function level were inserted in block 1 in all four analyses. In block 2, the standardized values for chronological age and subjective age were inserted. In block 3, the interaction between the standardized values for chronological age and subjective age was added. This interaction is equal to the multiplication of both standardized variables.

Table 13 shows that education level and function level had no significant effect on PAP and Model 1 was also not significant in predicting the variances in PAP. In Model 2, chronological age and

subjective age were added, but both had no significant effect on PAP. Model 2 could not predict a significant amount of variances in PAP. As can be seen in Model 3, no moderating effect was found, since the interaction between chronological age and subjective age was not significant. Model 3 could not predict significant variances in PAP either.

**Table 13 Relationship chronological age and PAP, moderated by subjective age**

| PAP | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Education level** | ,112 | ,095 | ,091 |
| **Function level** | -,113 | -,099 | -,096 |
| **Chronological age** | | ,149 | ,143 |
| **Subjective age** | | ,132 | ,143 |
| **Interaction Chr.Age*Sub.Age** | | | ,076 |
| **$R^2$** | ,012 | ,037 | ,042 |
| **$R^2$ change** | ,012 | ,025 | ,006 |

**p<0,01; *p<0,05; +p<0,10; N=107

The analysis of PAV is shown in Table 14. Model 1 showed that education level had a highly significant negative effect on PAV. In other words, employees who are highly educated, are more occupied with avoiding to look incompetent or perform badly. Model 1 could significantly explain 16,9% of the variances in PAV. According to Model 2, chronological age and subjective age had no significant effect on PAV, but a trend (p<0,10) could be noticed in chronological age. Model 3 indicates that no moderating effect was found.

**Table 14 Relationship chronological age and PAV, moderated by subjective age**

| PAV | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Education level** | -,425** | -,440** | -,438** |
| **Function level** | ,027 | ,033 | ,031 |
| **Chronological age** | | ,176+ | ,179+ |
| **Subjective age** | | ,060 | ,054 |
| **Interaction Chr.Age*Sub.Age** | | | -,039 |
| **$R^2$** | ,169** | ,196** | ,197** |
| **$R^2$ change** | ,169** | ,027 | ,001 |

**p<0,01; *p<0,05; +p<0,10; N=107

Table 15 shows the analysis of LAP. Education level and function level had no significant effect on LAP, as can be seen in Model 1. This model could not predict a significant amount of variances in LAP. Model 2 shows that chronological age and subjective age also had no significant effect on LAP. Model 2 could not predict a significant amount of variances in LAP. In Model 3, one can see that there was no moderating effect on LAP and the model was not able to predict a significant amount of variances in LAP.

Table 15 Relationship chronological age and LAP, moderated by subjective age

| LAP | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Education level** | -,069 | -,064 | -,065 |
| **Function level** | -,013 | -,006 | -,005 |
| **Chronological age** | | -,114 | -,116 |
| **Subjective age** | | ,051 | ,055 |
| **Interaction Chr.Age*Sub.Age** | | | ,027 |
| **$R^2$** | ,006 | ,026 | ,026 |
| **$R^2$ change** | ,006 | ,020 | ,001 |

**p<0,01; *p<0,05; +p<0,10; N=107

The results of the linear regression analysis for LAV can be found in Table 16. Education level and function level were not significantly related to LAV according to Model 1. However, Model 1 was able to significantly explain 5,6% of the variances in LAV, even though the separate variables had no significant effect. Chronological age and subjective age were added in Model 2 and both had no significant effect on LAV. In Model 3, no moderating effect was found for LAV. In conclusion, hypothesis 3 is not supported.

Table 16 Relationship chronological age and LAV, moderated by subjective age

| LAV | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Education level** | -,156 | -,156 | -,155 |
| **Function level** | -,114 | -,100 | -,101 |
| **Chronological age** | | -,087 | -,085 |
| **Subjective age** | | ,114 | ,110 |
| **Interaction Chr.Age*Sub.Age** | | | -,027 |
| **$R^2$** | ,056* | ,083* | ,084* |
| **$R^2$ change** | ,056* | ,027 | ,001 |

**p<0,01; *p<0,05; +p<0,10; N=107

**Hypothesis 4: The relationship between chronological age and LAP is moderated by level of education.**

This hypothesis was also tested with a linear regression analysis, but education level was not included as a control variable here. Function level was the only control variable and was inserted in block 1. LAP was the dependent variable. In block 2, the standardized values for chronological age and education level were included. The interaction between chronological age and education level was added in block 3 (see

Table 17). According to Model 1, function level had no significant relationship with LAP. Model 2 shows that chronological age and education level had no significant relationship with LAP. Model 3 shows that there was no moderating effect on LAP. Thus hypothesis 4 was not supported.

Table 17 Relationship chronological age and LAP, moderated by education level

| LAP | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Function level**<br>**Chronological age**<br>**Education level**<br>**Interaction Chr.Age*Edu** | -,049 | -,012<br>-,133<br>-,060 | -,012<br>-,132<br>-,060<br>,006 |
| **$R^2$** | ,002 | ,023 | ,023 |
| **$R^2$ change** | ,002 | ,021 | ,000 |

**p<0,01; *p<0,05; +p<0,10; N=107

### 6.4.5 Moderating effects of personal initiative (hypotheses 5a and 5b)

**Hypothesis 5a: The relationship between chronological age and LAP is moderated by personal initiative.**

LAP was the dependent variable in this linear regression analysis. In block 1, education level and function level were inserted. In Block 2, the standardized values for chronological age and personal initiative were added. Lastly, the interaction between chronological age and personal initiative was inserted in block 3. The results can be found in Table 18. Model 1 indicates that education level and function level were not significantly related with LAP. In Model 2, chronological age showed a trend (p<0,10), but is not considered to have a significant relationship with LAP. Personal initiative, on the other hand had a significant positive relationship with LAP. This means that employees who score high in personal initiative, have a higher need to learn new competences. Model 2 however, could not explain significant differences in variances in LAP. In Model 3, one can see that no moderating effect was found for LAP. Therefore, hypothesis 5a was not supported.

Table 18 Relationship chronological age and LAP, moderated by personal initiative

| LAP | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Education level**<br>**Function level**<br>**Chronological age**<br>**Personal initiative**<br>**Interaction Chr.Age*Pers.Ini** | -,069<br>-,013 | -,091<br>,027<br>-,173+<br>,244* | -,095<br>,028<br>-,171+<br>,254*<br>-,035 |
| **$R^2$** | ,006 | ,080 | ,081 |
| **$R^2$ change** | ,006 | ,074 | ,001 |

**p<0,01; *p<0,05; +p<0,10; N=107

**Hypothesis 5b: The relationship between chronological age and challenges seeking is moderated by personal initiative.**

In this linear regression analysis, challenges seeking was the dependent variable. The control variables were education level and function level and both were inserted in block 1. In block 2, the standardized values for chronological age and personal initiative were inserted. In block 3, the interaction between chronological age and personal initiative were added. As can be seen in Model 1, education level and function level had no significant relationship with challenges seeking. The

relationship between chronological age and challenges seeking was not significant, according to Model 2. Personal initiative, however, was highly significantly positively related with challenges seeking, meaning that employees who score high on personal initiative also scored high on challenges seeking. Model 2 was also significantly better in predicting the variances in challenges seeking compared to Model 1. Model 2 could explain 12,4% of the variances. In Model 3, no moderating effect was found. Hypothesis 5b was therefore not supported.

**Table 19 Relationship chronological age and challenges seeking, moderated by personal initiative**

| Challenges seeking | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Education level** | ,175 | ,142 | ,141 |
| **Function level** | -,088 | -,041 | -,040 |
| **Chronological age** | | -,112 | -,111 |
| **Personal initiative** | | ,319** | ,323** |
| **Interaction Chr.Age*Pers.Ini** | | | -,014 |
| **$R^2$** | ,022 | ,124** | ,124** |
| **$R^2$ change** | ,022 | ,101** | ,000 |

**p<0,01; *p<0,05; +p<0,10; N=105

### 6.4.6 Moderating effects of job autonomy (hypotheses 6a and 6b)

**Hypothesis 6a: The relationship between chronological age and LAP is moderated by job autonomy.**

A linear regression analysis was performed to test this hypothesis. The dependent variable was LAP. The control variables education level and function level were inserted in block 1. The standardized values for chronological age and job autonomy were added in block 2. In block 3, the interaction between these two variables was inserted. Model 1 shows that education level and function level were not significantly related to LAP. Model 2 indicates that chronological age and job autonomy had no significant relationship with LAP. No moderating effect as found for LAP in Model 3. Hypothesis 6a was therefore not supported.

**Table 20 Relationship chronological age and LAP, moderated by job autonomy**

| LAP | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Education level** | -,069 | -,047 | -,047 |
| **Function level** | -,013 | ,016 | ,016 |
| **Chronological age** | | -,123 | -,123 |
| **Job autonomy** | | -,101 | -,101 |
| **Interaction Chr.Age*Job.Aut** | | | ,003 |
| **$R^2$** | ,006 | ,032 | ,032 |
| **$R^2$ change** | ,006 | ,026 | ,000 |

**p<0,01; *p<0,05; +p<0,10; N=107

**Hypothesis 6b: The relationship between chronological age and job crafting is moderated by job autonomy.**

In order to test this hypothesis, all three forms of job crafting needed to be studied: challenges seeking, resources seeking, and demands reducing. These three variables were consecutively used as dependent variable in the linear regression analyses. For all analyses, education level and function level were inserted in block 1, which served as the control variables. In block 2, the standardized values for chronological age and job autonomy were added and their interaction was included in block 3.

The results of the analysis for challenges seeking are shown in Table 21. Education level and function level had no significant relationship with challenges seeking according to Model 1. Model 2 indicates that chronological age and job autonomy were not significantly related to challenges seeking. In Model 3, one can see that no moderating effect was found for challenges seeking. Thus no support for hypothesis 6b is found here.

**Table 21 Relationship chronological age and challenges seeking, moderated by job autonomy**

| Challenges seeking | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Education level** | ,175 | ,170 | ,171 |
| **Function level** | -,088 | -,107 | -,107 |
| **Chronological age** | | -,071 | -,072 |
| **Job autonomy** | | ,079 | ,080 |
| **Interaction Chr.Age*Job.Aut** | | | -,012 |
| **$R^2$** | ,022 | ,032 | ,032 |
| **$R^2$ change** | ,022 | ,009 | ,000 |

**p<0,01; *p<0,05; +p<0,10; N=105

Table 22 shows the results for resource seeking. In Model 1, education level and function level were found to have a significantly positive relationship with resource seeking. Thus, employees with higher education and white collar employees showed more resource seeking behavior. This model explained 19,3% of the variances in resource seeking. In Model 2, one can see that the relationship between education level and resource seeking was not significant anymore. Noticing that at the same time, the two additional variables are highly related with resource seeking, this means that education level is not significantly related to resource seeking after all. Furthermore, the relationship between chronological age and resource seeking was highly significant and negative, meaning that older employees showed less resource seeking behavior. The relationship between job autonomy and resource seeking was highly significant and positive. In other words, employees with more job autonomy looked for more resources. This model was significantly better in predicting resource seeking, compared to Model 1. Model 2 was able to explain 33,7% of the variances in resource seeking. In Model 3, no moderating effect was found. Thus no support for hypothesis 6b is found here.

Table 22 Relationship chronological age and resources seeking, moderated by job autonomy

| Resources seeking | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Education level** | ,213* | ,189+ | ,185+ |
| **Function level** | ,289** | ,212* | ,210* |
| **Chronological age** | | -,276** | -,274** |
| **Job autonomy** | | ,315** | ,307** |
| **Interaction Chr.Age*Job.Aut** | | | ,060 |
| **$R^2$** | ,193** | ,337** | ,340** |
| **$R^2$ change** | ,193** | ,143** | ,003 |

**p<0,01; *p<0,05; +p<0,10; N=106

Table 23 shows the analysis of demands reducing. In Model 1, function level was found to have a significant negative effect on demands reducing. Thus white collar workers show demands reducing needs compared to blue collar workers. Model 1 explained 11,5% of the variances in demands reducing. In Model 2, no significant effects were found for chronological age and job autonomy. But, chronological age appeared to show signs of a trend. In Model 3, no moderating effects were found. In summary, hypothesis 6b was not supported.

Table 23 Relationship chronological age and demands reducing, moderated by job autonomy

| Demands reducing | | | |
|---|---|---|---|
| | Model 1<br>β | Model 2<br>β | Model 3<br>B |
| **Education level** | -,134 | -,153 | -,154 |
| **Function level** | -,249* | -,264* | -,264* |
| **Chronological age** | | ,180+ | ,180+ |
| **Job autonomy** | | ,038 | ,035 |
| **Interaction Chr.Age*Job.Aut** | | | ,017 |
| **$R^2$** | ,115** | ,150** | ,150** |
| **$R^2$ change** | ,115** | ,035 | ,000 |

p<0,01; *p<0,05; +p<0,10; N=106

### 6.4.7 Effects of function level (hypothesis 6c)

**Hypothesis 6c: Older blue collar workers show lower levels of job crafting and job autonomy in comparison with older white collar workers.**

First, the relationship with job crafting was tested with an analysis of variance (ANOVA). The dependent variable was subsequently challenges seeking, resource seeking, and demands reducing. The covariate was education level, serving as the control variable. Age group and function level were inserted as fixed factors. A low value for age group represented the employees who were younger than 50 years and a high value for age group represented the employees who were 50 years or older. The descriptive statistics for age group can be found in

Table 24. The younger aged group counts 71 employees who are, on average, 41,52 years old with a standard deviation of 5,82 years. The older aged group counts 43 employees who are, on average, 54,81 years old with a standard deviation of 4,37 years.

Table 24 Descriptive statistics age groups

| | Count | M | SD |
|---|---|---|---|
| **Age <50 years** | 71 | 41,52 | 5,82 |
| **Age ≥50 years** | 43 | 54,81 | 4,37 |

Mean (M) and standard deviation (SD) are in years

The ANOVA revealed that function level was significantly related to resource seeking (F(1, 102) = 7,055, *p* = ,009) and demands reducing (F(1, 102) = 4,538, *p* = ,036). For challenges seeking, a significant effect was found for the interaction between function level and age group. First, the direct effects of function level will be discussed, the interaction effects will be discussed hereafter.

A linear regression analysis was performed to determine the direction and the effect size of the relationship between function level and resource seeking and demands reducing. In these linear regression analyses, resource seeking and demands reducing were subsequently used as the dependent variable. Education level was the only control variable and was inserted in block 1. In block 2, function level was added (see Table 25). In model 1, education level was found to have a highly significant positive effect on resource seeking. In other words, higher educated employees showed more resource seeking behavior. Model 1 explained for 13,7% of the variances in resource seeking. In Model 2, function level was found to have a highly significant positive effect on resource seeking. Model 2 was also significant better in predicting resource seeking. This model was able to explain 19,2% of the variances in resource seeking. These findings provide partial support for hypothesis 2d.

Table 25 Relationship function level and resource seeking

| **Resource seeking** | | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level** | ,370** | ,230*<br>,274** |
| **$R^2$** | ,137** | ,192** |
| **$R^2$ change** | ,137** | ,055** |

**p<0,01; *p<0,05; +p<0,10; N=107

The linear regression analysis for demands reducing can be found in

Table 26. Model 1 indicated that education level had a highly significant negative relationship with demands reducing. Apparently, higher educated employees showed less demands reducing behavior. This Model was able to significantly explain 7,4% of the variances in demands reducing. In Model 2, function level was added and this variable had a significant negative relationship with demands reducing. Thus white collar employees showed less demands reducing behavior. Model 2 was significantly better in predicting demands reducing behavior. It explained 11,4% of the variances in demands reducing. This analysis points out that the exact opposite of hypothesis 2d is true.

Table 26 Relationship function level and demands reducing

| Demands reducing | | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level** | -,271** | -,151<br>-,234* |
| **$R^2$** | ,074** | ,114** |
| **$R^2$ change** | ,074** | ,040* |

**p<0,01; *p<0,05; +p<0,10; N=107

The ANOVA also indicated a significant effect of the interaction between function level and age group on challenges seeking, $F(1, 101) = 4{,}182$, $p = ,043$ (see Appendix D, Figure 11). For older employees, there is a significant difference in challenges seeking behavior between blue collar workers and white collar workers. Older blue collar workers have a higher need for challenges in their job compared to older white collar workers, who show lower needs for challenges. These findings suggest that the exact opposite of hypothesis 2d is true.

After analyzing job crafting, the relationship with job autonomy was tested with an analysis of variance (ANOVA). The dependent variable was job autonomy. The covariate was education level, serving as the control variable. Age group and function level were inserted as fixed factors. The ANOVA revealed a significant effect for the interaction between function level and age group on job autonomy, $F(1, 103) = 4{,}810$, $p = ,031$ (see Appendix D, Figure 12). A remarkable difference was identified in the level of job autonomy between older blue collar workers and older white collar workers. Older blue collar workers indicate that they have a relative low level of job autonomy, while older white collar workers specify a relatively high level of job autonomy. This provides partial support for hypothesis 2d.

Overall, the analyses provide mixed results for hypothesis 2d. Older blue collar workers do exhibit less resource seeking behavior and indicate lower levels of job autonomy, which provides support for hypothesis 2d. In contrast, older blue collar workers exhibit higher demands reducing and challenges seeking behaviors, which support the exact opposite of hypothesis 2d.

## 6.5 Summary quantitative empirical findings

The overview of the relationships found, is illustrated in Figure 6. Chronological age appeared to have a positive effect on OCB (overall) and OCB (self-report), but no effect was found for OCB (peer). This indicates that there were significant differences between the self-report scores and peer scores for OCB. Indeed, both scores were not significantly correlated (r = ,190). If an individual believed he or she is exhibiting OCB, this might not be perceived as such by his or her peers. Moreover, chronological age was negatively related to resource seeking. This means that the exact opposite of the hypothesized relationship was confirmed. Younger employees showed more resource seeking behavior and this could be explained by their need for advice and information when they encounter novel situations in their work.

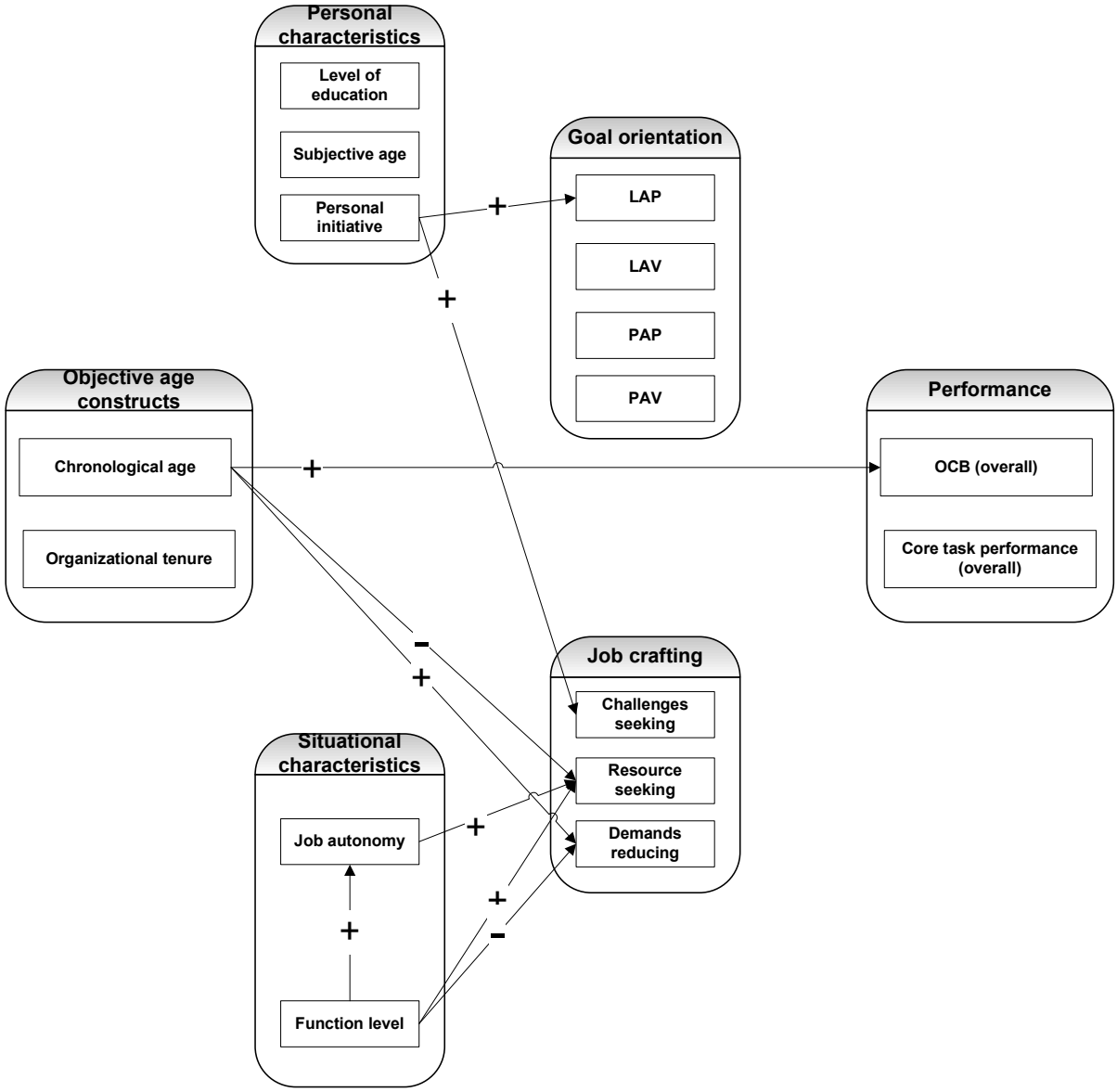


Figure 6 Overview relationships

No mediating effects were found for goal orientation and no moderating effects were found for the relationship between chronological age and goal orientation. However, a positive relationship was found between personal initiative and LAP.

No moderating effects were found either for the relationship between chronological age and job crafting. However, several antecedents for job crafting were found. Personal initiative was positively related to challenges seeking. The relationship between chronological age and resource seeking appeared to be negative. Function level and job autonomy were both found to be positively related to resource seeking. Lastly, function level was negatively related to demands reducing, while chronological age was positively related to demands reducing, as was expected.

For the age groups, significant differences were found for challenges seeking and job autonomy. Older blue collar workers showed significant higher levels of challenges seeking compared to older white collar workers. For job autonomy, the exact opposite relationship was found. Older blue collar workers perceived lower levels of job autonomy compared to older white collar workers.

## 6.6 Interviews

Based on these findings, interviews were held with a variety of employees, in terms of age and function level, in order to discuss several intervention strategies that WBL can use to motivate their older employees to perform better. A detailed outline of the interview can be found in Appendix E. The intervention strategies were all focused on either job crafting or job autonomy. This is because these are the constructs that WBL can modify, which do not require drastic measures from WBL. To clarify this, chronological age is for instance a construct that can also be modified. WBL could for example fire older employees and hire younger employees. But since this intervention would require drastic changes at WBL, it is not considered to be an appropriate intervention. The results of these discussions are discussed below. First, job crafting is discussed, followed by job autonomy.

### 6.6.1 Job crafting

As mentioned before, job crafting is assumed to lead to more satisfaction (Wrzesniewski and Dutton, 2001) and satisfaction in turn leads to better performance (Petty et al., 1984). Consequently, it is important for employees to be able to exhibit job crafting. All three job crafting aspects (resource seeking, challenges seeking and demands reducing) are discussed below.

**Resource seeking –** One aspect of job crafting is resource seeking. Chronological age appeared to have a negative relationship with resource seeking. The interviews assumed that the resource considered here was the amount of advice an employee looks for. Younger employees more often need advice and the blue collar interviewees in particular feel that the younger blue collar employees are given full responsibility over their tasks too quickly. White collar interviewees declared that they did not perceive any difference in resource seeking between younger and older white collar employees. The older blue collar interviewees indicated that all older blue collar employees are keen to share their knowledge with younger colleagues, which confirms the findings of Stamov-Roβnagel and Hertel (2010) and Zappalà et al. (2008). Since the older employees want to share their knowledge and the younger employees want to learn new knowledge, a longer mentoring project would satisfy both desires. In addition, it would augment the resource seeking behaviors of the younger employees, and thus increase their job crafting behaviors, their satisfaction and their performance levels.

**Challenges seeking –** The older blue collar employees in particular showed high scores for challenges seeking behavior. The blue collar interviewees indicated that they feel there are almost no challenges in their job and there are not many growth or promotional opportunities within the blue collar jobs. This lack of novel challenges was also acknowledged by most of the white collar employees, except for two of them. They stated that there are sufficient growth opportunities to white collar functions. However, these were not the challenges the older blue collar workers were looking for. They primarily wanted challenges in their current blue collar jobs. WBL can provide these challenges. One white collar interviewee mentioned that blue collar employees can be assigned to tasks that are currently being outsourced. They are qualified to perform those tasks.

White collar workers, both younger and older, did not exhibit much challenges seeking behavior. The white collar interviewees indicated that their job is already challenging as it is and they have a significant workload, which impedes their opportunities to seek challenges.

**Demands reducing –** Chronological age had a positive effect on demands reducing. This is possibly caused by the physical demands in the blue collar functions and mental demands in the white collar function. The older blue collar interviewees indeed declared that they have difficulties with the physical demands when working in the open air when the temperature is very high or very low. This problem can be countered by giving the older blue collar employees as much indoor tasks as possible in extreme temperatures. Even though this already takes place at WBL, the older blue collar workers are still not satisfied. One white collar interviewee, however, indicated that it will probably lead to dissatisfaction at the younger blue collar workers when they are the ones that are always assigned the tasks in the open air in extreme temperatures. So it would be difficult to fully satisfy the needs of the older blue collar workers. Working in these extreme temperatures is unfortunately part of the job and WBL are unable to reduce these job demands for the older blue collar workers.

The job demands white collar employees are facing and would like to reduce are likely the fixed work schedules. Older employees want the opportunity to work part-time (Streb et al., 2008) or to have more flexible work schedules (Kanfer & Ackerman, 2007). But this is not confirmed by the white collar employees at WBL. The white collar interviewees made clear that these options are already available at WBL. The job demand they experience is the continuous implementation of new applications or technological devices. They are rather reluctant in accepting new technology, as they consider it to be yet another new aspect they need to learn. Since they have always performed their tasks adequately without this new technology, they do not see the benefit of learning a new way of working. The white collar interviewees all agreed that it is important to explain why these new technologies are important. They currently do not know why it is important and are therefore reluctant to learn how to use this technology. For each new technology, WBL is recommended to explain in a meeting why the new technology is implemented and why it is important for WBL.

### 6.6.2 Job autonomy

Job autonomy was positively linked to resource seeking, which means that was positively related to job crafting. As mentioned before, job crafting can indirectly lead to higher performance, so as a result it is important to enlarge job autonomy. Blue collar workers perceived lower job autonomy compared to white collar workers. This confirmed the findings of Berg et al. (2010). The tasks of blue collar functions were prescribed much more compared to the tasks in white collar functions. This was confirmed by the interviewees. The blue collar workers had almost no control over their daily schedules, due to the loss of control over their daily and weekly schedules. This task was now taken over by the planning staff. The blue collar interviewees indicated that this was a serious issue. In order to create more job autonomy for the blue collar workers, the planning staff could create a list of tasks that need to be completed in a particular week. The blue collar employee then needs to plan these tasks in the week to his or her own preferences. This will increase the job autonomy, which leads to more resource seeking behavior and thus more job crafting behavior. This eventually leads to better performance.

White collar employees have more job autonomy. They have the freedom to choose the location they would like to work. This can be at a sewage treatment plant, the head office or at home. They also have more freedom to plan their tasks for the week. The white collar interviewees indicated that they have sufficient job autonomy and do not need more job autonomy.

# 7. Discussion

## 7.1 Summary

This research intended to attain a better understanding of the effects of chronological age on motivation and how this eventually affects performance. In this research, employees of a Dutch non-profit organization were studied. Data was gathered via a questionnaire survey, which was held at a Dutch wastewater treatment organization, Waterschapsbedrijf Limburg (WBL). Interviews were held with ten questionnaire participants after the questionnaires. The main purpose of these interviews was to discuss potential intervention strategies that WBL could use to motivate their older employees.

### 7.1.1 Relationship between chronological age and performance

Chronological age was found to be positively related to Organizational Citizenship Behavior (OCB), which supports the findings of Ng and Feldman (2008) and Zacher et al. (2010). This means that older employees exhibited more behavior that supports the organizational performance, but was not part of their core tasks. The interviews made clear that they are less reluctant to work overtime and more often give advice to their colleagues. They consider this as part of their job. However, no relationship was found between chronological age and the peer scores for OCB. This is likely due to employees not recognizing the help they receive from others, but only remembering the help they offered to others. This is also confirmed by the interviewees.

For the relationship between chronological age and core task performance, no relationship was found. This is in line with the findings of Ng and Feldman (2008), as older employees only decline in their physical performance (Streb et al., 2008; Zacher & Frese, 2009). Since the physical demands for the tasks at WBL are limited, employees are provided with tools to perform the physical duties, no significant differences were found in core task performance between older and younger employees. Another reason that no relationship was found between chronological age and core task performance is that blue collar workers cannot perform better than their colleagues since they all have a prescribed way of working. White collar workers also cannot surpass their goals. The relationship between organizational tenure and performance was also explored, but no effects were found.

### 7.1.2 Mediating effects of motivation

The relationship between chronological age and performance was expected to be mediated by motivation. Two motivational constructs were studied: goal orientation and job crafting. For both motivational constructs, no mediating effects were found.

### 7.1.3 Relationship between chronological age and goal orientation

Chronological age was expected to be negatively related to LAP and a positively to LAV, but no effect was found. This means that all employees, regardless of their age, wanted to learn new knowledge avoid deterioration. The younger employees wanted to develop themselves (Stamov-Roβnagel & Hertel, 2010) and did not want to lose any skills or knowledge. The older employees wanted to stay current in the job due to their fear to lose their job otherwise (Kanfer & Ackerman, 2007). The absence of a relationship between chronological age and goal orientation, explains why no mediating effect was found for goal orientation in the relationship between chronological age and performance, and also why no moderating effect was found for subjective age, level of education,

job autonomy, and personal initiative on the relationship between chronological age and goal orientation.

### 7.1.4 Relationship between chronological age and job crafting

The second motivational construct that was examined was job crafting. Job crafting was composed of three aspects: resource seeking, challenges seeking, and demands reducing. Chronological age was expected to be positively related to resource seeking, but a negative relationship was found. While Kanfer and Ackerman (2007) indicated that older employees want to have a job with security and better relationships with colleagues, these findings were not supported in this study. A possible explanation for this negative relationship is that older employees are more experienced and do not require as much additional information and advice as the younger employees do. This was also confirmed in the interviews.

The relationship between chronological age and challenges seeking behavior was expected to be negative. However, a more complex relationship was found. No significant relationship was found for chronological age on its own, but a significant relationship was found for the interaction between chronological age and function level. The older blue collar workers showed high scores for challenges seeking behavior and the older white collar workers showed low levels of challenges seeking behavior. The former is likely caused by the monotonous work they do. Their actions are predefined and there are not many novel situations they encounter in their jobs. The older blue collar interviewees indicated that the blue collar jobs do not offer many growth or promotional opportunities. The white collar workers had low levels of challenges seeking, since they had a significant workload, which impeded their possibilities to seek challenges. In addition, the work they do and the rules concerning the orders they need to process change rapidly, which already makes their job challenging. This also explains why the relationship between age and challenges seeking was not moderated by personal initiative. The interviewees indicated that they are satisfied with their current jobs and they have no immediate needs to seek other challenges in their jobs.

As was expected, chronological age was found to be positively related to demands reducing behavior. The older blue collar workers indicated high demands in the physical aspects of their job. In the interviews, they indicated that they had difficulties with their tasks in the open air when the temperature is very high or very low. The older white collar employees mentioned their high workloads. They were usually employed in the manager functions. Both groups wanted to reduce their job demands, even though the white collar workers showed relatively lower demands reducing behaviors compared to the blue collar workers. The interviews made clear that the white collar employees were overall content with the workloads they have. They considered this to be part of a white collar function.

### 7.1.5 Effects of personal and situational characteristics

In addition, the effects of several personal and situational characteristics were studied. These constructs were expected to moderate the relationship between chronological age and motivation. No moderating effects were found though. However, the situational characteristics (job autonomy and function level) appeared to have a direct relationship with job crafting. Job autonomy was positively related to resource seeking behavior. An explanation for this finding was that employees with more job autonomy have jobs that are less prescribed. They had more freedom in how they perform their tasks, in which order, and to a certain extent, when they do certain tasks. Because

these jobs require more individual input, these employees tended to seek more information or advice from their colleagues. This made them better able to perform their tasks adequately and this additional information was needed because there is no predetermined way of performing the tasks. This was confirmed by the interviewees.

In addition, function level was also positively related to resource seeking. This means that white collar employees show more resource seeking behavior and blue collar employees show less. The job of a white collar employee is rather broad and they always required information and advice to successfully accomplish their tasks. The blue collar employees showed less resource seeking behavior because their tasks were clearly defined, so they know what they need to do and how to do it. They did not require any additional resources to perform their tasks.

### 7.1.6 Effects of situational characteristics among each other

Lastly, the situational characteristics influenced each other. Function level was found to be positively related to job autonomy. Blue collar workers perceived lower job autonomy compared to white collar workers. This confirms the findings of Berg et al. (2010). The blue collar workers had a much more challenging job a few years ago, when they were responsible for their own work schedule. Now, a planning staff was made responsible for these work schedules. In addition, the tasks of blue collar functions were prescribed much more detailed compared to the tasks in white collar functions. The white collar employees acknowledged they have more job autonomy compared to blue collar workers.

### 7.1.7 Effects of age groups

When comparing the age groups, the older employees (aged 50 years and older) showed higher levels of PAV. Older employees were more experienced and their peers expected them to be able to perform their tasks well above average. Younger employees were not expected to be able to individually accomplish all tasks. The interviews confirmed this. Older blue collar employees indeed tried to avoid looking incompetent. The older employees felt the pressure to perform excellent and did not want their peers to see them failing to finish a task. For white collar employees, PAV was observable in the use of new technology. Older white collar employees had more difficulties in using new technologies properly and the younger employees were embracing new technology much more rapidly.

## 7.2 Research questions answers

With the findings from this research, the research questions can now be answered.

**Research question 1:** What are the effects of goal orientation and job crafting on the relationship between age and performance?

No mediating effects were found for goal orientation and job crafting in the relationship between chronological age and performance. Moreover, no significant relationship was found between chronological age and goal orientation. These findings confirmed that goal orientations are rather stable personality characteristics (Janssen & Van Yperen, 2004). On the other hand, significant effects were found for the relationship between chronological age and job crafting. Chronological age appeared to be negatively related to resource seeking. In addition, job crafting is positively related to satisfaction (Wrzesniewski and Dutton, 2001) and satisfaction in turn leads to better performance (Petty et al., 1984).

**Research question 2:** What are the effects of subjective age, level of education, personal initiative, organizational tenure, and job autonomy on the relationship between age and motivation?

For all these constructs, no moderating effect was found on the relationship between chronological age and motivation. However, some of these constructs did have a direct relationship with goal orientation or job crafting. Personal initiative was found to have a positive relationship with LAP and with challenges seeking. The relationship between chronological age and resource seeking appeared to be negative. Function level and job autonomy were both found to be positively related to resource seeking. Lastly, function level was negatively related to demands reducing, while chronological age was positively related to demands reducing, as was expected.

**Main research question:** What are the effects of age on performance?

First, a direct positive relationship was found between chronological age and OCB. Second, a relationships were found between chronological age and job crafting. Chronological age appeared to be negatively related to resource seeking and positively to demands reducing. This means that chronological age is related to job crafting both negatively and positively. Knowing that job crafting creates more satisfaction (Wrzesniewski and Dutton, 2001) and satisfaction leads to better performance (Petty et al., 1984), one cannot conclude that job crafting positively contributed to the relationship between chronological age and performance or negatively. In conclusion, chronological age contributed to OCB positively and had an indirect effect on performance via job crafting. This indirect effect is not exclusively positive or negative.

## 7.3 Managerial implications

In addition to the theoretical contributions described above, this study has developed intervention strategies that can be used in practice. The quantitative empirical findings demonstrated several significant relationships and based on these findings, several intervention strategies were developed to motivate older employees to perform better. These intervention strategies were discussed with ten employees at WBL by interviewing them. Based on the interviews, the feasibility of the intervention strategies were determined and the feasible intervention strategies are discussed below.

### 7.3.1 Job autonomy

One of the most important concerns the younger and older blue collar interviewees expressed was their lack of job autonomy. The white collar workers were satisfied with their level of job autonomy. This problem started to arise since the planning employees were made responsible for making the work schedules for the blue collar workers. These schedules were not always flawless. There were occasions where a blue collar worker was planned in two parallel tasks, which means that this employee was required to perform two completely different tasks. This never happened when the blue collar workers were responsible for their own work schedules. They also point out that the planning staff was getting alienated from the work the blue collar workers perform, which made it harder for the planning employee to make decisions regarding the work of the blue collar workers. The blue collar workers feel they have no control over their job anymore and they feel it is a high priority to enlarge their job autonomy. From the organization's perspective, it would also seem sensible to increase the blue collar workers' job autonomy. First, job autonomy is positively related

to job crafting, which in turn is positively related to performance, albeit indirectly. Second, the level of job autonomy can be modified by WBL rather easily in terms of costs and length of implementation.

One possible strategy to increase job autonomy would be to let the older blue collar workers and the planning staff cooperate in making the work schedule. The blue collar worker would be responsible to make sure that no parallel tasks are scheduled and the planning employee would be responsible for the availability of working equipment and machines. Another strategy is to appoint a list of tasks to a group of blue collar workers at the start of each week. The group would then be made responsible for the successful execution of these tasks at the end of the week. They will need to divide the tasks amongst each other and will need to plan their own schedules for the week. The older employees are experienced enough to make such a planning, especially since they have had these responsibilities in the past, before a planning staff was installed. Lastly, job rotation can provide a solution for the lack of job autonomy in the blue collar jobs. Since the employees in these jobs are specialized in their own area, job rotation on a weekly or monthly basis will not benefit the organizational performance. However, giving these employees the opportunity for job rotation each year might not hinder their performance much. Employees could be given the opportunity each year to indicate which job they would like to perform. Older employees are expected to prefer job functions in which they have a greater advising or supporting responsibility (Stamov-Roβnagel & Hertel, 2010; Zappalà et al., 2008). It is highly recommended to make these changes, as it is a major concern for the older blue collar workers.

### 7.3.2 Challenges seeking

A second important issue that the blue collar interviewees wanted to change in their job was the lack of challenges. The white collar employees exhibited no challenges seeking behavior. An explanation for the absence of this behavior is their high workload. Even though this might be a legit explanation, there are still opportunities to stimulate white collar employees to seek challenges. Challenges seeking is an element of job crafting and, as a result, is positively related to performance. It is therefore beneficial to stimulate their challenges seeking behavior. One way to increase their challenges seeking behavior is to provide them with the opportunity to take up additional novel tasks that would serve as a replacement for a subset of their current tasks. Giving employees the opportunity to replace tasks should motivate them to seek challenges and as a result increase their performance. This intervention is optional though, since the white collar workers are currently satisfied with the challenges in their job.

In contrast, the blue collar interviewees indicated that they want more challenges in their job. Blue collar workers basically perform routine tasks every day. Their tasks lack novelty. In order to add more challenging aspects to their jobs, they could be offered the option to take on tasks that are currently being outsourced, for example the work in the pumping stations. These installations are used to transport waste water to higher levels or over long distances. The tasks that need to be performed at these pumping stations include replacing pumps and cleaning the stations. Blue collar workers are qualified to perform these outsourced tasks and WBL could offer them the opportunity to work at the pumping stations. This would result in a challenge for the blue collar workers and it would also reduce costs for WBL. So this intervention will benefit both the blue collar workers satisfaction and WBL's finances, which makes it highly recommended to implement this intervention.

### 7.3.3 Demands reducing

Overall, the white collar workers were satisfied with their jobs but the demands in their jobs were considered to be an issue. Moreover, the older employees exhibited more demands reducing behavior. Demands reducing is also a job crafting element and is consequently positively related to performance. The demands the older white collar employees wanted to reduce are primarily the continuous implementations of new technology. Mastering a new technology is considered to be a demand. One way to solve this issue is by changing their perception of mastering a new technology as part of their job or even as a challenge in their job. The reason why they perceive it as a demand is possibly due to the difficulties they have in mastering it. Once they perceive the new technology as realistic to master, they might not consider it as a demand anymore but as part of their job or even as a challenge. In order to achieve this, a solution would be to provide them with more assistance in learning how to use the new technology. At present, when a new application or software package is introduced, clearly instructed manuals are distributed among the employees. All employees are expected to be able to use the new technology after reading the manual. However, some employees still have difficulties afterwards, according to the interviewees. These employees are subsequently expected to look for help on their own. But the interviews made clear that they were rather reluctant to take initiative and ask for help, but were more likely to ask for help when help is actively offered. For example, when a software administrator visits the employees personally and asks them if they have any questions, employees will explain whether they need any help. So in order to reduce the perception of learning new technology to be a demands for older white collar employees, active assistance should be provided. Since suggestion is rather easy to implement, WBL is recommended to make these changes, as it will likely diminish the demands reducing behavior of older white collar employees.

Older blue collar employees also exhibited demands reducing behavior. They would like to diminish the physical demands in their job. These older employees have more difficulties when working in the open air in very high or very low temperatures. The planning staff could take these limitations into consideration when planning the daily schedules for the older blue collar workers. Appointing them to tasks that are less physically demanding or ensuring the availability of tools to make the work physically lighter, are ways to counter this demands reducing behavior. This intervention would reduce the demands in their jobs, leading to more satisfaction and better performance. However, since this can frustrate the younger blue collar employees, as they will be the ones that are assigned to working in the open air in extreme temperatures most of the time, this intervention would not be the first priority for WBL. Also because there are better alternatives available.

## 7.4 Limitations and future research directions

This thesis describes the relationship between age and performance as complete and accurate as possible, however like every research it has its limitations.

First, there were four variables used in the linear regression analyses that were not normal distributed: job autonomy, LAP, LAV, and OCB (peer). Linear regression analysis assumes normal distributed variables, thus using non-normal distributed variables might result in non accurate results. Since these variables were analyzed with linear regression, their findings need to be interpreted with care.

Second, this is a cross-sectional study. This means that the data obtained from the questionnaires and the interviews reflects the feelings and thought of the employee at that specific day. An additional limitation of a cross-sectional study is that causality cannot be supported. Causal relationships can only be found with longitudinal studies.

Third, the results of this study might not be generalizable. WBL is a non-profit organization and the findings here might not be the same for all companies. Fourth, the majority of the participants and employees at WBL are male. This might influence the organizational culture at WBL and might also influence the perceptions and thought of the employees. Lastly, the questionnaires were filled in, in the presence of the peers. This could have biased the answers provided in the questionnaire.

This thesis has provided additional insights in the relationship between age, motivation, and performance. Nevertheless there are several interesting topics that can contribute to a better understanding of the age performance relationship.

- Does the masculinity of a culture for instance influence the relationship between chronological age and motivation? Hofstede (1983) has stated that masculine societies value showing off, performing, achieving something visible, and making money. Feminine societies value not showing off, putting relationships with people before money, and helping others. The Netherlands are considered to embrace a feminine culture (Hofstede, 1983). Does this mean that Dutch employees exhibit less challenges seeking behavior compared to employees in a masculine culture? What are the influences of national culture on the relationship between chronological age and job crafting?
- In addition, does gender influence the relationship between chronological age and motivation? WBL considers itself to be a high performance organization and they want their employees to achieve high individual performances. De Pater et al. (2009) found that in a context where individual performances are demanded, women choose to perform fewer challenging tasks than men. But do these behaviors change when aging?
- It is also interesting to study the variables workload and job complexity, and how they affect the age performance relationship. Since older employees are more experienced, they can apply learning form experience, whereas younger employees have to use reasoning to find new solutions for each problem (Spitulnik, 2006). This makes older employees more likely to perform better under high demands. But are older employees better able to cope with a high workload and job complexity compared to younger employees?
- Furthermore, aging is related to changes in personality traits (Kanfer & Ackerman, 2004; Kanfer & Ackerman, 2007). How do these changes affect goal orientation? Are there traits that are positively related to a learning goal orientation? Seijts et al. (2004) found that individuals with a learning goal orientation show feedback-seeking behavior and consequently show higher levels of performance. So if a particular personality trait would be positively related to a learning goal orientation, this could have a positive effect on one's performance.

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## Appendix A

# Deel 1

Technische Universiteit Eindhoven University of Technology

# Leeftijd en werkprestatie Waterschapsbedrijf Limburg Maart 2011

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Vul hieronder uw naam in (voor- en achternaam):

*Deze naam wordt alleen gebruikt om de 2 delen van deze enquête te kunnen koppelen. Het wordt niet meegenomen of gebruikt in de data analyse en wordt niet verstrekt aan WBL of aan derden.*

### Instructie

Voor u ligt deel 1 van de vragenlijst over leeftijd en werkprestatie. Deze vragenlijst is een onderdeel van mijn afstudeeronderzoek voor de master studie Innovation Management aan de Technische Universiteit Eindhoven. In dit onderzoek zal de relatie tussen leeftijd en prestaties op het werk onderzocht worden en hoe deze relatie wordt beïnvloed door andere factoren, zoals subjectieve leeftijd (hoe oud iemand zich voelt), het tonen van initiatief en de mate van autonomie op het werk.

Voorafgaand aan het invullen van de vragenlijst willen we u graag nog wijzen op enkele aandachtspunten:

Het invullen van deel 1 van de vragenlijst zal ongeveer **20 minuten** van uw tijd in beslag nemen. De door u verstrekte informatie wordt **strikt vertrouwelijk** behandeld en **anoniem** gehouden voor WBL. De naam die u hebt ingevuld op het voorblad zal WBL nooit te zien krijgen. Deze naam wordt alleen gebruikt om de 2 delen van deze vragenlijst te kunnen koppelen. Zodra dit is gebeurd, wordt het voorblad gescheiden van de rest van de vragenlijst en zal het voorblad worden vernietigd. De gegevens van de anonieme vragenlijsten zullen vervolgens gebruikt worden in de data-analyse en verstrekt worden aan WBL.

Op de volgende pagina start de vragenlijst. Eerst wordt van u gevraagd een aantal persoonlijke gegevens in te vullen. Daarna volgt een aantal stellingen. Elke stelling bevat een aantal antwoordmogelijkheden. De bedoeling is dat u bij elke stelling de antwoordmogelijkheid aanvinkt die het meest van toepassing is. Voor het slagen van het onderzoek is het erg belangrijk dat u alle vragen invult. Als u twijfelt over het antwoord, dan vragen we u alsnog een keuze uit de gegeven antwoordmogelijkheden te maken. Er bestaan geen foute antwoorden, u dient het antwoord te geven dat het meest bij uw mening aansluit. Houd u er rekening mee dat de antwoordschalen veranderen gedurende de vragenlijst. Om misverstanden te voorkomen, wordt er daarom bij elk onderdeel in de vragenlijst een korte toelichting gegeven over de antwoordschaal.

Alvast hartelijk dank voor uw medewerking!

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## Deel 1: In dit deel wordt uw mening gevraagd over uw persoonlijke eigenschappen en over uw gedrag en prestaties op uw werk.

### Achtergrondgegevens

*Hieronder volgt een aantal vragen over uw achtergrond.*

| | | | |
|---|---|---|---|
| 1. | Wat is uw geslacht? | ☐ | Man |
| | | ☐ | Vrouw |
| 2. | Wat is uw leeftijd? | …. | Jaar |
| 3. | Wat is de hoogste opleiding die u heeft afgerond? | ☐ | Lagere school |
| | | ☐ | MAVO, LBO |
| | | ☐ | HAVO, MBO |
| | | ☐ | VWO |
| | | ☐ | HBO |
| | | ☐ | WO |
| | | ☐ | Anders, namelijk: |
| 4. | Heeft u in de laatste 2 jaar nog een opleiding gevolgd? | ☐ | Nee |
| | | ☐ | Ja, op MBO niveau |
| | | ☐ | Ja, op HBO niveau |
| | | ☐ | Ja, op WO niveau |
| | | ☐ | Ja, anders namelijk: |
| 5. | Hoeveel werkervaring heeft u? | …. | Jaren |
| 6. | Hoeveel jaar bent u werkzaam bij WBL? | …. | Jaren |
| 7. | Heeft u voor uw aanstelling bij WBL in het bedrijfsleven gewerkt? | ☐ | Nee |
| | | ☐ | Ja |
| 8. | Hoeveel jaar is het geleden dat u in het bedrijfsleven hebt gewerkt? | ☐ | 0-3 jaar |
| | | ☐ | 3-5 jaar |
| | | ☐ | 5-10 jaar |
| | | ☐ | 10+ jaar |
| 9. | Wat is de omvang van uw aanstelling in uren per week volgens uw contract? | …. | Uren |
| 10. | Wat is uw huidige functie? | | |
| 11. | Hoeveel jaar bent u werkzaam in uw huidige functie? | …. | Jaren |
| 12. | Is uw functieniveau sinds 1 januari 2004 nog veranderd? | ☐ | Nee |
| | | ☐ | Ja |
| 13. | In welk team werkt u?(svp één hokje aankruisen) | | |
| | ☐ Bouwzaken en afvalwaterketen | ☐ | Operations |
| | ☐ ICT & Innovatie | ☐ | P&C |
| | ☐ Onderhoud | ☐ | P&O |

## Subjectieve inschatting leeftijd

*Vaak voelen mensen zich jonger of ouder dan hun echte leeftijd. Hieronder wordt gevraagd naar uw mening over uw subjectieve leeftijd. Kies bij elke uitspraak het antwoord dat het beste omschrijft hoe u zich voelt over uw leeftijd op dit moment. De antwoordschaal loopt van "een stuk jonger dan mijn leeftijd (1)" tot "een stuk ouder dan mijn leeftijd (7)".*

| | | Een stuk jonger dan mijn leeftijd | Jonger dan mijn leeftijd | Enigszins jonger dan mijn leeftijd | Even oud als mijn leeftijd | Enigszins ouder dan mijn leeftijd | Ouder dan mijn leeftijd | Een stuk ouder dan mijn leeftijd |
|---|---|---|---|---|---|---|---|---|
| 1. | Vergeleken met de meeste mensen van mijn leeftijd, voel ik me vaak… | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. | Vergeleken met de meeste mensen van mijn leeftijd, zie ik er vaak … uit. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. | Mijn interesses en activiteiten zijn vergelijkbaar met mensen die … zijn. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. | Mijn vrienden (van hetzelfde geslacht) behandelen mij alsof ik … ben. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. | Mijn vrienden (van het andere geslacht) behandelen mij alsof ik … ben. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## Temperament

*Hieronder volgen enkele uitspraken over uw gemoedstoestand in het algemeen. Kies bij elke uitspraak het antwoord dat het beste bij u past. De antwoordschaal loopt van "Helemaal mee oneens (1)" tot "Helemaal mee eens (7)".*

| | | Helemaal mee oneens | Mee oneens | Enigszins mee oneens | Niet mee eens en niet mee oneens | Enigszins mee eens | Mee eens | Helemaal mee eens |
|---|---|---|---|---|---|---|---|---|
| 1. | Van nature ben ik een erg nerveus persoon. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. | Nadenken over de dingen die ik wil, stimuleert me echt. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. | Er is niet veel voor nodig om me zorgen te laten maken. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. | Wanneer ik mogelijkheden zie voor iets dat ik leuk vind, raak ik meteen enthousiast. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. | Er is niet veel voor nodig om mij enthousiast en gemotiveerd te krijgen. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. | Angst en onrust voel ik intens. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. | Ik reageer heel sterk op slechte ervaringen. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. | Ik ben altijd alert op positieve mogelijkheden en ervaringen. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. | Wanneer het erop lijkt dat er iets slechts zou kunnen gebeuren, ervaar ik een sterke drang om te vluchten. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. | Wanneer me goede dingen overkomen, raakt me dat heel sterk. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. | Wanneer ik iets wil, voel ik een sterk verlangen om er achteraan te gaan. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. | Ik kan me makkelijk slechte dingen voorstellen die me zouden kunnen overkomen. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## Initiatief nemen

*Hieronder volgen enkele uitspraken over initiatief nemen op uw werk. Kies bij elke uitspraak het antwoord dat het beste bij u past. De antwoordschaal loopt van "Helemaal mee oneens (1)" tot "Helemaal mee eens (7)".*

| | | Helemaal mee oneens | Mee oneens | Enigszins mee oneens | Niet mee eens en niet mee oneens | Enigszins mee eens | Mee eens | Helemaal mee eens |
|---|---|---|---|---|---|---|---|---|
| 1. | Ik pak problemen op een actieve manier aan. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. | Als iets fout gaat, zoek ik meteen naar een oplossing. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. | Als ik actief betrokken kan raken, zal ik deze mogelijkheid benutten. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. | Ik neem onmiddellijk het initiatief als anderen het niet doen. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. | Ik benut kansen snel om mijn doel te bereiken. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. | Ik doe meestal meer dan mij gevraagd wordt. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. | Ik ben goed in het realiseren van ideeën. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## Autonomie en werkdruk

*Hieronder volgt een aantal vragen over de mate van autonomie en werkdruk op uw werk. Kies bij elke uitspraak het antwoord dat het beste bij u past. De antwoordschaal loopt van "Nooit (1)" tot "Altijd (5)".*

| | | Nooit | Soms | Regelmatig | Vaak | Altijd |
|---|---|---|---|---|---|---|
| 1. | Heeft u vrijheid bij het uitvoeren van uw werkzaamheden? | 1 | 2 | 3 | 4 | 5 |
| 2. | Kunt u zelf beslissen hoe u het werk uitvoert? | 1 | 2 | 3 | 4 | 5 |
| 3. | Kunt u deelnemen aan besluiten die uw werk raken? | 1 | 2 | 3 | 4 | 5 |
| 4. | Moet u erg snel werken? | 1 | 2 | 3 | 4 | 5 |
| 5. | Heeft u te veel werk te doen? | 1 | 2 | 3 | 4 | 5 |
| 6. | Hoe vaak komt het voor dat u extra hard moet werken om iets af te krijgen? | 1 | 2 | 3 | 4 | 5 |

## Zelfsturing

*De volgende uitspraken gaan over gedrag op het werk. Kies bij elke uitspraak het antwoord dat het beste bij u past. Denk hierbij aan de afgelopen drie maanden. De antwoordschaal loopt van "Nooit (1)" tot "Vaak (5)".*

| | | Nooit | Zelden | Soms | Regelmatig | Vaak |
|---|---|---|---|---|---|---|
| 1. | Ik vraag om meer taken als ik klaar ben met mijn werk. | 1 | 2 | 3 | 4 | 5 |
| 2. | Ik vraag anderen om feedback over mijn functioneren. | 1 | 2 | 3 | 4 | 5 |
| 3. | Ik vraag collega's om advies. | 1 | 2 | 3 | 4 | 5 |
| 4. | Ik vraag mijn leidinggevende om advies. | 1 | 2 | 3 | 4 | 5 |
| 5. | Ik vraag om meer verantwoordelijkheden. | 1 | 2 | 3 | 4 | 5 |
| 6. | Ik zorg dat ik voldoende afwisseling in mijn werkzaamheden heb. | 1 | 2 | 3 | 4 | 5 |
| 7. | Ik vraag om meer uitdagende klussen. | 1 | 2 | 3 | 4 | 5 |
| 8. | Ik zorg voor minder fysiek zwaar werk. | 1 | 2 | 3 | 4 | 5 |
| 9. | Ik probeer nieuwe dingen te leren op mijn werk. | 1 | 2 | 3 | 4 | 5 |
| 10. | Ik zorg ervoor dat ik minder emotioneel inspannend werk moet verrichten. | 1 | 2 | 3 | 4 | 5 |
| 11. | Ik zorg ervoor dat ik minder geestelijk [1] inspannend werk hoef te verrichten.<br><br>[1] Dat wil zeggen: bijvoorbeeld moeilijke beslissingen nemen, hoge concentratie en veel informatie moeten onthouden | 1 | 2 | 3 | 4 | 5 |
| 12. | Ik probeer minder strikte deadlines voor mezelf te stellen. | 1 | 2 | 3 | 4 | 5 |
| 13. | Ik probeer de complexiteit van mijn taken te versimpelen. | 1 | 2 | 3 | 4 | 5 |

## Doelen

*Hieronder volgen enkele uitspraken over uw oriëntatie. Kies bij elke uitspraak het antwoord dat het beste bij u past. De antwoordschaal loopt van "Helemaal mee oneens (1)" tot "Helemaal mee eens (6)".*

| | | Helemaal mee oneens | Mee oneens | Enigszins mee oneens | Enigszins mee eens | Mee eens | Helemaal mee eens |
|---|---|---|---|---|---|---|---|
| 1. | Het is belangrijk voor mij dat ik beter presteer dan de collega's in mijn directe omgeving. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. | Het is belangrijk voor mij dat ik in vergelijking met anderen in mijn werk goed presteer. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. | In mijn werk ben ik erop gericht om betere beoordeling te krijgen dan mijn collega's. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. | Ik wil zoveel mogelijk leren in mijn werk. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. | Ik heb er behoefte aan om alles wat mijn werk aangaat zo goed mogelijk te beheersen. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. | Het is belangrijk voor mij om de inhoud van mijn werk zo grondig mogelijk te begrijpen. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. | Ik wil gewoon voorkomen dat ik het slecht doe in mijn werk. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. | Mijn doel in mijn werk is te voorkomen dat ik slecht presteer. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. | Mijn angst om slecht te presteren in mijn werk is vaak wat mij motiveert. | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. | Ik maak mij zorgen of ik inhoudelijk wel alles uit mijn werk haal wat mogelijk is. | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. | Soms ben ik bang dat ik de inhoud van mijn werk niet zo grondig begrijp als ik wel zou willen. | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. | Ik ben vaak bezorgd of ik alles wat er te leren valt in mijn werk er ook werkelijk uithaal. | 1 | 2 | 3 | 4 | 5 | 6 |

## Prestatie (uw mening over uw eigen prestatie)

*Hieronder wordt gevraagd naar uw eigen mening over uw gedrag en hoe u zelf presteert. Kies bij elke uitspraak het antwoord dat het beste bij u past. Denk hierbij aan de afgelopen drie maanden. De antwoordschaal loopt van "Geheel mee oneens (1)" tot "Geheel mee eens (5)".*

| | Geheel mee oneens | Mee oneens | Niet mee eens en niet mee oneens | Mee eens | Geheel mee eens |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| 1. | Ik ga effectief om met veranderingen binnen mijn werk groep/team/afdeling (bijv. nieuwe leden). | 1 | 2 | 3 | 4 | 5 |
| 2. | Ik voer de werkzaamheden uit die van mij worden verwacht. | 1 | 2 | 3 | 4 | 5 |
| 3. | Ik help collega's die afwezig zijn geweest. | 1 | 2 | 3 | 4 | 5 |
| 4. | Ik maak tijd om naar de problemen en zorgen van mijn collega's te luisteren. | 1 | 2 | 3 | 4 | 5 |
| 5. | Ik reageer constructief (opbouwend) op veranderingen in de manier hoe mijn team functioneert. | 1 | 2 | 3 | 4 | 5 |
| 6. | Ik volbreng mijn vooropgestelde werkzaamheden op een adequate manier. | 1 | 2 | 3 | 4 | 5 |
| 7. | Ik onderneem activiteiten die direct invloed hebben op mijn beoordeling. | 1 | 2 | 3 | 4 | 5 |
| 8. | Ik pas mijn werkzaamheden aan om in staat te zijn nieuwe collega's te helpen. | 1 | 2 | 3 | 4 | 5 |
| 9. | Ik geef de voorkeur aan taken die mij in staat stellen om creatief te denken. | 1 | 2 | 3 | 4 | 5 |
| 10. | Ik neem de verantwoordelijkheden die bij mijn functie horen. | 1 | 2 | 3 | 4 | 5 |
| 11. | Ik assisteer mijn leidinggevende met zijn of haar werk zonder dat dit gevraagd is. | 1 | 2 | 3 | 4 | 5 |
| 12. | Ik vind het leuk dingen op een originele manier te doen. | 1 | 2 | 3 | 4 | 5 |
| 13. | Ik geef informatie door aan mijn collega's. | 1 | 2 | 3 | 4 | 5 |
| 14. | Ik ben innovatief. | 1 | 2 | 3 | 4 | 5 |
| 15. | Ik help collega's die een zware werkdruk hebben. | 1 | 2 | 3 | 4 | 5 |
| 16. | Ik slaag er niet in essentiële werkzaamheden uit te voeren. | 1 | 2 | 3 | 4 | 5 |
| 17. | Ik heb veel creatieve ideeën. | 1 | 2 | 3 | 4 | 5 |
| 18. | Ik toon persoonlijke interesse in mijn collega's. | 1 | 2 | 3 | 4 | 5 |
| 19. | Ik verwaarloos aspecten van mijn functie die belangrijk zijn. | 1 | 2 | 3 | 4 | 5 |
| 20. | Ik ga nieuwe vaardigheden aanleren of een nieuwe rol op me nemen om een nieuwe werkomgeving te kunnen doorstaan. | 1 | 2 | 3 | 4 | 5 |
| 21. | Ik voldoe aan de formele prestatievereisten van mijn functie. | 1 | 2 | 3 | 4 | 5 |

# Deel 2

Technische Universiteit Eindhoven University of Technology

# Leeftijd en werkprestatie Waterschapsbedrijf Limburg Maart 2011

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Begeleiders TU/e:
Dr. Tanja Bipp, HPM, TU/e
Prof. Dr. Evangelia Demerouti, HPM, TU/e

Vul hieronder de naam in van de collega van wie u nu een beoordeling gaat geven (voor- en achternaam):

*Deze naam wordt alleen gebruikt om de 2 delen van deze enquête te kunnen koppelen. Het wordt niet meegenomen of gebruikt in de data analyse en wordt niet verstrekt aan WBL of aan derden.*

## Deel 2: In dit deel wordt uw mening gevraagd over de prestaties op het werk van een collega.

### Instructie

Voor u ligt deel 2 van de vragenlijst over leeftijd en werkprestatie. In dit deel wordt u verzocht om te oordelen over de werkprestaties van een collega.

Voorafgaand aan het invullen van de vragenlijst willen we u graag nog wijzen op enkele aandachtspunten:

Het invullen van deel 2 van de vragenlijst zal ongeveer **5 minuten** van uw tijd in beslag nemen. De door u verstrekte informatie wordt **strikt vertrouwelijk** behandeld en **anoniem** gehouden voor WBL. De naam die u hebt ingevuld op het voorblad zal WBL nooit te zien krijgen. Deze naam wordt alleen gebruikt om de 2 delen van deze vragenlijst te kunnen koppelen. Zodra dit is gebeurd, wordt het voorblad gescheiden van de rest van de vragenlijst en zal het voorblad worden vernietigd. De gegevens van de anonieme vragenlijsten zullen vervolgens gebruikt worden in de data-analyse en verstrekt worden aan WBL.

Op de volgende pagina start de vragenlijst. Eerst wordt van u gevraagd een aantal persoonlijke gegevens in te vullen. Daarna volgt een aantal stellingen. Elke stelling bevat een aantal antwoordmogelijkheden. De bedoeling is dat u bij elke stelling de antwoordmogelijkheid aanvinkt die het meest van toepassing is. Voor het slagen van het onderzoek is het erg belangrijk dat u alle vragen invult. Als u twijfelt over het antwoord, dan vragen we u alsnog een keuze uit de gegeven antwoordmogelijkheden te maken. Er bestaan geen foute antwoorden, u dient het antwoord te geven dat het meest bij uw mening aansluit.

Alvast hartelijk dank voor uw medewerking!

Chao Li Chen
Student Innovation Management, TU/e

Begeleiders TU/e:
Dr. Tanja Bipp, HPM, TU/e
Prof. Dr. Evangelia Demerouti, HPM, TU/e

Als u vragen heeft in verband met het onderzoek, kunt u contact opnemen met dhr. Chao Li Chen.
E-mail adres: c.l.chen@student.tue.nl
Telefoonnummer: 06 - 1565 2330

## Achtergrondgegevens

*Hieronder volgt een aantal vragen over uw achtergrond.*

| | | | |
|---|---|---|---|
| 1. | Wat is uw geslacht? | ☐ | Man |
| | | ☐ | Vrouw |
| 2. | Wat is uw leeftijd? | …. | Jaar |
| 3. | Wat is de hoogste opleiding die u heeft afgerond? | ☐ | Lagere school |
| | | ☐ | MAVO, LBO |
| | | ☐ | HAVO, MBO |
| | | ☐ | VWO |
| | | ☐ | HBO |
| | | ☐ | WO |
| | | ☐ | Anders, namelijk: |
| 4. | Hoeveel jaar bent u werkzaam bij WBL? | …. | Jaren |
| 5. | Wat is de omvang van uw aanstelling in uren per week volgens uw contract? | …. | Uren |
| 6. | Wat is uw huidige functie? | | |
| 7. | Hoeveel jaar bent u werkzaam in uw huidige functie? | …. | Jaren |
| 8. | In welk team werkt u?(svp één hokje aankruisen) | | |
| | ☐ Bouwzaken en afvalwaterketen | ☐ | Operations |
| | ☐ ICT & Innovatie | ☐ | P&C |
| | ☐ Onderhoud | ☐ | P&O |
| 9. | Hoeveel collega's gaat u vandaag beoordelen? | …. | Collega's |
| 10. | Wat is uw relatie met de collega die u nu gaat beoordelen? | ☐ | Manager/leidinggevende |
| | Ik ben zijn/haar … | ☐ | Collega |
| 11. | Hoe lang kent u de collega die u nu gaat beoordelen? | …. | Jaren |
| 12. | Hoeveel uur per week werkt u samen? | …. | Uren |

## Prestatie (uw mening over de werkprestaties van uw collega)

*Uw collega neemt deel aan een onderzoek naar 'leeftijd en werkprestatie' dat wordt uitgevoerd door een afstudeerder van de Technische Universiteit Eindhoven. Hieronder wordt gevraagd naar uw mening over het functioneren van **uw collega**. Kies bij elke uitspraak het antwoord dat het beste bij u past. Denk hierbij aan de afgelopen drie maanden.*

*De antwoordschaal loopt van "Geheel mee oneens (1)" tot "Geheel mee eens (5)".*

| Geheel mee oneens | Mee oneens | Niet mee eens en niet mee oneens | Mee eens | Geheel mee eens |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

| | **Deze collega…** | | | | | |
|---|---|---|---|---|---|---|
| 1. | gaat effectief om met veranderingen binnen zijn/haar werk groep/team/afdeling (bijv. nieuwe leden). | 1 | 2 | 3 | 4 | 5 |
| 2. | voert de werkzaamheden uit die van hem/haar worden verwacht. | 1 | 2 | 3 | 4 | 5 |
| 3. | helpt collega's die afwezig zijn geweest. | 1 | 2 | 3 | 4 | 5 |
| 4. | maakt tijd om naar de problemen en zorgen van zijn collega's te luisteren. | 1 | 2 | 3 | 4 | 5 |
| 5. | reageert constructief (opbouwend) op veranderingen in de manier hoe zijn/haar team functioneert. | 1 | 2 | 3 | 4 | 5 |
| 6. | volbrengt zijn/haar vooropgetelde werkzaamheden op een adequate manier. | 1 | 2 | 3 | 4 | 5 |
| 7. | onderneemt activiteiten die direct invloed hebben op zijn/haar beoordeling. | 1 | 2 | 3 | 4 | 5 |
| 8. | past zijn werkzaamheden aan om in staat te zijn nieuwe collega's te helpen. | 1 | 2 | 3 | 4 | 5 |
| 9. | geeft de voorkeur aan taken die hem/haar in staat stellen om creatief te denken. | 1 | 2 | 3 | 4 | 5 |
| 10. | neemt de verantwoordelijkheden die bij zijn functie horen. | 1 | 2 | 3 | 4 | 5 |

| Geheel mee oneens | Mee oneens | Niet mee eens en niet mee oneens | Mee eens | Geheel mee eens |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11. | assisteert zijn/haar leidinggevende met zijn of haar werk zonder dat dit gevraagd is. | 1 | 2 | 3 | 4 | 5 |
| 12. | vindt het leuk om dingen te doen op een originele manier. | 1 | 2 | 3 | 4 | 5 |
| 13. | geeft informatie door aan mijn collega's. | 1 | 2 | 3 | 4 | 5 |
| 14. | is innovatief. | 1 | 2 | 3 | 4 | 5 |
| 15. | helpt collega's die een zware werkdruk hebben. | 1 | 2 | 3 | 4 | 5 |
| 16. | slaagt er niet in essentiële werkzaamheden uit te voeren. | 1 | 2 | 3 | 4 | 5 |
| 17. | heeft veel creatieve ideeën. | 1 | 2 | 3 | 4 | 5 |
| 18. | toont persoonlijke interesse in zijn/haar collega's. | 1 | 2 | 3 | 4 | 5 |
| 19. | verwaarloost aspecten van zijn/haar baan die belangrijk zijn. | 1 | 2 | 3 | 4 | 5 |
| 20. | gaat nieuwe vaardigheden aanleren of een nieuwe rol op zich nemen om een nieuwe werkomgeving te kunnen doorstaan. | 1 | 2 | 3 | 4 | 5 |
| 21. | voldoet aan de formele prestatievereisten van zijn/haar functie. | 1 | 2 | 3 | 4 | 5 |

**EINDE VAN DEEL 2 VAN DE VRAGENLIJST**

***Hartelijk dank voor uw medewerking!***

# Appendix B

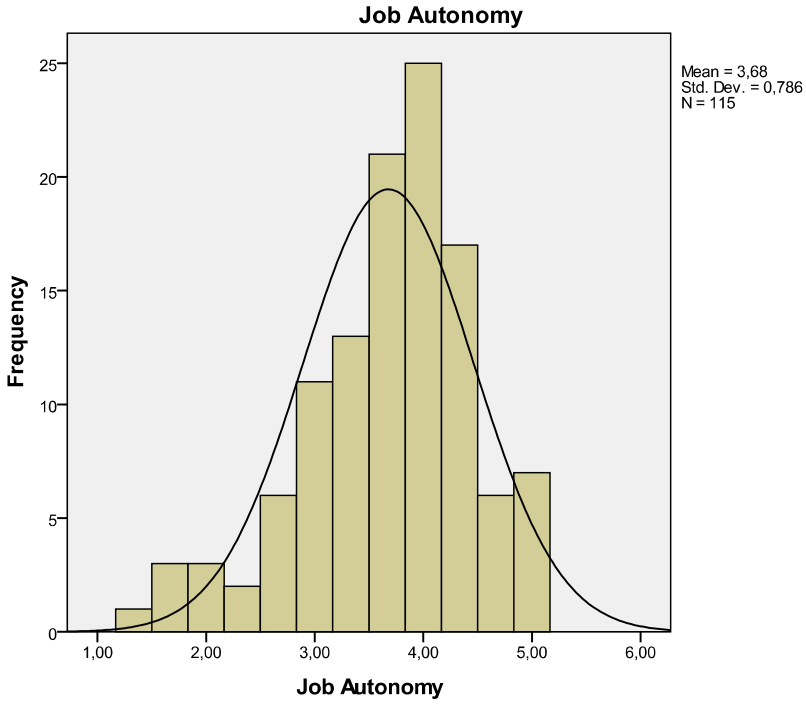



Figure 7 Histogram Job autonomy

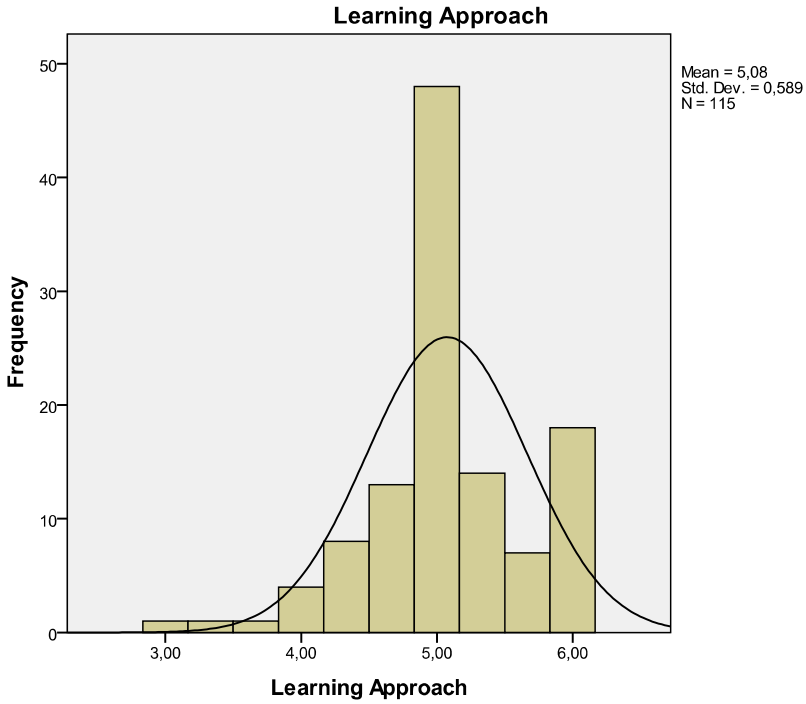



Figure 8 Histogram LAP

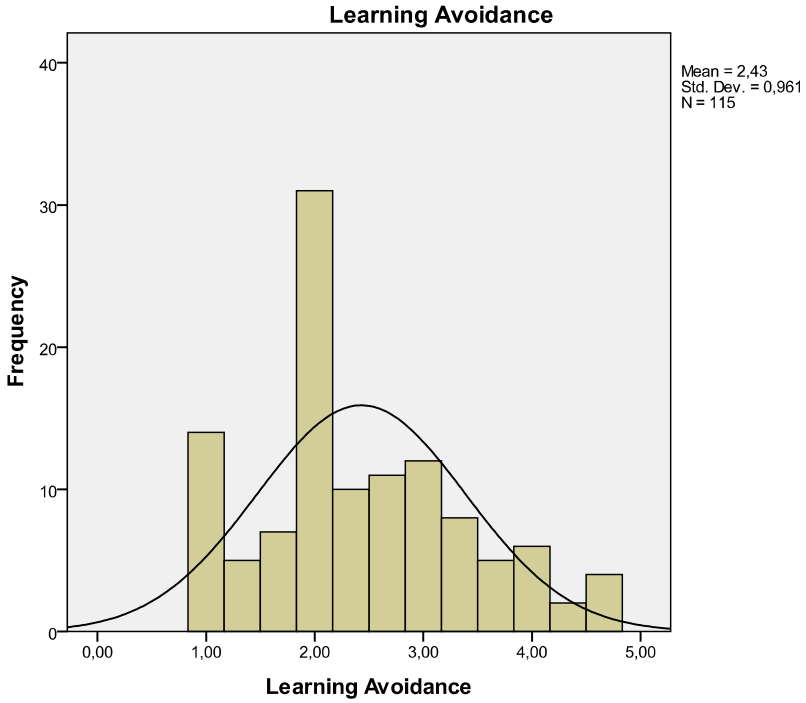



Figure 9 Histogram LAV

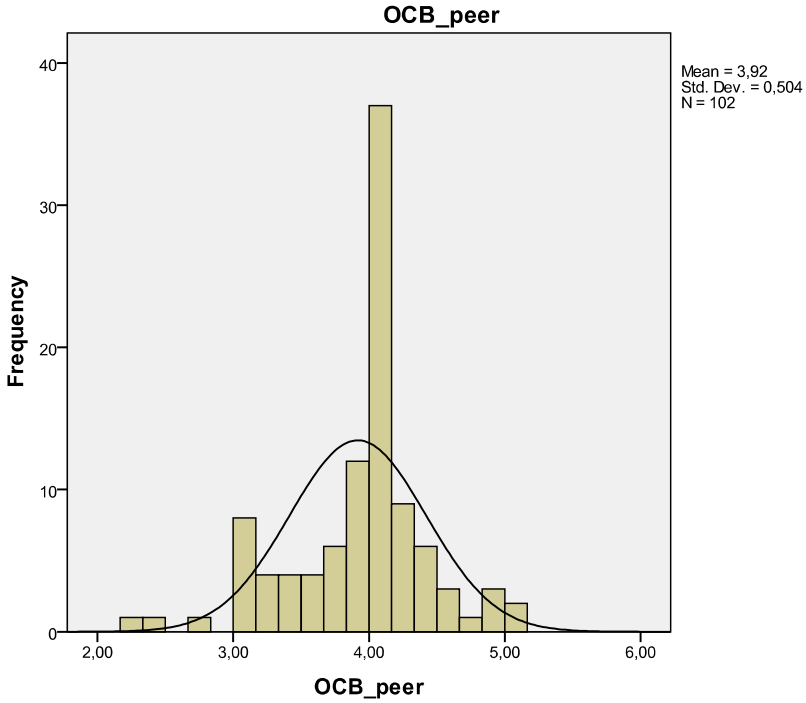



Figure 10 Histogram OCB (peer)

# Appendix C

Table 27 Relationship chronological age and OCB (self-report)

| OCB (Organizational Citizenship Behavior) (self-report questionnaires) | | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**Chronological age** | ,089<br>-,094 | ,086<br>-,112<br>,195* |
| **$R^2$** | ,011 | ,049 |
| **$R^2$ change** | ,011 | ,038* |

*p<0,01; *p<0,05; +p<0,10; N=114

Table 28 Relationship chronological age and OCB (peer)

| OCB (Organizational Citizenship Behavior) (peer questionnaires) | | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**Chronological age** | -,031<br>-,175 | -,034<br>-,189+<br>,129 |
| **$R^2$** | ,036 | ,052 |
| **$R^2$ change** | ,036 | ,016 |

**p<0,01; *p<0,05; +p<0,10; N=101

Table 29 Relationship chronological age and core task performance (self-report)

| Core task performance (self-report questionnaires) | | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**Chronological age** | ,164+<br>,090 | ,163+<br>,089<br>,013 |
| **$R^2$** | ,045 | ,045 |
| **$R^2$ change** | ,045+ | ,000 |

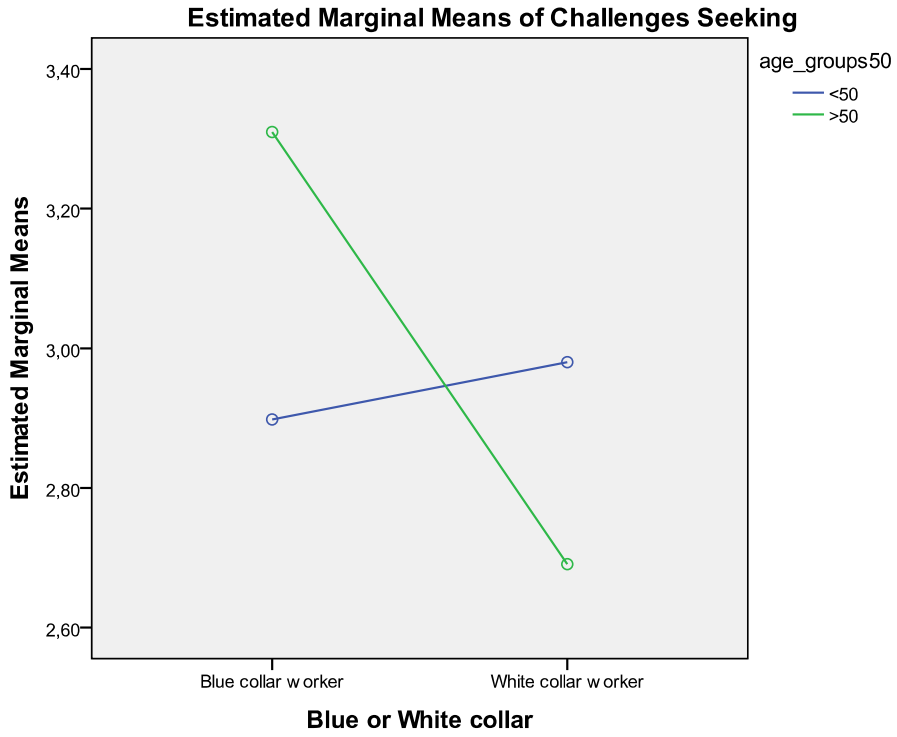
**p<0,01; *p<0,05; +p<0,10; N=114

Table 30 Relationship chronological age and core task performance (peer)

| Core task performance (peer questionnaires) | | |
|---|---|---|
| | Model 1<br>β | Model 2<br>β |
| **Education level**<br>**Function level**<br>**Chronological age** | ,284**<br>-,258* | ,284**<br>-,261*<br>,021 |
| **$R^2$** | ,086 | ,087 |
| **$R^2$ change** | ,086* | ,000 |

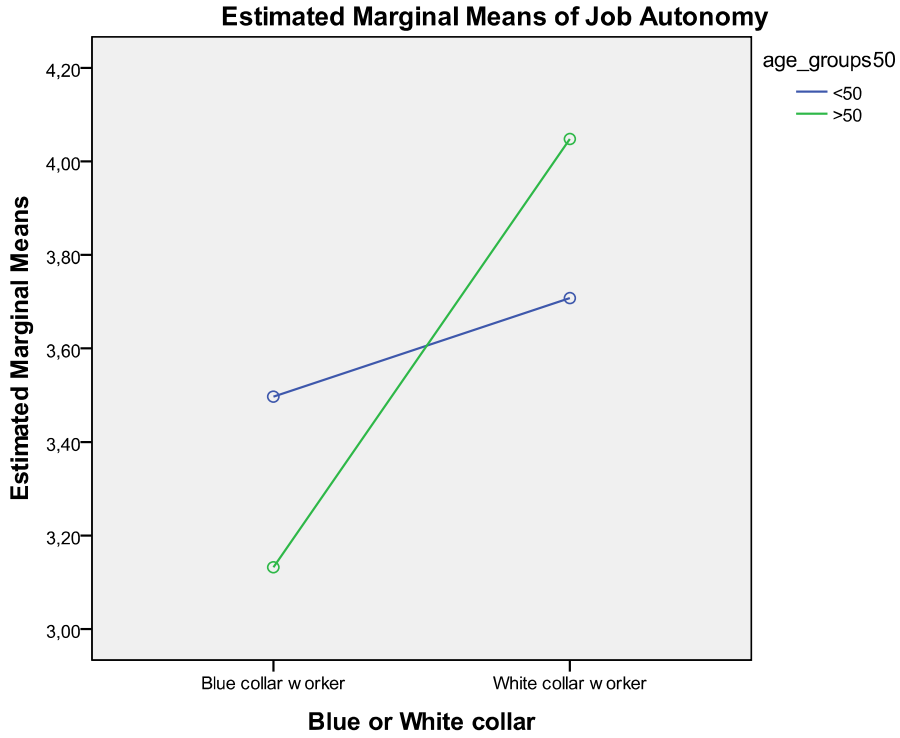
**p<0,01; *p<0,05; +p<0,10; N=101

# Appendix D




Covariates appearing in the model are evaluated at the following values: Education (high or low) = 1,48

Figure 11 Interaction effects of function level and age group on challenges seeking




Covariates appearing in the model are evaluated at the following values: Education (high or low) = 1,48

Figure 12 Interaction effects of function level and age group on job autonomy

# Appendix E

## Outline interview

The interview was organized as follows. First, the main goal of the interview was explained to the interviewee. The interview was meant to discuss potential intervention methods that WBL could use to motivate their older employees to achieve higher levels of performance. Second, the conceptual framework of the thesis was explained to the interviewee. This provided the interviewee a general understanding of how the constructs were expected to relate to each other. The third element in the interview was to discuss the findings from the data analyses. The interviewee was presented a picture representing a subset of the relationships found (see Figure 13, Figure 14, Figure 15, Figure 16, and Figure 17). Each interviewee discussed two or three pictures. The picture showed several constructs and how they are related to each other. The student explained the meaning of these constructs, how to interpret their relationships, and how these relationships eventually affected performance.

The relationships that included constructs that could potentially be modified by WBL (job crafting and the situational characteristics), were then discussed in more detail. For these relationships, the student proposed potential intervention suggestions and the feasibility of the intervention would be analyzed. In addition, the interviewee was asked whether he or she had ideas for possible intervention strategies to improve the performance of the older employees. Are there any strengths or weaknesses that are characteristic for the older workforce and did the interviewee had any suggestions to exploit these strengths or to assist in their weaknesses? In the end, the student was able to assess the feasibility of his own intervention suggestions and he was provided with addition intervention suggestions, proposed by the interviewees. Based on these results, the student was able to make rational decisions concerning the intervention strategies to be suggested to WBL.

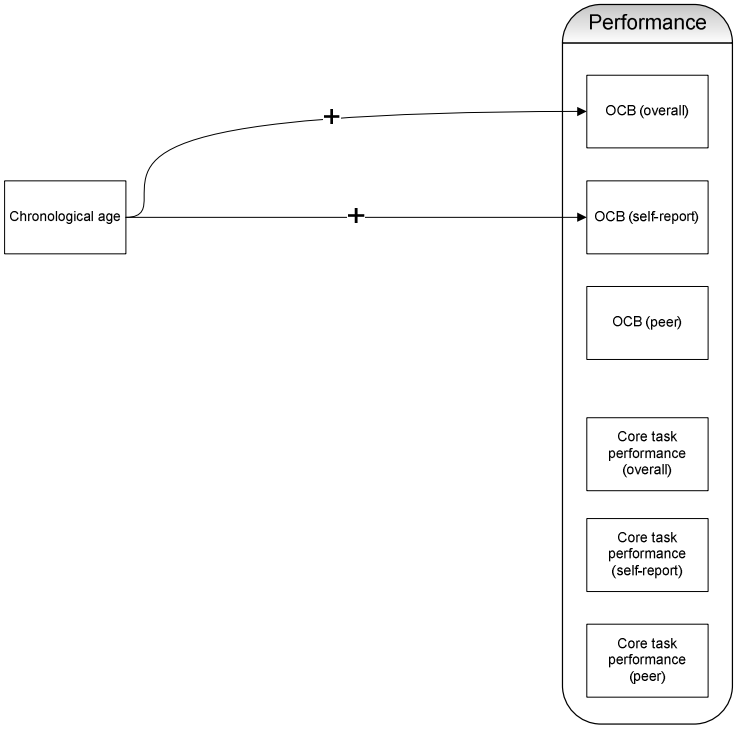



Figure 13 Relationship chronological age with performance

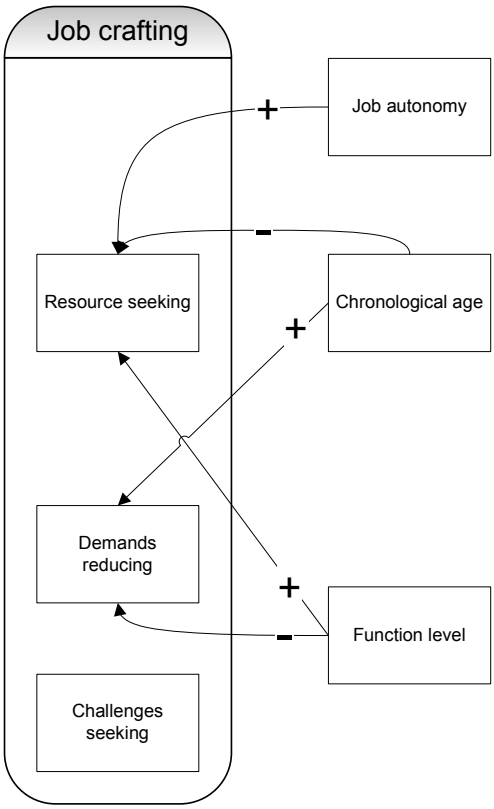



Figure 14 Antecedents for job crafting

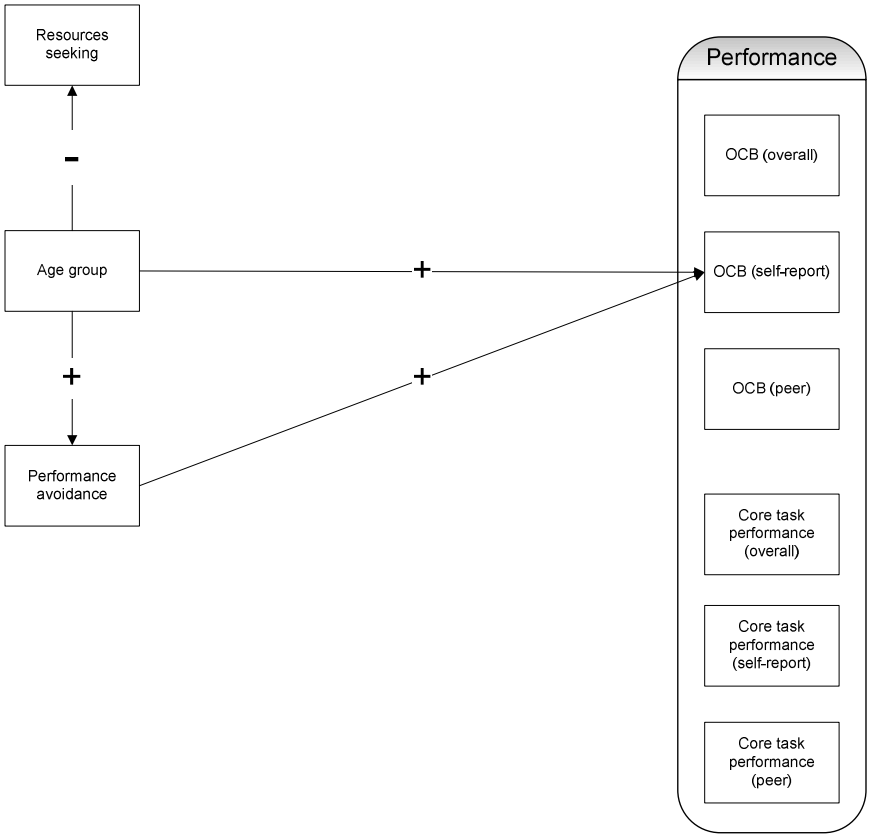
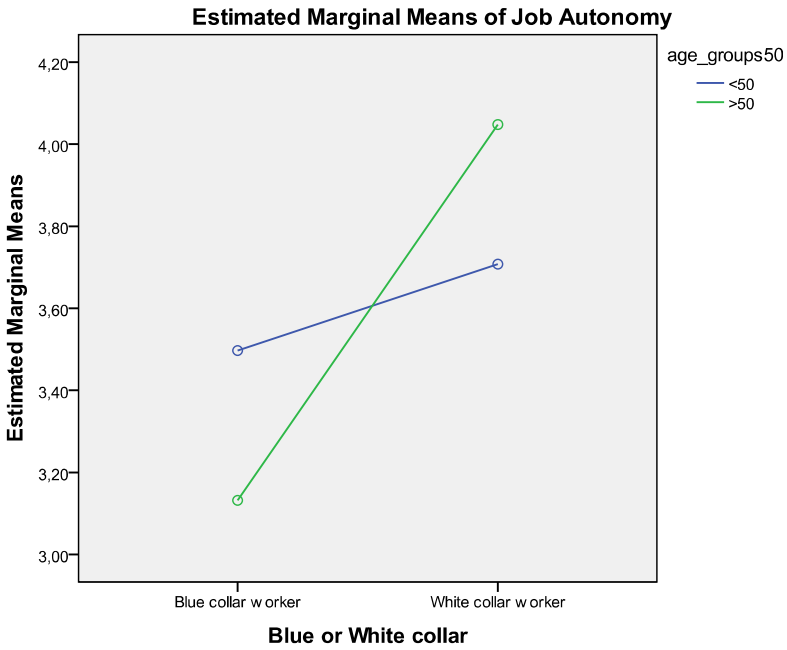
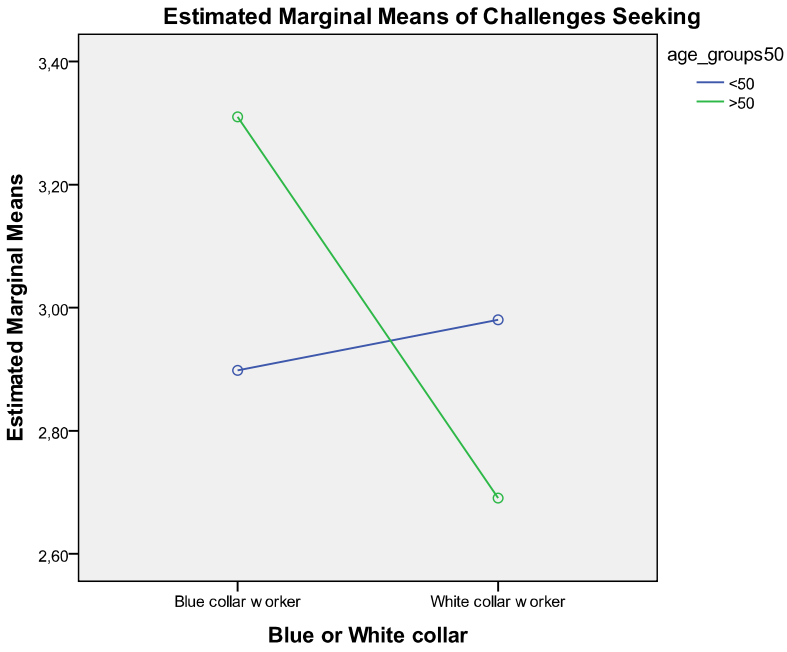



Figure 15 Relationship age groups




Covariates appearing in the model are evaluated at the following values: Education (high or low) = 1,48

Figure 16 Interaction effects on job autonomy




Covariates appearing in the model are evaluated at the following values: Education (high or low) = 1,48

Figure 17 Interaction effects on challenges seeking