

Sustainable Employability of Employees in the Knowledge-Intensive Sector

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HUMAN RESOURCE MANAGEMENT

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Abstract

Sustainable employability of employees is important for both employees and organizations to deal with the following characteristics of the fast-changing work environment: the ageing workforce, 2) other developments in the modern world like: rapid technological developments, increasing market pressures, informatization and globalization of markets, and 3) the emergence of different employment options. The purpose of this study was to identify to what extent certain personal- and work characteristics are related to sustainable employability of employees in the knowledge-intensive sector. Knowing which characteristics are important for sustainable employability and increasing these characteristics, could lead to employees that are more sustainable employable. To answer the research question, a case study was conducted in a department of an knowledge-intensive company. Both quantitative and qualitative data were used (mixed method): A questionnaire that was filled in by 46 respondents and 5 interviews with the leaders of the department and the HR manager. The results showed that age had a negative relationship with sustainable employability and that work characteristics were positively related with sustainable employability. Further, positive relationships between health, job conditions and work relations and sustainable employability were partly found. These results can be used by the organization to set up policies regarding sustainable employability and show that in particular policies regarding age, health, job conditions and work relations could be effective for increasing the sustainable employability of employees in this department. Furthermore, these results and this study contributes to the limited literature of sustainable employability of employees in the knowledge-intensive sector in the Netherlands.

Keywords: Sustainable employability, personal characteristics, work characteristics, knowledge-intensive sector

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1. Management Summary (English)

This research investigates the relationship between several personal characteristics and work characteristics on the sustainable employability of employees in the knowledge-intensive sector. Sustainable employability is important for both employees and organizations, because it can help them deal with the development in the fast-changing work environment, for example the ageing workforce, technological developments, globalization and the emergence of different employment options (flexible workhours, working from home, etc.). Because of these developments, organizations in the knowledge-intensive sector are growing fast, the demand for qualified professionals increases, and it becomes important that professionals that already work at a company are still able to make a valuable contribution to the company they are working for. This could be done by ensuring the sustainable employability of employees.

Sustainable employability means that employees are capable and have the opportunities to create a valuable contribution to the organization now and in the future, while at the same time safeguarding their health and welfare. The literature showed that several personal- and work characteristics could influence (parts of) the sustainable employability concept. The personal characteristics: health, lifestyle, vision on work, and the work characteristics: autonomy, job variety, job conditions, work relations and work pace were investigated. It was expected that these characteristics were positively related to sustainable employability, only work pace was expected to be negatively related to sustainable employability.

The data was collected, using a 'mixed method': both quantitative data (a questionnaire) and qualitative data (interviews) were collected. The questionnaire was used to measure the score of all employees of the department on sustainable employability and the score on the personal- and work characteristics, and the interviews were used to gain a deeper understanding about sustainable employability, personal- and work characteristics and the influence of the leaders on these concepts.

The results showed that the following factors were (partly) related to sustainable employability: age, job conditions, health, work relations and total work characteristics. Age was not specifically investigated in this study, but was added as control variable in the questionnaire. Age was found to be negatively related with sustainable employability, which means that older employees scored lower on sustainable employability than younger employees. Job conditions, health and work relations (both with the supervisor and with colleagues) were positively related to sustainable employability. Therefore, it is expected that increasing these factors would lead to higher sustainable employable employees. Further, also all work characteristics together were positively related to sustainable employability.

In the last section of this study, practical implications/recommendations were discussed to explain how these factors could be increased. This could be done by for example: devote more attention to older employees in performance appraisals (age), give employees a personal flexible budget to adjust secondary job conditions (job conditions), executing a preventive medical examination, offering resources for a good workplace more actively, a contribution from the employer to sport activities (health), and coaching of leaders and more informal conversations between leaders and employees (work relations). Devoting attention to these factors could hopefully lead to employees that are able, now and in the future, to make a valuable contribution to the company, while sustaining their health and welfare.

Further, it is advised that in future more (longitudinal) studies to different personal- and work characteristics and sustainable employability are done to create a deepening understanding how sustainable employability could be increased.

2. Management Summary (Dutch)

Dit onderzoek is gericht op de relatie van verschillende persoonlijke kenmerken en werkkenmerken op de duurzame inzetbaarheid van werknemers in de knowledge-intensieve sector. Duurzame inzetbaarheid is van belang voor werknemers en organisaties om te kunnen omgaan met de snelle ontwikkelingen in de werkomgeving, bijvoorbeeld de oudere werkpopulatie, snelle technische ontwikkelingen, globalisatie en verschillende werkvormen die ontstaan (flexibele werktijden, werken vanuit huis e.d.). Door deze ontwikkelingen groeien organisaties in de knowledge-intensieve sector snel, neemt de vraag naar gekwalificeerde professionals toe en is het belangrijk dat de professionals die al werkzaam zijn een waardevolle toevoeging kunnen blijven maken voor de organisatie waar ze werkzaam zijn. Dit laatste kan gedaan worden, door te zorgen dat de werknemers van het bedrijf duurzaam inzetbaar zijn.

Duurzame inzetbaarheid wil zeggen dat werknemers in hun loopbaan de mogelijkheden en de voorwaarden hebben om nu en in de toekomst, met behoud van hun gezondheid en welzijn te functioneren. Uit literatuur bleek dat verschillende persoonlijke- en werkkenmerken invloed kunnen hebben op (een gedeelte van) duurzame inzetbaarheid. De persoonlijke kenmerken: gezondheid, leefstijl, waarde aan werk en de werkkenmerken: autonomie, gevarieerde functieinhoud, arbeidsverhoudingen, arbeidsvoorwaarden en werktempo werden onderzocht. Er werd verwacht dat deze kenmerken positief gerelateerd waren met duurzame inzetbaarheid, alleen voor werktempo werd een negatieve relatie met duurzame inzetbaarheid verwacht.

Voor de dataverzameling werd een 'mixed method' methode gebruikt: zowel kwantitatieve data in de vorm van een enquête en kwalitatieve data door middel van interviews werden verzameld. Op deze manier kon de score gemeten worden van duurzame inzetbaarheid, de persoonlijke- en de werkkenmerken van alle medewerkers van de afdeling in de enquête en kon met de interviews diepere informatie over duurzame inzetbaarheid, persoonlijke kenmerken, werkkenmerken en de invloed van de leiders hierop verkregen worden.

Uit de resultaten bleek dat de volgende factoren (gedeeltelijk) gerelateerd waren aan duurzame inzetbaarheid: leeftijd, arbeidsvoorwaarden, gezondheid, arbeidsverhoudingen en alle werkkenmerken samen. Leeftijd was niet specifiek onderzocht in de studie, maar was toegevoegd als controle variabele in de enquête. Het bleek echter dat leeftijd een negatieve relatie had met duurzame inzetbaarheid, wat betekent dat oudere werknemers lager scoorden op duurzame inzetbaarheid dan jongere werknemers. Arbeidsvoorwaarden, gezondheid en arbeidsverhoudingen met zowel collega's als met de leidinggevende, bleken positief gerelateerd te zijn aan duurzame inzetbaarheid. Daarom wordt verwacht dat het verhogen van deze factoren zorgt voor een verhoging van de duurzame inzetbaarheid van werknemers op deze afdeling. Daarnaast hadden ook alle werkkenmerken samen een positieve invloed op duurzame inzetbaarheid.

In het laatste gedeelte van de studie zijn praktische aanbevelingen gegeven op welke manier deze factoren verbeterd kunnen worden. Dit kan bijvoorbeeld door meer aandacht te geven aan oudere werknemers in functioneringsgesprekken (leeftijd), het invoeren van een persoonlijk budget voor werknemers om zelf secundaire arbeidsvoorwaarden te kunnen aanpassen (arbeidsvoorwaarden), een preventief medisch onderzoek, het meer pro-actief aanbieden van middelen voor een goede werkplek, een bijdrage van de werkgever aan sport (gezondheid) en door coaching voor leidinggevenden en meer informeel contact tussen de leidinggevende en de werknemer (werkverhoudingen). Door aandacht te schenken aan deze factoren kan er hopelijk gezorgd worden voor medewerkers die nu maar ook in de toekomst, met behoud van hun gezondheid en welzijn, een waardevolle bijdrage kunnen leveren aan het bedrijf.

Verder wordt er geadviseerd dat in de toekomst meer (longitudinale) studies naar verschillende persoonlijke- en werkkenmerken en duurzame inzetbaarheid gedaan worden om meer kennis te vergaren over hoe duurzame inzetbaarheid verhoogd kan worden.

3. Introduction

This study is about the sustainable employability of employees, and how several personal- and work characteristics are related to sustainable employability. In short, sustainable employability (SE) means that employees are capable and have the opportunities to create a valuable contribution to the organization now and in the future, while at the same time safeguarding their health and welfare (Brouwers, Engels, Heerkens & Van der Beek, 2015; Van der Klink et al., 2016).

Sustainable employability is important because it can help both employees and organizations to deal with the challenging characteristics of the fast-changing work environment on the short- and long term in a sustainable way. Organizations want to perform optimally and employees need to stay employable, so both need to be able to quickly adapt themselves to this fast-changing environment (Fugate, Kinicki, & Ashforth, 2004).

SE is in particular important for the following characteristics of the fast-changing work environment: 1) the ageing workforce, 2) other developments in the modern world like: rapid technological developments, increasing market pressures and informatization and globalization of markets, and 3) the emergence of different employment options.

First, since a couple of years, the western world faces the challenge of an ageing workforce (for example: Brouwers et al., 2015; Fleuren, De Grip, Jansen, Kant & Zijlstra, 2016; Sørensen et al., 2008) that is caused by the baby boom after the second world war combined with low birth rates since the 1980's (Ilmarinen, 2001; Leijten, Van den Heuvel, Ybema, Robroek & Burdorf, 2013), and because of an increase in the statutory retirement age (Brouwers et al., 2015; Leijten et al., 2014). This has created a workforce with relatively older employees, that need to stay more working years employable than before. Older employees are more vulnerable than younger employees, because vitality and ageing problems can lead to reduced performance (Koolhaas, Brouwer, Groothoff & Van der Klink, 2010). SE is therefore important, because it is focused on the adequate functioning of employees throughout their whole working lives (Fleuren et al. 2016), from both the employer- and the employee perspective.

Second, next to the ageing workforce, other important developments are the rapid technological developments, increasing market pressures, and informatization and globalization of markets (Arocena, Núñez, & Villanueva, 2007; De Vries, Gründemann & Van Vuuren, 2001; Van der Heijden, Gorgievski, De Lange, 2016). This has created a huge pressure on both employees and organizations, because they constantly need to adapt themselves to these developments, for example by offering products on other markets or life-long learning to keep up with the new technologies (Koolhaas et al., 2010). Sustainable employability could be used to deal with these developments in a responsible way, because it is focused on employees that can make a valuable contribution to the company in this environment, while at the same time safeguarding their health and welfare (Brouwers et al., 2015; Van der Klink et al., 2016).

Thirdly, various forms of employment (for example: working part-time) have emerged and the boundaries between jobs, organizations and life roles are disappearing. This has created less job security, and employees need to be flexible to deal with these employment options (Arocena et al., 2007; Van der Heijden et al., 2016). SE can be used to ensure that employees can add value to the organization by being flexible, while at the same time maintaining their employability, health, vitality, welfare, etc.

The company of this case study also faces the challenge of this fast-changing work environment. The company is an IT company specialized in ERP- and CRM-software with offices in 4 countries and over 500 employees. In the Netherlands, the company has more than 200 employees, and 62 people are working in the department Customer Service–Managed Services (CS-MS). This research is specifically targeted on this department.

The rapid technological developments and the informatization and globalization of markets has led to a fast-growing company that attracts more and larger customers. This has also led to an increase in demand of qualified professionals. In the beginning of May, the company had more than 50 open vacancies. Finding the right professionals is difficult, and therefore it is important that the company retains the professionals who already work in the company and ensures that employees can make a valuable contribution to the company, while at the same time their employability (also of older employees) is sustained. Hiring the right professionals is difficult because there is high scarcity on the job market in the IT sector (UWV, 2017), and jobs in the IT-sector often require very specific and up-to-date knowledge. Further, scarcity exist because it becomes more important that employees possess besides technical skills also other competencies (communication skills for example). Job

seekers however, are often not educated enough or their knowledge is outdated. Because the company is growing fast, attracts different kinds of customers and new technology is constantly developed, it is important that employees keep up with all the changes within the company. This is especially important for the department CS-MS, because since recently the department provides 24/7 service to their customers.

Sustainable employability can be vital for the company under study and in general for employees and organizations, to deal with the rapid developments of recent years, like the ageing workforce, globalization and informatization. Therefore, it is important that organizations and employees know how sustainable employability can be increased. Brouwer et al. (2012) stated that several determinants are linked to sustainable employability in the literature. This research investigates if several personal- and work characteristics are related to sustainable employability. Knowing which determinants (characteristics) are important for SE, could lead to higher sustainable employability.

Despite the importance of SE, scientific literature about this subject (and how the determinants are related to SE) is still scarce, and many gaps exist in the literature.

The first problem, is the conceptualization of sustainable employability. Several researchers have spent many years of research into the concept 'employability' (for example: Ilmarinen and Van der Heijden), but sustainable employability is introduced more recently and is not always defined in the literature. For example, Koolhaas, Brouwer, Groothoff and van der Klink (2010) developed an intervention for 'enhancing a sustainable healthy working life', but they did not give a definition of a sustainable healthy working life. This also applies for the studies of Oude Hengel, Blatter, Joling, Van der Beek and Bongers (2012), Riethmeister, Brouwer, Van der Klink and Bültmann, (2016), and of Van de Ven et al. (2014). Fleuren et al. (2016), mentioned that only the research of Van der Klink et al. (2016), has tried to define the concept sustainable employability. Without a clear conceptualization of SE, it remains unclear what SE includes and what the value of SE is.

Secondly, several studies call for empirically testing sustainable employability (For example: Smaliukienė, 2014; Van der Klink et al., 2016), or determinants (characteristics) that are important for facilitating SE (Van der Heijden et al., 2016). Van der Klink et al. (2016) states that the definition and model they proposed could be used in further studies to test the validity of the model, because this has only partly been done. Other studies only focused on developing interventions to enhance sustainable employability, but did not empirically test the concept (For example Oude Hengel, Blatter, Van der Molen, Bongers and Van der Beek, 2013). Empirically testing SE is important to measure what difference SE makes and how important certain determinants are for increasing or decreasing SE.

Thirdly, some studies tried to test sustainable employability, but only tested parts of the sustainable employability concept. Brouwer et al. (2012) did a literature research into determinants of SE, but found that in both the 'grey' and the scientific literature, SE was operationalized in many ways and the measurements of SE were all indirect. The determinants that were found in the study of Brouwer et al. (2012) were tested on the indirect measures: employability, employment rate, productivity, absenteeism, disability, unemployment, (early) retirement, working after (retirement) 65 years, work capacity and work performance. Direct testing of SE is necessary because only then the real effects of sustainable employability can be revealed.

Fourth, Brouwer et al. (2012) also mentioned that not one of the scientific studies was conducted in the Netherlands. Countries differ in policies and legislation regarding the ageing workforce and deal with different market pressures, informatization and globalization, and employment options. Therefore, if organizations in the Netherlands want to implement sustainable employability in their company, it is important to know how SE can make a difference with these specific characteristics of the work environment.

Fifth, many labor studies into sustainable employability were conducted in sectors/companies with mainly physical work and focused on older employees. For example, Leijten et al. (2013) only took employees of 45-64 years, Oude Hengel et al. (2012) conducted their study among construction workers, Van de Ven et al. (2014) among shift and day workers in technical and maintenance jobs, and Van Holland (2017) conducted their survey among meat processing workers. Van Dam, Van Vuuren and Kemps (2016) however mentioned that sustainable employability is necessary for employees in all sectors and of all ages. This is especially of significance in the knowledge-intensive sector where professionals are scarce, and it is important that organizations are able to retain professional employees and help them to stay employable. Therefore, more research into employees of all ages and of different sectors is needed to be able to generalize the findings of the studies to the working population.

This study wants to contribute to the literature by using a clear conceptualization and operationalization, to empirically and directly measure sustainable employability, among employees of all ages, in the knowledge-

intensive sector. Further, since studies into determinants of SE only measured indirect measures of SE, this study wants to measure what important personal- and work determinants are for professionals in knowledge-intensive sector, for the whole sustainable employability concept. The company under study is a typical example of an organization in the knowledge-intensive sector, thus the results of this study can create a valuable contribution to knowledge about sustainable employability of employees in the knowledge-intensive sector. The following research question was formulated:

To what extent do personal- and work characteristics influence the sustainable employability of professional employees in the knowledge-intensive sector?

Following this introduction, in chapter 4 the concept sustainable employability will be defined and explained, and the hypotheses concerning the factors that could influence SE will be presented. Chapter 5 specifies the methodology used in this study. In chapter 6 the results are presented and in chapter 7 the main conclusions are summarized and a discussion of the findings is presented.

4. Theory

In this chapter sustainable employability is defined and further explained. Also, hypotheses are drafted about the relationship between different personal- and work characteristics and SE. Ten hypotheses are formulated in total. Further, a figure with the research model is presented.

4.1 Sustainable Employability

Sustainable employability is a relatively new concept, that has received much attention the last couple of years. Entering the concept in Google already gives more than 456.000 hits. The word sustainability however, was already defined in 1972 by the United Nations as: 'A general worldview according to which people should strive to fulfill their needs in a manner such that the ability of future generations to fulfill their needs is not endangered'. (Docherty, Kira, & Shani, 2009, p. 3). In the 80's the sustainability concept was linked to development, so more attention was given to a healthy environment and workplace. From there, attention shifted to healthy work and sustainable work (De Lange & Van der Heijden, 2016), although sustainable employability is in many studies not clearly conceptualized (Fleuren et al., 2016). The following definition of sustainable employability is used in this study:

'Sustainable employability means that, throughout their working lives, workers can achieve tangible opportunities in the form of a set of capabilities. They also enjoy the necessary conditions that allow them to make a valuable contribution through their work, now and in the future, while safeguarding their health and welfare' (Van der Klink et al., 2016, p. 74).

Fleuren et al. (2016) state that that this definition is valuable for a couple of reasons.

First, many authors view SE as an individual concept. For example Van Dam et al. (2016) defined sustainable employability as 'the extent to which workers are able and willing to remain working now and in the future'. (p. 3) This definition mainly focuses on the individual characteristics of an employee. Schaufeli (2011) mentions that also many organizations emphasis individual characteristics in their definition of SE. However, next to individual characteristics of the employee, the work context is also important. De Lange & Van der Heijden (2016) stated that both the employer and employee are responsible for SE. The employer has to provide employees with a healthy work environment, a supporting supervisor, and the right opportunities that helps employees to stay healthy, motivated and employable. For the employee on the other hand, the attitude and motivation to utilize the opportunities and conditions provided by the work context is important. The employee has to make sure that he or she makes a 'valuable contribution' to the organization.

Secondly, Fleuren et al. (2016) mentioned the value of describing SE as a multidimensional concept in this definition. By stating that employees 'make a valuable contribution', employees have a broad range of opportunities, to choose how they can make a valuable contribution to the organization. This also implies for the employer. By stating that the employer has to arrange 'a set of capabilities', it leaves space for the employer to choose what capabilities he offers his employees. This broad range for the employer and employee is also a point of attention from Fleuren et al. (2016), because it not specific what employers and employees need to do. But because the literature about sustainable employability is scarce and not very extensive, this broad range is preferred to make sure that important elements are not excluded. Further, SE is multidimensional because it also includes the health and welfare of an employee, not just their 'valuable contribution'.

Finally, the inclusion of the words 'throughout their working lives', indicates that SE is not only important for older employees, but for all employees in an organization, during their whole working life. This emphasizes the longitudinal nature of the concept. Because SE is about the whole working life of an employee, it should not only incorporate the employability of an employee at the current employer, but also beyond that. An employee is only sustainable employable when he or she is able to find a (similar) job in the labor market after quitting the job at the current employer. Rothwell and Arnold (2007) also acknowledge this difference and distinguish between internal employability (employability of the employee in the current organization) and external employability (employability of the employee in the labor market) in their study. They state that employability can be seen as a unitary construct which consists of two components: internal and external. Therefore, in this study, sustainable employability is also seen as one construct that includes both internal and external employability.

4.2 Determinants of Sustainable Employability

Brouwer et al. (2012) found in the scientific and grey literature several determinants that are linked with sustainable employability. They divided determinants of SE into:

- Personal characteristics (sociodemographic-, health-, psychological-, lifestyle- and work-related characteristics)
- Family characteristics (for example: marital status, support partner)
- Work characteristics (Work content, requirements, relationships and job conditions)
- Organization characteristics (For example: type and size of the company)
- Macro-economic determinants (national and regional conditions).

Research about these determinants remains fragmented however, because SE is often conceptualized and measured in many ways (De Lange & Van der Heijden, 2016). The determinants are only measured on indirect measures of SE, like early retirement. This research wants to contribute to the literature by investigating how a broad range of determinants are related to the whole sustainable employability concept. Since the study was conducted in a department of one company, it was not possible to investigate organization characteristics and macro-economic determinants. Further, family characteristics were excluded because an employer has no direct influence on these characteristics. This means that an employer could not change these factors to make employees more sustainable employable. This study was therefore focused on a broad range of personal- and work characteristics that an employer could directly or indirectly influence. The determinants that were investigated were chosen in consultation with the HR manager, the department manager and the team leads of the organization under study.

Personal characteristics

Personal characteristics are divided by Brouwer et al. (2012) in the categories: sociodemographic characteristics, health-, psychological-, lifestyle- and work-related characteristics. Several personal characteristics that fall in three of these categories are investigated in the current study. Hypotheses were formulated regarding health, lifestyle and general vision on work.

Health

Earlier research has shown that bad health (both physical and psychological) is negatively related with working until the age of 65 or longer (AWVN, 2011; Burdorf, Van den Berg, & Elders, 2008; Cuelenaere & Chotkowski, 2008; Hidding et al., 2004; Ybema, Geuskens, & Oude Hengel, 2009). Other studies investigated the influence of health on other outcome measures of SE like productivity, employability, absenteeism/presenteeism and work capacity (Burdorf et al., 2008; De Vries, van Dalen, Thie, & Dekker, 2005; Van der Leije, 2009). For example, Van de Ven et al. (2014) found that high blood pressure and cardiovascular diseases among shift workers were important predictors for absenteeism. Kim & Feldman (2000) state that a possible reason for the relationship between health and productivity or early retirement, is that employees with health problems may be less able to productively do their jobs. They will be less productive because the absenteeism of these employees is higher, or because experienced pain makes it more difficult to focus on the job. Further, employees who face severe health problems and have a short life expectancy, may want to spend their remaining time with family and friends. Health is an important factor for the sustainable employability of all employees, but in particular for employees older than 50 years (Van der Hoeven et al., 2011).

Because in the past relationships are found between health and outcome measures of sustainable employability like productivity and working until the age of 65, health is expected to be positively related with sustainable employability. This means that an employee with a good or excellent health is probably better employable now and in the future. This results in the following hypothesis:

Hypothesis 1: Health is positively related to sustainable employability.

Healthy lifestyle

Next to health another personal characteristic that could influence sustainable employability is the lifestyle of an employee. A healthy lifestyle could influence vitality (Van Scheppingen et al., 2015) and helps to reduce the risk of

cardiovascular diseases (Lichtenstein et al. 2006). The AHA 2006, (Lichtenstein et al, 2006, p. 83) provides certain diet and lifestyle goals which could help prevent the risk of cardiovascular diseases:

- Consume an overall healthy diet.
- Aim for a healthy body weight.
- Aim for recommended levels of low-density lipoprotein (LDL) cholesterol, high-density lipoprotein (HDL) cholesterol, and triglycerides.
- Aim for a normal blood pressure.
- Aim for a normal blood glucose level.
- Be physically active.
- Avoid use of and exposure to tobacco products.

Brouwer et al. (2012) did a literature review about determinants of sustainable employability. They found that lifestyle could be related to the following outcome measures of SE: employment rate, employability, absenteeism, disability, unemployment, continue working after 65, work capacity, work performance and retirement.

For smoking, Van de Ven et al. (2014) found that among both shift- and dayworkers smoking indicated an increased risk for sickness absence. Further, other studies suggest that smoking has a negative influence on labor productivity (Burdorf et al., 2008), vitality (Van Scheppingen et al., 2015) and employability (De Lange & Van der Heijden, 2016), and a positive influence on disability (Burdorf et al., 2008), unemployment (Burdorf et al., 2008) and disability pensioners (Friis, Ekholm & Hundrup, 2008). No relationship was found however, between smoking and early retirement (Burdorf et al., 2008), and work capacity (Tuomi, Huuhtanen, Nykyri, & Ilmarinen, 2001). A possible explanation for this is that lifestyle has mainly an indirect influence, and can lead through bad health to for example unemployment (Brouwer et al., 2012).

Further, alcohol consumption positively influences unemployment (Leino-arjas, Liira, Mutanen, Malmivaara, & Matikainen, 1999), long-term absence (Burdorf et al., 2008), and is suggested to influence vitality (Van Scheppingen et al., 2015). However, Leino-Arjas et al. (1999) also found that long-term unemployment was related to decreased alcohol consumption. This was suggested to be due to the change in work and leisure routine.

Next to smoking and alcohol consumption, other important factors concerning lifestyle are body-mass-index, food and nutrition, (lack of) physical activity, and stress. Burdorf et al. (2008) mention that research into these factors is not consistent, partly because only a few studies have investigated these factors. For example, Friis et al., (2008) found that a high body mass seems to promote early retirement, while Burdorf et al. (2008) mention that not in every study a significant association was found. Despite the lack of a significant association, these studies do show an increased chance on early retirement or disability. Further, physical activity in leisure time was associated with a reduced risk on unemployment, while a lack of physical activity was associated with short-absenteeism (Brouwer et al., 2012). Riethmeister et al. (2016) identified food and nutrition as major health concerns. As stated earlier this could also indirectly influences sustainable employability. Finally, reducing stress is important for vitality (Van Scheppingen et al., 2015) and work stress can be related to short-term absenteeism (Burdorf et al., 2008).

In general, most of the literature states that an unhealthy lifestyle (smoking, high alcohol consumption, stress, etc.) can lead to unfavorable outcomes like unemployment, disability, early retirement etc. Since these outcomes are a part of sustainable employability, it is expected that a healthy lifestyle is positively related to SE. The following hypothesis was formulated:

H2: A healthy lifestyle is positively related to sustainable employability.

General vision on work

The relative importance that individuals devote to work in comparison with other areas of life, and the aspects of work that an employee values the most are investigated in this study (Smulders, Andries, & Otten, 2001). The relative importance that individuals devote to work is also called 'work centrality' (Paullay, Alliger, & Stone-Romero, 1994; Diefendorff, Brown, Kamin, & Lord, 2002). Work centrality is defined as 'the beliefs that individuals have regarding the degree of importance that work plays in their lives' (Paullay et al., 1994, p. 225). Several factors could influence the work centrality of an employee, examples are their partner, family, culture or religion. The aspects of work that the employee values the most are divided into intrinsic aspects and extrinsic aspects. Intrinsic aspects of a job are task-related aspects like establishing something, responsibility, interesting work etc.

Extrinsic aspects are contextual motivating factors. Examples are rewards, nice colleagues, good supervision etc. (Smulders et al., 2001). Work centrality and the importance of intrinsic and extrinsic motivators determines the general vision that an employee has on work.

Several studies point out that the motivation for work or the attitude towards work has a relation with employability and retirement. A negative attitude regarding work could lead to early retirement (Brouwer et al., 2012). Also, negative expectations about finding a new job increased the risk on early retirement. De Vries et al. (2005) mentioned that the motivation for work can change across the life span of an employee. Younger employees focus often on other factors than older employees. Older employees often value using expertise in their work and having meaningful and creative work. Younger employees however, feel normally more scoring drive and are sensitive for status. It is important that an employer takes this preferences into account by distributing tasks and responsibilities. De Lange and Van der Heijden (2016) state that besides the founded positive relationship between motivation to work and employability, motivation for other activities than work is negatively related with employability. Therefore, it is expected that employees that devote a higher value to work and to intrinsic motivators that really concern task-related aspects, are better sustainable employable than other employees. These expectations were formulated as follows:

H3a: Work centrality (in comparison with value for society, family and free time) is positively related to sustainable employability.

H3b: Intrinsic motivators are positively related to sustainable employability.

Work characteristics

Next to personal characteristics, Brouwer et al. (2012) also distinguishes different categories with work characteristics: work content, work requirements, work relationships and working conditions. According to Brouwer et al. (2012), several work characteristics in these categories were related to aspects of sustainable employability in earlier studies, but were not tested on the whole sustainable employability concept. This study investigates the work characteristics: autonomy, job variety, work pace, job conditions and the work relations (with supervisor and in total).

Work content characteristic: Autonomy

Autonomy can be defined as 'the ability to decide when, where and how the job is done' (Thompson & Prottas, 2005, p. 102). This means that employees have the freedom to decide how to schedule their activities and can determine which procedures are used (Oldham & Hackman, 2010). When people experience autonomy in their job, they feel more responsible for work outcomes. In the past, many studies have investigated autonomy in work. Hackman and Oldham (1976) found that employees with autonomy are more satisfied with their jobs and Thompson and Prottas (2005), found that autonomy was positively related with for example family satisfaction and life satisfaction, and negatively related with for example stress and turnover intention. Further, a small number of studies have investigated the link between autonomy and outcome measures of sustainable employability. In the study of Lund & Villadsen (2005), the authors state that when employees have low decision authority, the risk on early retirement pension increases. For employees who keep working however, freedom and influence on the job are over-represented. Friis et al. (2008) showed that among nurses, low-decision authority was associated with short-term sick leaves. Further, Blekesaune & Solem (2005) showed that low autonomy was related to disability retirement and increased risk of cardiovascular diseases. This relationship was in essentiality import for men. The authors gave three explanations why this relationship existed (among men). First, it could be that there is a gender difference, because men find autonomy more important than women. Second, men have often worked their whole working life, while many women have spent part of their working life, caring for their family. Because of this, it is more likely that men already have accumulated enough resources to retire. Third, it could be that low job autonomy among men contributes to poor health, which explains why employees in low autonomy jobs retire earlier. therefore, low autonomy was significantly related with disability

retirement and increased risk of cardiovascular diseases. The relationship was significant for women when looking at an interaction effect between job stress, low autonomy and disability/early retirement.

From these studies mentioned indicate that autonomy has an influence on the work outcomes: early retirement pension, short-term sick leaves, disability retirement and cardiovascular diseases. De Lange & Van der Heijden (2016) and Brouwer et al. (2012) summarize in their literature research studies that show how autonomy also positively influences the employment rate, working after the age of 65, and that low autonomy leads to an increased risk of disability and long-term absenteeism.

Overall, most of scientific literature shows a positive link between autonomy and positive work outcomes of sustainable employability. Therefore, the following hypothesis is used in this study:

H4: Autonomy is positively related to sustainable employability.

Work content characteristic: Job variety

Another important work characteristic is job variety of an employee. Hackman and Lawler (1971) stated that job variety is one of the four core dimensions of job characteristics. job variety (or skill discretion as used in the study of Karasek, Brisson, Kawakami, Bongers, & Amick (1998)) is about 'the level of skill and creativity required on the job and the flexibility permitted the worker in deciding what skills to employ' (Karasek et al., 1998, p. 323). Karasek et al. (1998) stated in their study that job variety (among others) can be used to determine for example the risk of job-related illness development or coronary heart diseases. Herrbach, Mignonac, Vandenberghe and Negrini (2009) investigated whether assigning senior employees to new roles influenced voluntary early retirement. The expected positive effects (reduced early retirement) were not found. Earlier studies would indicate a positive effect however. Kanfer and Ackerman (2004) describe in their study how age-related changes in adult development could affect work motivation. They found that adding new roles (for example as coach, trainer, mentor) to the jobs of older employees could increase the motivation and their affective commitment to the organization. Other studies show that job variety or the content of the job could also influence other outcome measures of sustainable employability. De Lange and Van der Heijden (2016) and Brouwer et al. (2012) did a literature research to discover these relationships and found that job variety could influence the employment rate, employability, motivation to work until/after 65 years and work capacity. A positive link was found between the content and scope of a job and the employment rate (Meijer & Mevissen, 2005; Wiegman, 2005) Concerning employability, they found studies that indicate negative links between lack of agreement of job content and what employees are capable of (Hidding et al., 2004), high task requirements (AWVN, 2011; Koolhaas et al., 2010) and employability, and positive links between satisfaction of job content and employment outside the department or in a different function and employability (AWVN, 2011). Further Van der Leije (2009) states that employees who have been working in the same function for a while, have a smaller chance to stay employable. Regarding motivation to work until/after 65 years, challenging work is positively related with working until 65 (AWVN, 2011), while high task requirements are negatively related with working after 65 years (AWVN, 2011; Ybema et al., 2009). A good fit between the job and the employee is positively related with working after 65 (Cuelenaere & Chotkowski, 2008). Finally, Role unclarity and non-inspiring work was related with bad work capacity. In summary, when employees have more flexibility and challenge in performing their tasks (job variety) the better the outcome measures of sustainable employability. The following hypothesis was formulated:

H5: Job variety is positively related to sustainable employability.

Work content characteristic: Work pace

The last factor that is discussed in this study regarding work content characteristics, is the work pace of employees. Work pace is an important aspect of job demands. The definition of work pace that is often used is that of Karasek (1985): 'The psychological stressors involved in accomplishing the work load, stressors related to unexpected tasks, and stressors of job related personal conflict' (p. 291). Employees who have high-demand jobs have to work fast and hard, work many hours, have much work to do in little time or/and face a heavy workload

(Janssen, 2000). Kristensen, Bjorner, Christensen & Borg (2004) found in their study that white collar jobs were often the most high-demand jobs in comparison with jobs in the production, service and human service sector. Jobs who score the highest on high-demands are managers, systems planners, secretaries and bank clerks. Several studies show that high-demand jobs could lead to unfavorable sustainable employability outcome measures. For example, Allen, Woock, Barrington & Bunn (2008) studied the impact of overtime on the outcome measures employee health, productivity and safety. They found a negative relationship between extended and moderate overtime and employee health, productivity and safety (presenteeism factors). This relationship was not linked with advancing age however. This means that the risks on health, productivity, and safety were not higher for older employees who were working overtime. Overtime is often used by organizations to deliver their goods and services in time, so that the organization can gain a good market position. When employees have to do a lot of overtime however, indirect costs can be increased because of a loss of productivity and health of employees. These indirect costs can create a situation in which the opposite (a bad market position) of what was targeted is achieved.

Further, Van Scheppingen et al. (2015) state that since the work is more demanding than in the past, a balanced workstyle is important to keep employees vital. De Lange & Van der Heijden (2016) found in their literature study that job demands could influence the employability of employees and the motivation to work after 65 years. Many working hours was negatively related to employability while working less hours and working flexible hours was positively related to employability. A lower workload was positively related with the motivation of employees to keep working after 65 years. Additionally, Brouwer et al. (2012) found in their literature study that a heavy workload/a high work pace increased the risk on early retirement.

Because the most literature has shown that high job demands are negatively related with outcome measures of sustainable employability, this relationship was also expected for work pace on the total sustainable employability concept. This results in the following hypothesis:

H6: A high work pace is negatively related to sustainable employability.

Job conditions

The characteristics autonomy, job variety and work pace described above, are all part of job content characteristics. Next to this, also characteristics that are related to job conditions are an important part of work characteristics. Job conditions are conditions on which employees perform their job. These conditions are agreed between employer and employee and written down in a labor contract. Other job conditions could be described in the collective agreements or/and in the law (Rijksoverheid, 2017). Examples of job conditions are salary, working from home, performance appraisals, flexible workhours, and promotion- and career opportunities. Different studies have shown that favorable job conditions could increase certain aspects of sustainable employability.

First, the survey of Cuelenaere & Chotkowski (2008) shows that for employees, higher pension, more salary, and less working hours are necessary conditions to keep working (after pension). Further, older employees state that career talks and creating opportunities for flexible pension are important factors to keep working. It was found that women were more prepared to keep working when the employer offers enough training opportunities. Also, the Dutch ministry of internal affairs and kingdom relations (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2007), mention that training opportunities and growth opportunities are important for employees working in the government sector.

Second, in the study of Peters, Engels, De Rijk, Frans, & Nijhuis (2015) among nurses, contract type moderated the relationship between job characteristics and sustainable employability. Wiegmans (2005) state that a permanent contract (and fixed income), is in particular significant for employees older than 45. Certainty is important for this group because of a mortgage, children etc.

Further, Meijer & Mevissen (2005) did a study among employees working in a printing company. In this company, employees were working 4 days per week for 9 hours. They found that for older employees this day off was important to maintain their motivation to work and their health.

Ybema et al. (2009) mentions the possibility of flexible working hours as the most important job conditions for keep working in the same function until 65 years. Flexible working hours and the possibility to work from home are also mentioned by the Dutch ministry of Internal Affairs and Kingdom Relations (Ministerie van Buitenlandse Zaken en Koninkrijksrelaties, 2007) as important job conditions.

Finally, De Lange and Van der Heijden (2016) found in the literature, that dissatisfaction with working hours, and no retraining or further education was related with a bad work capacity.

Most of the literature shows that the presence of job conditions and favorable job conditions are positively related with aspects of sustainable employability. Because of this, a positive relationship is also expected between job conditions and the whole concept sustainable employability. Accordingly:

H7: Favorable job conditions are positively related to sustainable employability.

Work relations

The final aspect that is investigated in this study regarding work characteristics are work relationships. Work relations are about the support that employees receives from their supervisor and their colleagues (Smulders et al., 2001). When an employee faces stress in his/her work, support from the supervisor or colleagues could weaken this effect. Several studies describe how supervisors and colleagues could help to reduce stress and absenteeism and other positive outcomes that are part of sustainable employability.

Regarding the work relation with the supervisor, De Vries et al. (2005) state that when supervisors pursue a proactive policy, they can play a crucial role in sustaining the employability of older employees. The report from Smulders et al. (2001) mentioned that the behavior of the supervisor influences the absenteeism of employees. A conflict with the supervisor is in fact one of the biggest causes of long-term absenteeism. Also, Ybema et al. (2009), found that support of the supervisor was negatively related with absenteeism (and with early retirement). Support from the supervisor in general and support from the supervisor to keep working after retirement, is positively related with working until and after 65 years. A request from the supervisor to quit earlier with working (because of an upcoming reorganization for example) is negatively related with the employment rate however (Cuelenaere & Chotkowski, 2008).

Next, Meijer & Mevissen (2005) investigated the effect of the style of leadership on the employment rate. They found that a people-oriented leadership style was positively related with the employment rate. Leadership style could also influence health and vitality. For example, relational forms of leadership style have a positive influence with health and vitality (Van Scheppingen et al., 2015). Leaders that show an authoritarian and malevolent leadership style influence the vitality of employees negatively however. Further, also appreciation and respect of the supervisor are important for the employability of employees and for the motivation to continue working (De Lange & Van der Heijden, 2016). De Lange and Van der Heijden (2016) also found in the literature that respect from the supervisor could be of interest for development of employees inside a function. Most of the literature mentioned above, predicts a positive relationship between the support of the team leader and sustainable employability. So, the following hypothesis is used in this study:

H8: Supervisor support is positively related to sustainable employability.

Next to support from the supervisor, also support from colleagues could have an impact on certain aspects of sustainable employability. Employees that stay in contact with their supervisor and with their colleagues during an absence period return relatively early (Smulders et al., 2001). When an employee experiences low support from his/her colleagues or when colleagues and/or supervisor treats the employee unfairly however, this could lead to disability of the employee (Burdorf et al., 2008) or outflow from that employee to unemployment benefit (Ybema et al., 2009).

Further, De Lange & Van der Heijden (2016) mentioned that investing in social networks and work relations is associated with employability. Because people in organizations are moving, it is important to invest in the changing social relationships at work. This is necessary because in many jobs social functioning is needed for

working together, for example. For older employees, it is sometimes difficult to renew social networks and relations.

Finally, Support from colleagues is important for the knowledge transfer. Meijer & Mevissen (2005) found that a transfer of knowledge between younger and older employees was positively related with work capacity. Although certain studies emphasize the importance of support of colleagues on outcome measures of sustainable employability, most studies do so in combination with support from the supervisor. Therefore, it is expected that the support from colleagues strengthens the relationship between supervisor support and sustainable employability. The last hypothesis therefore tests the influence of the total work relations on sustainable employability. This hypothesis was formulated as follows:

H9: Good work relations are positively related to sustainable employability.

Moderator: Affective commitment

Affective commitment has received a lot of attention in the literature, because it can directly or indirectly lead to beneficial effects for organizations. Affective commitment is defined as 'the emotional attachment employees have developed toward the organization' (Van Dam et al., 2016, p. 4).

Several studies found a moderating effect of affective commitment. For example, Schmidt (2007) showed that affective commitment had an moderating effect on the relationship between work stress and job strain, and Rivkin, Diestel and Schmidt (2015) found that affective commitment moderated the relationship between day-specific self-control demands and psychological well-being.

It is expected that the relation between the work characteristics that were examined in this study (job variety, autonomy, work pace, job conditions and work relations), and sustainable employability is positively moderated by affective commitment.

Mathieu and Zajac (1990) stated that employees with enriched jobs (jobs with high autonomy, job variety etc.) are likely to have a higher commitment to the organization than employees with less enriched jobs. Further, Hackman & Oldham (1976) mentioned in their study that work characteristics could affect employees attitudes' like commitment.

Next to this, several studies showed that affective commitment was found negatively related with turnover (intention) and positively related with on the job behaviors like: attendance, organizational citizenship behavior and performance; and was positively related with employee health and well-being (Meyer, Stanley, Herscovitch & Topolnytsky, 2002; Van Dam et al., 2016). Employees that are emotionally attached to the organization (or the department) are more likely to invest effort for the company and are able to make a higher 'valuable contribution' than employees that are less committed to the organization. Therefore, it is expected that the positive relationship between job characteristics and sustainable employability is even stronger when an employee has a higher affective commitment to the organization/department. This is expected because enriched jobs (with high autonomy, job variety, good job conditions etc.) can lead to more affective commitment, and employees that have a high level of affective commitment are willing to go 'an extra mile' and invest more effort in the company to make a valuable contribution, which increases their sustainable employability. This way, affective commitment could strengthen the relationship between work characteristics and sustainable employability. The following hypothesis was formulated:

H10: Affective commitment to the department strengthens the positive relationship between work characteristics and sustainable employability.

Figure 3 shows the hypothesized research model, including all hypothesized relationships.

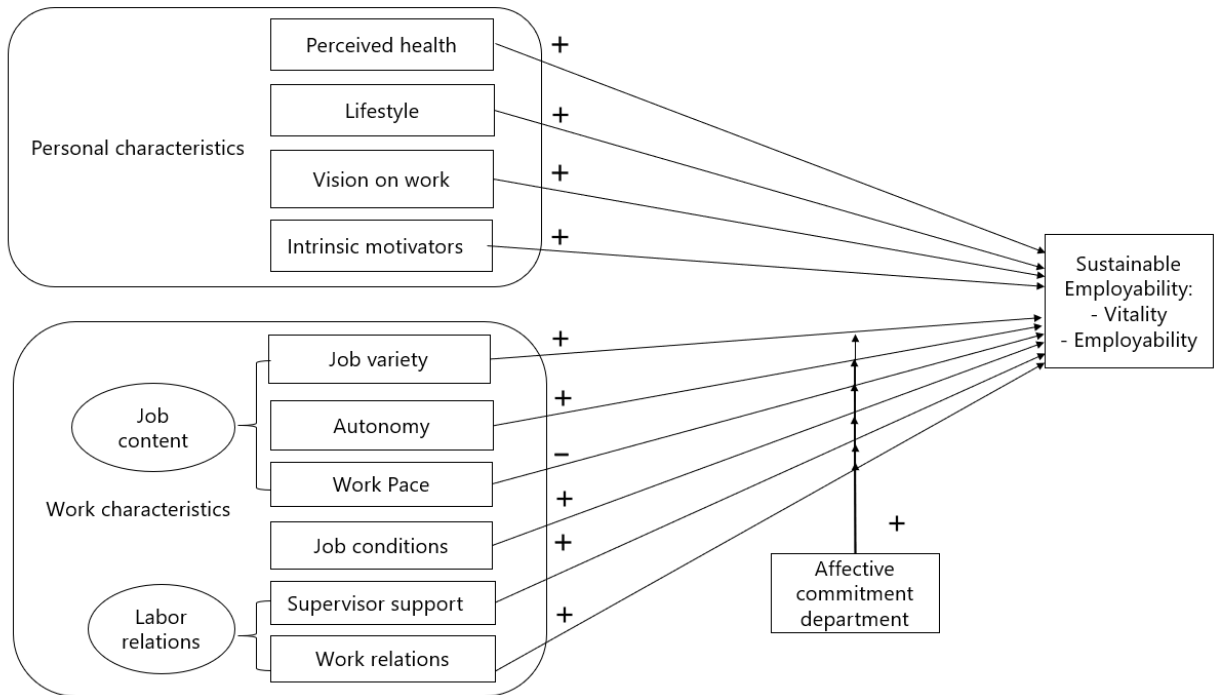


Figure 3: Hypothesized research model of sustainable employability and important determinants

5. Methodology

This chapter explains the methodology that was used in this study. In section 5.1, the research design that was used in this study is explained. In section 5.2 information is given about the participants and the company under study. Also, the procedure of the quantitative study and of the qualitative study is explained. Section 5.3 shows the quantitative method: the procedure and response rate on the questionnaire, the measurements and the analysis. Finally, in section 5.4, the method regarding the qualitative part of the study is explained.

5.1 Research Design

This research can be considered a case study since it is about ‘the in-depth examination of a single instance of some social phenomenon’ (Babbie, 2012, p. 338). Only one department of an organization in the sector of knowledge-intensive work was investigated thoroughly. This research tries to explain which determinants are important for increasing the sustainable employability of professional employees in the knowledge-intensive sector.

A mixed method was used to answer the research question. Mixed methods emphasize both the importance of quantitative and qualitative research and therefore the goal of mixed methods is: ‘not to replace either of these approaches but rather to draw from the strengths and minimize the weaknesses of both in single research studies and across studies’ (Johnson & Onwuegbuzie, 2004, p. 14-15). In this study, quantitative research (a questionnaire) was used to investigate how employees of the department score on the determinants and sustainable employability, and if these concepts are related to each other. The sample of the quantitative research was quite small (only 62 people are working in the department) and therefore it was difficult to obtain significant relationships between the concepts. Despite this, quantitative research is still useful, because it was possible to collect data from (almost) all the employees in the department, while it was not possible to interview all employees in such short timeframe. Further, although not all relationships were significant, the numbers still gave an indication which concepts are important for sustainable employability.

Qualitative research (interviews) on the other hand, was used to gain a complementary, deeper understanding of the determinants and their relationship with sustainable employability. Further it examined how the HR manager and leaders of the department contribute to the concepts and the relationships with sustainable employability.

Researchers can be creative when using mixed methods (Johnson & Onwuegbuzie, 2004) and therefore, many different types of mixed methods exist. Often, three dimensions are distinguished however: mixing, time and emphasis. (Leech & Onwuegbuzie, 2007). The level of mixing is about if the quantitative and qualitative methods are mixed in one of more stages of the research (fully mixed) or if the two methods are only mixed in the data interpretation stage (partially mixed). The time dimension is about whether the quantitative data and the qualitative data are collected at the same point in time (concurrent) or one after the other (sequential), and emphasis means choosing if one of the research method gets more emphasis in the study than the other method (dominant status), or if they are treated of equal importance (equal status). This research uses a partially mixed concurrent equal status design, which means that quantitative and qualitative data are retrieved at the same point in time, have equal importance, and are not blended before the interpretation phase (summary and conclusions) of the research.

5.2 Participants and Procedure

This case study was conducted in a customer service department of an IT company in the Netherlands. The department consisted of 62 employees, 55 males (88,7%) and 7 females (11,3%). Both quantitative and qualitative data was used: a questionnaire that was sent to all the employees of the department and five in-depth semi-structured interviews with the HR manager, department manager and (the three) team leaders. Permission for this study was granted by the ethics committee of the University of Twente.

Employees were informed that a research into sustainable employability was conducted in their department. The researcher was present in the company (and at the department) for 22 weeks to conduct the research and to get familiar with the company, the work culture and the employees.

5.3 Quantitative Study

Procedure and response rate

In an e-mail, all employees of the department were asked to fill in an online questionnaire. This e-mail mentioned what the goal of the research was, that participation was voluntary and that responses would be treated confidentially. The e-mail was sent by the department manager, with a message from the researcher. This way, the importance that the organization posted on the research was emphasized. The questionnaire was open for four weeks, and a reminder to fill in the questionnaire was sent by email by the researcher after two weeks. Further, in a team meeting and informal conversations, employees were reminded again if they wanted to fill in the questionnaire. The questions in the questionnaire were asked in Dutch. Appendix 1 and 2 shows the English and the Dutch version of the questionnaire. In total 46 employees filled in the questionnaire. The division of employees who filled in the questionnaire among the different departments/age categories/gender/tenure in the organization is summarized in table 1, 2, 3 and 4:

Team	Number of employees that filled in the survey	Percentage of employees that filled in the survey	Percentage of employees that filled in the survey of the whole team
Support	20	43,5%	100%
Development	2	4,3%	22,2%
Technical Services	8	17,4%	88,9%
Consultancy	9	19,6%	64,3%
Delivery Management/Sales & Service Management/ I am a Team leader of Director	7	15,2%	70%
Total	46	100%	

Table 1: employees who filled in the survey in the different departments

Gender	Number of employees that filled in the survey	Percentage of employees that filled in the survey	Percentage of employees that filled in the survey of the whole 'gender' category
Men	39	84,8%	70,9%
Female	6	15,6%	85,7%
Total	46	100%	

Table 2: employees who filled in the survey based on gender

Age	Number of employees that filled in the survey	Percentage of employees that filled in the survey	Percentage of employees that filled in the survey of the whole 'age' category
18-35 years	11	23,9%	73,3%
36-45 years	15	32,6%	71,4%
46-55 years	16	34,8%	72,7%
56-65 years	4	8,7%	100%
Total	46	100%	

Table 3: employees who filled in the survey based on age

Tenure	Number of employees that filled in the survey	Percentage of employees that filled in the survey	Percentage of employees that filled in the survey in the different tenure groups
Less than one year	8	17,4%	88,9%
1-5 years	18	39,1%	85,7%
5-10 years	16	34,8%	64%
More than 10 years	4	8,7%	57,1%
Total	46	100%	

Table 4: employees who filled in the survey based on tenure in the organization

Measurements

Control variables

The following control variables were used in this study: gender of the employee (Men/Female, the age of the employee (18-25/26-35/36-45/46-55/56-65), the team in which the employee was working (Support/Development/Technical Services/Consultancy/Delivery Management, Sales & Service Management, Team leader or Director), and the work tenure at the organization (0 to 6 months/6 months to one year/1-5 years/5-10 years/more than 10 years).

Dependent variable: Sustainable employability

The measurement of sustainable employability was partly based on the sustainable employability scale of Van Dam et al. (2016), with contains employability, vitality and affective commitment. Only affective commitment was not used in this study, because it did not really fit the definition of 'making a valuable contribution' in the sustainable employability definition. Instead affective commitment (to the department) was used as moderator in this study, because it is expected to strengthen the effects between the work characteristics and sustainable employability.

Vitality was used because it recognizes that employees must safeguard their health and welfare. The scale with six items of vitality of Schaufeli & Bakker (2003) was used (e.g. 'At my work, I feel bursting with energy'). Eight response options were possible (ranging from 'never' to 'daily' (always)). The Cronbach's alpha was .876. In line with Field (2005), a Cronbach's alpha of .7 or higher is used for sufficient consistency in this study.

Finally, instead of using the employability scale of Van Dam et al. (2016), the scale of de Witte (1992) was used, because this scale makes a clearer distinction between internal and external employability. This distinction is also emphasized in the definition, because the definition focuses on the interests of both the employer and the employee in the present time and the future. Therefore, it is important that employees are both internally and externally employable. The scale consisted of eight items. Four items measured the external employability (e.g. 'When I lose my current job, I could easily get a new job'), and four items measured the internal employability

(e.g. 'Within my current job, I am employable for different kinds of work'). Answers were given on a five-point Likert scale ('completely disagree' to 'completely agree'). The Cronbach's alpha for this scale was .716. Both the vitality and the employability scale were available in Dutch.

Moderator: Affective commitment

Affective commitment was measured with 5 items (e.g. 'I feel emotionally attached to this organization') from the scale from Van Dam et al. (2016). The respondents were asked to fill in two scales, their affective commitment to the organization and their affective commitment to the department. Both affective commitment to the organization and to the department were measured, so that the organization could see if differences between these scales existed. In the analyses however, only affective commitment to the department was used, because the research was specifically focused on increasing sustainable employability in the department. Answers could be given on five-point Likert scale ('completely disagree' to 'completely agree'). The related Cronbach's alpha's were .915 (commitment with the organization) and .969 (commitment with the department).

Health

For measuring health one item of Kempen (2012) was used: 'How is your health in general?'. The answer possibilities were: 'Excellent', 'Very good', 'Good', 'Reasonable', and 'Bad'.

Lifestyle

Lifestyle was measured with the variables that Van Scheppingen et al. (2015) used in their study: Physical activity, smoking and alcohol use, healthy dietary habits and relaxation. In total 9 questions (items) were asked about the lifestyle of employees. Because lifestyle could be a sensitive subject for employees, these questions were voluntary (the questions could be skipped, without the message 'this question requires an answer'), and response categories were adapted. Physical activity was assessed with two items (Kemper, Ooijendijk, & Stiggelbout, 2000). The items were: 'How many days a week do you spend at least 30 minutes on moderate intensity physical activities, comparable to walking or cycling?', and 'How many days a week during leisure time do you spend at least 20 minutes on vigorous intensity physical exercise or sports?'. The response options were 0, 1, 2, 3, 4, 5, 6, or 7 days a week.

Smoking and alcohol use was measured with two items: 'How many days per week, do you smoke?' and 'how many days per week, do you consume alcohol?'. To increase the chance that employees would fill in these items, response options were changed from filling in the number of days per week to making a choice between 'never', 'sometimes', 'often' and 'always'.

Dietary habits were measured with three items from the Short Food Frequency Questionnaire (Van Assema, Brug, Ronda, Steenhuis, & Oenema, 2002). Respondents were asked how many days a week they 'have breakfast', 'eat vegetables', and 'eat fruit'. To increase the chance that these questions were answered, also these response options were changed from 0 to 7 days a week, to 'never', 'sometimes', 'often', and 'always'.

Finally, Relaxion measured if the employees experienced enough relaxation moments during their work and in their private situation. This was measured with 2 items on a five-point Likert scale.

Vision on work

Employees were asked two questions about their vision on work in general, based on Smulders et al. (2001). Vision on work had a different scale than the other variables. Therefore, it was placed at the end of the questionnaire with an explanation how the scale should be filled in. In the first question, respondents were asked to divide 100 points over four life areas: free time (hobbies, sport, recreation, contact with friends), society (volunteer work, work for the union, politics, church), work, and family. The points were dividend based on the importance of a certain area for the employee.

During the second question, respondents were asked to divide the numbers 1 to 10 over aspects: recognition, interesting work, responsibility, achieving/establishing something, learn- and growth possibilities, good colleagues, good guidance, good job conditions, good reward, and certainty. Every number could be used once.

Autonomy

The degree of autonomy that an employee perceived in his or her job was measured with four items of Thomas & Prottas (2005). 'I have the freedom to decide what I do on my job' and 'I decide when I take breaks' are example items. In the original scale, four response options were possible, but to give the respondents the opportunity to use the 'neutral' option, a five-point Likert scale was used ('completely disagree' to 'completely agree'). The scale was translated to Dutch and the Cronbach's Alpha was .754

Job variety

Job variety was measured with the six-item scale of Karasek (1985) that was translated to Dutch. Example items are 'My work requires me to be creative' and 'I have the opportunity of developing my inherent capabilities. Answers varied on a five-point Likert scale from 'completely disagree to 'completely agree'. The Cronbach's Alpha was .709.

Work pace

The scale 'Work pace' was measured with the scale of Kristensen et al. (2004). The scale consisted of seven items, for example 'Do you have to work very fast?'. Two items were reversed: 'How often can you take it easy and still do your work?' and 'Do you have enough time for your work tasks?'. The Cronbach's Alpha of this scale was .896. Response options were 'always', 'often', 'sometimes', 'seldom', 'never/hardly never'.

Job conditions

Satisfaction with the job conditions was measured with the scale of the Dutch working conditions survey (Van Zwieten et al., 2013). Respondents were asked how satisfied they were with fourteen frequently used job conditions, on a scale from 1 (very dissatisfied) to 10 (very satisfied). Examples of job conditions are: salary, promotion- and career opportunities, flexible working hours and type of employment. The Cronbach's Alpha was .845

Work relations

The items of the labor relations scale from Smulders et al. (2001) distinguished two types of labor relations: the labor relation with the supervisor and the labor relations with colleagues. Sixteen items were used, twelve items for the labor relation with the supervisor and four items for the labor relations with colleagues. Six response options were possible: A five-point Likert scale (ranging from 'completely disagree' to 'completely agree', and a column for 'not applicable'. An example item that measured the labor relation with the supervisor was: 'My supervisor cares about the well-being of employees'. An example item that measures the labor relations with colleagues was: 'My colleagues are friendly'. The Cronbach's Alpha was .885.

Analysis*Cases deleted*

In total 48 respondents filled in the questionnaire, but the results of two cases were deleted, because these 2 employees only filled in their gender, age, team in which they were working and their tenure in the organization. In total 46 cases were analyzed as stated in table 1,2,3 and 4.

Recoding and adjustments to the data

The values of the following items/variables were recoded:

- The answers '0-6 months' and '6 months to one year' from the question: 'How long have you been working for the company?' were computed to the answer 'less than one year' because of anonymity of respondents.
- From the scale job variety, the answers on the item: 'My work involves a lot of repetitive tasks', were reversed, because the item measured the opposite of the other questions. Because the Cronbach's Alpha

was too low (.588) the items 'My work involves a lot of repetitive tasks' and 'I have the opportunity of developing my inherent capabilities' were deleted. The new Cronbach's Alpha was .709.

- The answers on the variable 'Health' were reversed, so that a higher number indicated a better health.
- The answers on the variable 'Smoking and Alcohol Use' were reversed. A higher number now indicated the 'good' behavior of sometimes/never smoking or using alcohol.
- The answers on the question where employees were asked to divide the numbers 1 to 10 among different aspects of work, was reversed. A higher number now indicated a more important aspect.
- The answers on the items 'How often can you take it easy and still do your work?' and 'Do you have enough time for your work tasks?' were reversed because these items measured the opposite of the other questions.
- The question where employees were asked to divide 100 points between the aspects 'family', 'work', 'free time' and 'society' was not filled in correctly by three employees, because the four aspects were given more than 100 points and one employees divided 100 points about each aspect. The answers of these respondents were adapted, keeping the same distance (in percentages) between the answers that they originally had given.

Descriptive statistics & correlations

The following tables show the descriptive statistics of the variables under study. Table 6 shows the number of cases (N), the mean, the standard deviation, range, minimum and maximum of the different variables. One respondent only answered half of the questionnaire, therefore some variables have 46 respondents while other variables have 45 respondents. Further, the table shows that employees score on average higher on external employability (M=3.79) than on internal employability (M=3.41). Regarding affective commitment, the scores for commitment with the organization (M=3.71) and with the department (M=3.77) are almost equal. The mean of the variables value for work, society, free time, and family was much higher, because employees could divide 0 to 100 points to this value. The means of these variables show that employees give on average the most points to the value 'Family' (M=38.44), followed by 'Free time' (M=25.51), 'Work' (M=25.29) and then 'Society' (M=10.76). Employees score slightly higher on intrinsic motivators than on extrinsic motivators in this department and there is quite variance in the numbers given to different job conditions.

	N	Mean	SD	Range	Minimum	Maximum
Vitality	46	5,8116	,78222	3,5	3,5	7
Total employability	46	3,6033	,46645	1,88	2,63	4,5
Internal employability	46	3,4130	,56327	2,25	2	4,25
External employability	46	3,7935	,65469	3	2	5
Affective commitment organization	46	3,7130	,73352	4	1	5
Affective commitment department	46	3,7696	,89539	4	1	5
Sustainable employability (total)	46	4,7074	,51003	2,23	3,25	5,48
Sustainable employability (internal)	46	4,6123	,56011	2,67	2,75	5,42
Sustainable employability (external)	46	4,8025	,53312	2,17	3,42	5,58
Health	46	3,4783	,93664	3	2	5
Physical activity	45	4,3778	1,93107	7	1	8
Dietary habits	45	3,4519	,55576	2	2	4
Smoking & alcohol use	45	3,3667	,54772	2,5	1,5	4,5
Relaxion	45	3,5667	,78044	3	1,5	4,5
Lifestyle	45	3,6907	,64906	2,75	2,25	5

Value 'Work'	45	25,29	11,638	59	1	60
Value 'Society'	45	10,76	7,059	30	0	30
Value 'Free time'	45	25,51	10,159	45	10	55
Value 'Family'	45	38,44	12,664	62	8	70
Intrinsic motivators	45	5,7389	1,61927	5,50	3	8,5
Extrinsic motivators	45	5,3407	1,07951	3,67	3,5	7,17
Autonomy	46	3,8152	,55885	2,5	2,5	5
Job variety	46	4,2283	,43406	1,75	3,25	5
Work pace	45	2,8952	,64996	2,86	1,43	4,29
Salary	45	7,0000	1,36515	6	3	9
Result-oriented reward/performance reward	45	6,4000	1,85129	9	1	10
Pension scheme	45	5,5111	1,72709	7	2	9
Travel expenses	45	6,8000	1,90215	9	1	10
Possibilities to compile employment conditions	45	5,5556	1,87757	7	1	8
Performance appraisals	45	6,1111	1,49579	6	2	8
Promotion- and career opportunities	45	6,1333	1,37510	7	1	8
Education possibilities	45	6,4444	1,93714	7	1	8
Possibilities to work part-time	45	7,2000	1,71358	7	3	10
Flexible working hours	45	7,1778	1,86217	8	2	10
Working from home	45	7,5556	1,51591	6	4	10
Leave- and vacation possibilities	45	7,0667	1,38828	7	3	10
Possibilities for consultation	45	7,2667	1,46784	6	3	9
Type of employment	45	7,7556	1,33409	5	5	10
Total job conditions	45	6,7127	,94705	3,86	4,43	8,29
Support of the leader	46	3,5942	,56180	2,67	2	4,67
Support of colleagues	46	4,3804	,62303	3	3	6
Total work relations	46	3,7908	,47328	2,25	2,44	4,69

Table 6: descriptives of variables under study

Next to these descriptive statistics, table 7 describes the correlations between the variables under study in a Pearson Correlation Matrix. Next to the obvious expected correlations (for example between tenure and age and between the different kinds of sustainable employability), this table shows that effects are expected between job conditions and sustainable employability, and between commitment and sustainable employability. Further, age and health are correlated with external sustainable employability and tenure in the organization is related to both total and internal sustainable employability. Finally, age, value for work, work relations with the leader/colleagues/in total and job conditions were all significantly correlated with affective commitment. The other (significant) correlations can be found in the table.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Gender	1																							
Age	-,101	1																						
Team	-,199	,133	1																					
Tenure	-,271	,299*	,064	1																				
SE (total)	,031	-,254	,154	-,309*	1																			
SE (internal)	,073	-,175	,120	-,327*	,936**	1																		
SE (external)	-,018	-,301*	,169	-,247	,930**	,741**	1																	
Health	-,023	,204	,152	,164	,252	,162	,312*	1																
Lifestyle	-,064	,073	,137	-,090	,218	,195	,211	,314*	1															
. Society	-,046	-,122	-,245	,059	,003	,019	-,014	,072	,051	1														
. Work	-,096	,146	,077	-,109	,200	,235	,135	-,010	,133	-,193	1													
. Family	,127	,059	,112	,041	-,174	-,152	-,173	,074	-,136	-,315*	-,524**	1												
. Free Time	-,016	-,156	-,058	,032	-,015	-,094	,070	-,130	-,019	-,082	-,358*	-,427*	1											
. Intr. motivators	,147	-,081	,047	,086	-,011	-,040	,021	,104	-,102	,142	,053	,142	-,336*	1										
. Extr. motivators	-,147	,081	-,047	-,086	,011	,040	-,021	-,104	,102	-,142	-,053	-,142	,336*	-,1000*	1									
. Autonomy	-,324*	,256	,487**	,202	,075	,016	,126	,226	-,025	-,386**	,105	,016	,129	-,204	,204	1								
. Job variety	-,049	-,038	-,095	,192	,156	,165	,125	,012	-,180	-,120	-,197	,284	-,044	-,197	,197	,172	1							
. Work pace	,124	,070	-,195	-,097	-,038	,044	-,118	-,051	,287	-,061	-,122	,132	,017	-,118	,118	-,215	-,165	1						
. Work relations (total)	-,190	,263	,262	,062	,229	,272	,152	,162	,128	-,286	,008	,134	,023	-,210	,210	,338*	,214	,181	1					
. Work relations (superior)	-,144	,236	,290	-,042	,212	,260	,132	,067	,023	-,254	-,005	,159	-,017	-,145	,145	,297*	,166	,113	,946**	1				
. Work relations (colleagues)	-,188	,160	,011	,301*	,123	,124	,106	,310*	,323*	-,186	,036	-,022	,115	-,244	,244	,222	,201	,243	,480**	,169	1			
. Job conditions	-,009	,199	,293	-,192	,397**	,542**	,188	,190	,194	-,305*	,072	,221	-,146	-,171	,171	,331*	,155	,180	,690**	,641**	,365*	1		
. Commitment organization	-,033	,291*	,072	-,013	,391**	,505**	,218	,204	,231	-,230	,504**	-,056	-,349*	-,017	,017	,104	,071	,125	,492**	,400**	,412**	,659**	1	
. commitment partment	,056	,223	-,132	,115	,306*	,394**	,172	,182	,097	-,035	,397**	-,137	-,260	,105	-,105	,117	,095	-,122	,411**	,320*	,384**	,479**	,770**	1

*p < .05

** p < .01

Table 7: Pearson Correlation Matrix

5.4 Qualitative Study

Next to the questionnaire, five semi-structured interviews were conducted. Quantitative data was collected from (almost) all employees of the department to reveal the relationships between the determinants and sustainable employability and to give an indication in numbers, which relationships exist between personal- and work characteristics and sustainable employability.. Qualitative data was used to collect more in-depth information about the personal- and work characteristics and (the effects on) sustainable employability, from the perspective of the leaders in the company.

Semi-structured interviews 'consist of several key questions that help to define the areas to be explored, but also allows the interviewer to diverge in order to pursue an idea or response in more detail' (Gill, Stewart, Treasure & Chadwick, 2008, p. 291). The advantage of semi-structured interviews is therefore that an interview template gives the researcher guidelines about which topics to discuss or questions that should be asked, but that it is also flexible so that follow-up questions can be asked to get the right information. Interviews are useful in this study, because they can help to explore the topics of the independent and dependent variables and the relationship between them, and it gives more in-depth knowledge than when only using the questionnaire.

Procedure

The HR manager, department manager and the three team leads were asked via e-mail if they wanted to cooperate in an individual semi-structured interview. If the invitees wanted to cooperate (all invitees wanted to cooperate), a meeting from approximately one hour was scheduled. At the beginning of each interview, the researcher asked permission to record the interview. This was permitted for all interviews. During the interview, open-ended questions were asked about the influence of the leaders on sustainable employability and the determinants that were investigated in this study: lifestyle, job variety, autonomy, work relations, health, general vision on work, work pace and job conditions. The template of the interview can be found in appendix 3.

Analysis

All interviews were recorded, so that transcription of the interviews was possible. After the transcripts were made, the data was coded, which means assigning a word or a short segment to different sections of the data (Saldana, 2008). Coding can be used to help organize and provide meaning to the data that is collected. In this study, the interview transcripts were coded with the help of the analysis tool atlas.ti. The codes that were used in this study were based on the hypotheses that were set and the questions in the questionnaire. The codes that were created consisted of categories and subcategories. For example 'Health' is a category for all phrases that are connected with health and 'Employability_internal' is a subcategory for all phrases that are about the internal employability of employees. The list with all codes that were assigned in the transcripts of the interviews, can be found in table 5.

Autonomy	Employability_external	Employability_internal	Employability_total
Health	Job conditions_education possibilities	Job conditions_flexible working hours	Job conditions_leave and vacation possibilities
Job conditions_performance appraisals	Job conditions_performance reward	Job conditions_possibilities for consultation	Job conditions_promotion and career opportunities
Job conditions_pension	Job conditions_salary	Job conditions_total	Job conditions_working from home
Extrinsic motivators	Job description	Lifestyle_alcohol	Lifestyle_dietary habits
Lifestyle_physical activity	Lifestyle_relaxion	Lifestyle_smoking	Lifestyle_total
Lifestyle_weight	Retention of employees	Job variety	Structure_barriers
Structure_helping	Structure_HR	Structure_organization	Structure_total
Sustainable employability	Value for work_family	Value for work_free time	Value for work_private
Value for work_society	Value for work_total	Value for work_work	Vitality
Work pace	Work relations_colleagues	Work relations_supervisor support	Work relations_total

Table 5: Codes used in the interviews

6. Results

In this chapter, the results that were found in this study will be presented. Since a partially mixed concurrent equal status design was used, the quantitative results and the qualitative results will be presented separately. The quantitative part of this chapter, first explains how the assumptions for a linear regression analysis are met and then the results are presented for the total sustainable employability concept. Further, extra analyses have been done to deepen the understanding of sustainable employability and to show the differences between focusing on internal employability or on external employability. The results for total sustainable employability are used however, together with the qualitative results to evaluate the hypotheses in chapter 7. In the qualitative part of the chapter, information about the personal- and work characteristics and how the company and leaders influence these characteristics are explained. Further, the relationships that were found in the interviews between the independent variables and sustainable employability are revealed.

4.1 Quantitative Results: Linear Regression Analysis

Assumptions regression analysis

Before a linear regression analysis could be conducted to see if a relationship between the independent variables and sustainable employability exists, first it was checked if the assumptions for a linear regression analysis were met (Huizingh, 2012):

- Measurement level

The independent variables and the dependent variable should be measured on an interval or ratio scale. This was the case in this study.

- Linear relationship

A linear relationship must exist between the independent variables and sustainable employability. Appendix 4 shows the scatterplots for each independent variable and their relationship with sustainable employability. Some scatterplots only indicate a small relationship with sustainable employability (for example autonomy and lifestyle) while others show a stronger linear relationship (for example job conditions and work relations).

- Normality

The normality assumption states that the dependent variable should have a normal distribution for every value of the independent variable. This is shown in appendix 5 with a histogram, that indicates that the values are approximately normally distributed.

- Homoscedasticity

Homoscedasticity means that the variance of the dependent variable must be equal for each value of the independent variable. This can be shown with the scatterplot in appendix 6. The values in the scatterplot do not narrow down or widening at the left, right, bottom or in the top, but the values in the bottom and at the top are approximately equal for different values of the dependent variable. Thus, homoscedasticity of the data can be assumed.

- No correlation between the residuals

The last assumption for linear regression that Huizingh (2012) mentioned is that the residuals should be uncorrelated. This could be checked by using the Durbin-Watson test. Huizing (2012) stated that a value between one and three is acceptable. The Durbin-Watson value of this regression analysis was 2,651 which indicates that the residuals are indeed uncorrelated.

Regression analysis

Table 8 shows the results of the linear regression analysis. The table shows four models. In model 1 only the control variables are used. The model shows a small positive effect ($R^2 = .163$) but the significance is .113. In this study a p -value $< .05$ was used for significance, in line with most social research. Also, the small negative relationship ($\beta = -.268$) between tenure at the organization and sustainable employability is not below .05 and

therefore not significant. Thus, the model is not significant and the control variables do not significantly influence sustainable employability.

	Model 1	Model 2	Model 3	Model 4
	β	β	β	β
CONTROL VARIABLES				
Gender	-.024	.002	.020	.004
Age	-.202	-.361*	-.316*	-.283#
Team	.193	.080	.098	.116
Tenure	-.268#	-.180	-.195	-.226
INDEPENDENT VARIABLES				
Health		.254		
Lifestyle		.090		
Value for work		.233		
Intrinsic motivators		.018		
Autonomy		-.056		
Job variety		.186		
Work pace		-.036		
Job conditions		.320		
Supervisor support		.032		
Work relations total		-.019		
Personal characteristics			.195	
Work characteristics			.341*	.318*
INTERACTION EFFECT				
Commitment x work characteristics				-.003
OUTPUT				
R2	.163	.448	.286	.250
Adjusted R2	.081	.191	.176	.134
F	1,996	1.742	2.599	2.161
Sig.	.113	.099	.032	.068

a. dependent variable: Sustainable Employability (Total employability, vitality)

#p < .10

*p < .05

** p < .01

*** p < .001

Table 8: Regression analysis total sustainable employability

In model 2 the control variables and all the independent variables are included in the analysis. The effect is stronger than in model 1 ($\beta = .448$), but this model is also not significant (the p-value is < .10 but not below .05). Based on model 2, the total hypothesized model with all the direct relationships on sustainable employability is therefore not significant. Only age shows a significant negative relationship ($\beta = -.361$) with sustainable

employability. This indicates that older employees score lower on sustainable employability than younger employees.

In model 3, health, lifestyle, value for work and intrinsic motivators are merged to one variable: personal characteristics. Autonomy, job variety, work pace, job conditions, supervisor support, and work relations are merged to the variable: work characteristics. The table shows that this model is significant (.032) and that work characteristics has a significant positive relationship on sustainable employability, while the relationship between personal characteristics and SE is not significant. This gives an indication that all work characteristics together are important for the total SE of employees and that work characteristics have a stronger influence on SE than personal characteristics.

Finally, Model 4 of table 8 shows the relationships between the control variables, work characteristics and the moderation effect of affective commitment to the department on sustainable employability. The results of Model 4 show that the model is not significant (p -value $> .05$) and that there is no moderating effect of commitment ($-.003$). Therefore, commitment does not strengthen the effect of work characteristics on sustainable employability.

Extra analyses

As described in the theory part, sustainable employability means that an employee is able to work outside the organization (external) and is able to continue working at his or her own organization (internal) with enough challenging work, opportunities, etc. Therefore, for evaluating the hypotheses, the total sustainable employability was used. For a deepening understanding what is in particular important for the company to increase the internal employability or the external employability, also separate analyses for internal sustainable employability (items about external employability were excluded) and external employability (the items about internal employability were excluded) were presented below.

Internal sustainable employability

Table 9 shows the results for internal sustainable employability. In Model 1 only the control variables are included and it shows that also for internal employability, the control variables do not significantly influence sustainable employability (tenure still has a significance $> .05$).

Model 2 however, is significant and the R^2 is .519 which states that the model explains 51,9% of the total variance. This value is quite high and shows that the included characteristics are together significantly related with internal sustainable employability. Next to this, also job conditions are significantly (p -value $< .01$) related with the dependent variable, and this result is quite strong ($\beta = .607$). This means that satisfaction with job conditions is positively related with the internal sustainable employability of employees. Further, it shows that age is not significant in this model (which was the case for total SE) and that value for work is almost significant (p -value $< .10$).

Model 3 shows the effect of the total personal characteristics and work characteristics on sustainable employability. The total model is significant (.012) and work characteristics have again a significant positive relationship with SE. the effect (.439) is even stronger than the effect of work characteristics on total SE (.341) which indicates that work characteristics are in particular important for increasing the internal SE of employees. Finally, Model 4 also involves the moderation effect of affective commitment to the department. The total model is significant, but again the moderator is not significant, so commitment does not strengthen the hypothesized relationship between work characteristics and sustainable employability.

	Model 1	Model 2	Model 3	Model 4
	β	β	β	β
CONTROL VARIABLES				
Gender	.012	.005	.066	.038
Age	-.104	-.282#	-.248#	-.201
Team	.156	.056	.035	.060
Tenure	-.303#	-.100	-.214	-.244
INDEPENDENT VARIABLES				
Health		.155		
Lifestyle		.053		
Value for work		.271#		
Intrinsic motivators		-.007		
Autonomy		-.170		
Job variety		.190		
Work pace		.003		
Job conditions		.607**		
Supervisor support		.139		
Work relations total		-.244		
Personal characteristics			.224	
Work characteristics			.439**	.399*
INTERACTION EFFECT				
Commitment x Work characteristics				-.061
OUTPUT				
R2	.137	.519	.331	.286
Adjusted R2	.053	.294	.228	.176
F	.627	2.309	3.213	2.606
Sig.	.186	.027	.012	.032

a. dependent variable: Sustainable Employability (internal employability, vitality)

#p < .10

*p < .05

** p < .01

*** p < .001

Table 9: Regression analysis: Internal sustainable employability

External sustainable employability

The results regarding external sustainable employability are included in table 10. The control variables are not significantly ($R^2 = .167$, $p > 0.05$) related to sustainable employability as can be seen in Model 1. Further, it shows that while for total SE and internal SE 'Tenure' was almost significant (.10), for external SE 'Age' was almost significant (p-value was below .10).

Model 2, with all independent variables and control variables is also not significant (.205), but shows that age is negatively related with external employability. This means that older employees are less able to find another (similar) job on the labor market than younger employees. Further it shows that health has more influence on external sustainable employability in comparison to total SE and internal SE, because the relationship is almost significant (p-value < .10).

Model 3 shows the influence of the total personal characteristics and the work characteristics on external SE. The model is not significant (p-value .138) and personal- and work characteristics are both not significantly related with external SE. Only age has a significant negative relationship with external SE.

Finally, Model 4 shows that also for external SE, commitment to the department does not strengthen the relationship between work characteristics and external sustainable employability.

	Model 1	Model 2	Model 3	Model 4
	β	β	β	β
CONTROL VARIABLES				
Gender	-.058	-.002	-.031	.032
Age	-.276#	-.394*	-.344*	-.330*
Team	.207	.094	.152	.159
Tenure	-.194	-.239	-.149	-.175
INDEPENDENT VARIABLES				
Health		.323#		
Lifestyle		.117		
Value for work		.159		
Intrinsic motivators		.042		
Autonomy		.072		
Job variety		.155		
Work pace		-.073		
Job conditions		-.028		
Supervisor support		-.085		
Work relations total		.221		
Personal characteristics			.137	
Work characteristics			.191	.189
INTERACTION EFFECT				
Commitment x Work characteristics				.059
OUTPUT				
R2	.167	.398	.211	.196
Adjusted R2	.086	.117	.090	.073
F	2.056	1.418	1.740	1.588
Sig.	.104	.205	.138	.177

a. dependent variable: Sustainable Employability (external employability, vitality)

#p < .10

*p < .05

** p < .01

*** p < .001

Table 10: Regression analysis: external sustainable employability

6.2 Qualitative Results

Personal characteristics

Health

Since recently, HR is occupied with the health of employees. For example, attention is given to the physical workplace of employees, with higher desks that promote standing instead of sitting, good office chairs and additional computer screens. Further, plans for a preventive medical examination (PMO in the Netherlands) are prepared for the meeting with the management in September. When the plans are approved, they could probably be implemented in 2018. A PMO became recently mandatory for organizations because of a change in the job conditions legislation (ARBO-wet) in the Netherlands. A PMO measures for example the blood pressure, BMI, cholesterol, lung function, hearing test, work experience and the sustainable employability index (Simple check, 2017).

Next to this, attention to the health of employees is also given when an employee calls in sick.

Further, the department manager and the team leaders use informal conversations to gain information about the health of an individual. For example, the department manager stated: *'Coincidentally, I asked XX about his back problems today. So yes, I ask people about their health when I know there are issues. But I do not know the problems of everyone. I regularly ask people when I encounter them at the coffee machine or somewhere else: 'How are you? This is a bit a standard question, I know. But I pose the question and when I know people have issues, I ask questions about it and I try to be involved. As far as it is possible of course, my agenda does not allow me to talk with people about their well-being all day.'*

Also, the team leaders mention that often health problems, visiting the doctor or sick leave are reasons to ask employees about their health. As one team leader states: *'When I know there are issues, I try to talk with them. Sometimes I look at people and estimate if they are feeling well or not, because I am personally interested in an employee. I am a bit techy, so that is a subject that requires my attention. But I think it is important, for sure. The well-being of people is extremely important.'*

Information about the health of employees is also shared between team leaders and the depart manager. When an employee in a team calls in sick or important e-mails about births and death of relatives are also send to the department manager, next to the team leader.

In the interviews the importance of health was also mentioned in relation to sustainable employability: *'I think that we have to show more concrete and visible that the employability of employees is of importance for us. For example, we have to give more visible and active attention to sport programs or health programs.'*

Lifestyle

Regarding a healthy lifestyle of employees, HR stimulates initiatives that arise. For example, the company now has a soccer team, because this need arose from employees in CS-MS, and it is now facilitated by the company.

Recently, an initiative for a squash team was started. Further, some employees participate in for example the 'bridge-to-bridge-loop' and the 'dam-tot-dam-loop'. For the future, plans are made for offering a membership for the fitness school. So different initiatives regarding sport are facilitated and supported.

Another characteristic of a healthy lifestyle are good dietary habits. In the canteen of the company, the products are partly changed, so employees can now make a healthy choice. Unhealthy products can still be bought, but employees could also buy salads, fruit, etc. A disadvantage however, is that the company is located in two separate buildings and the canteen is not located in the building of the CS-MS department, so only a few employees of the CS-MS department visit the canteen. The majority of the employees takes his or her own lunch to work. Therefore, the change in food supply is less effective for the employees of CS-MS.

Regarding smoking, no concrete actions are taken, like smoke zones, information sessions etc.

The team leaders and department manager all emphasize the importance of lifestyle, but have different opinions about their influence on the lifestyle of employees and the initiatives that are created. Two state that they only have limited influence on lifestyle and that it is primary the own responsibility of an employee. Only in personal conversations or when a certain lifestyle creates a danger for the work performance of an employee, then the

topic is addressed. One person tries actively to encourage a certain lifestyle, especially regarding physical activity. The most important reason for this is personal interest for sports, but he also tries to set up small groups for a triathlon, ice skating, and arranging sportswear sponsored by the organization. Regarding dietary habits one of the interviewees stated: *'I do not talk about dietary habits actually. I do not interfere there, maybe because that is a step too far in my opinion.'* He does however, approach people when they gain much weight or ask employees about their smoking behavior.

In the interviews, lifestyle was also associated with (sustainable) employability, but only some aspects of a healthy lifestyle. The HR manager stated that to improve the sustainable employability, nutrition and sport are important topics. Further, the life style characteristic 'relaxion' are mentioned by most of the interviewees. In the survey, relaxion during work received on average a considerable lower score than for example relaxion during private life and other concepts like autonomy and job variety. The interviewees mentioned the importance of 'relaxion moments' however: (about the 24x7 service) *'Some employees think that they should be available at night or should have their phone standby for questions from abroad. This is not really desired in the context of sustainable employability'*. And: *'Sometimes I say to people: 'Sit down for half an hour, with your feet on the desk and take your time to think.'* Then they say: *'I cannot do that, I have too much to do.'* And then I say: *'Especially then, it is very important'*. Smoking and alcohol use were not linked to sustainable employability in the interviews.

Vision on work

The topic vision on work is about the value for intrinsic work motivators and the value for work in comparison with other important aspects of life (work centrality); family, free time and society. HR pays attention to all of these aspects. The HR manager stated that they always mention in for example job interviews that employees must assure that there is a good balance between their work and private life. Regarding family, the company arranges events for employees and their family, and sometimes also includes a present for the partner in the annual Christmas gift. Further, attentions are send by weddings, birth etc., and a 'love and sorrow' protocol exists. Regarding free time, several sport activities are supported, as described under lifestyle.

Also, the value 'society' is important for the company, but this is more invisible and on request. For example, about sponsorship the HR manager said: *'Sponsorship is not meant to show how good we are, but we do it because we think that it is important to do'*. Further, the company also collaborates with the municipality and colleges and universities.

The team leaders and department manager mentioned in the interviews that they mainly focus on the balance between work and private life and that they give employees the freedom to decide how they want to fill in their private life. Different interviewees try to emphasize that work is not the only important value, for example: *'For me, a balance between work and private is very important and I try to show this to my employees. I am not a person who works 60 or 80 hours per week. I am not getting paid for that, but I also have other things in life that are important to me. That is also visible, I also show that. That is an important value that I try to manage. I have an employee, who unnoticed could work for four or five evenings per week at home. Wife pregnant, just moved, etc. Sometimes he says: 'I finish this job in the evening'. Then I say: 'No you do not take this job, we put it somewhere else'. On the one hand, people sometimes want to take a job or have a reason to do it, but when I have the feeling that someone is doing too much, then I intervene.'*

In the interviews, a higher value for work or a higher value for intrinsic motivators was not mentioned in relation with sustainable employability.

Work Characteristics

Autonomy

All the interviewees emphasize the importance that the company puts on the autonomy of the employee. Autonomy is part of the work culture of the company HR mainly deals with the broad issues concerning this concept, the people that are busy with the effective control of employees decide how much autonomy employees have. The HR manager said about this: *'This is how HR is positioned in this firm. HR has an supporting function. So, this is where our responsibility and our influence ends. So, we have more an informal influence, than a formal influence'*.

The team leaders and the department manager all mention that the firm has certain 'game rules' to guarantee the existence of the company, but besides these rules, the employee has a lot of autonomy in his/her work. An example of one of these rules is entering work hours, which is necessary for billing the right amount of money to the customers of the organization.

The team leaders all state that they give employees the freedom to decide how they want to execute their work: *'Actually, within the processes of the organization they have the freedom to execute the work. I am not going to sit beside them and say, 'this call is for you and you have to do it this way' and another: 'I often step by to ask employees 'how are you?', but I do not tell them 'now you have to do this', I do not interfere there. So, employees have a lot of freedom. I have always worked this way. It is also why I like to direct a group of professionals, people with a good level who are good in their profession, so they can work on their own. That is what motivates this people, what makes them happy. They are not happy with someone who tells them exactly where they have to go left or right'.*

Recently, the department has acquired an ISO certificate, which has led to a new set of rules and procedures in order to keep this certificate. These new rules and procedures could lead to less autonomy of the employee and less employability. The HR manager mentioned that to improve sustainable employability it is important to: *'We should not go too far in organizing and putting things in a process. The job has to stay nice for employees, so not everything can be optimized.'*

Job variety

Also regarding the topic 'job variety', HR mentioned that they have mainly an indirect influence. When coaching leaders, and in contact with leaders, they try to make clear that it is important that employees have job variety, but the direct influence is in the hands of the leaders and the employees themselves.

All leaders state that the work in their department is already very varied in comparison with other jobs/in other companies. The work is varied because of different customers, products, projects, and different roles that employees could take on. In some teams however, it occurs that employees outgrow their role, for example in the support and administration team that is part of the Technical Services Team: *'There are employees who say: 'I want something more. I have had enough of this'. The only possibility is... You cannot change something in the work, but I can involve employees in the projects of my other team. There are two people in the support and administration team who have that ambition. Now I look if I can involve them in other activities'.*

Multiple interviewees indicate that it is possible for employees to do different kinds of tasks, or change something in their tasks, but that the employee has to take the initiative to discuss this with their team leader: *'Employees get a lot of space to show initiative. We are not directing this or approach employees with the message: 'From now on, you have to do different things'. So, when an employee is passive and you ask him: 'Does your employer provide a lot of variation in the work? Then he would say no. But when an employee is very innovative and creative, then he would say: 'Yes, because I have a lot of freedom'.*

Job variety was also linked to sustainable employability in the interviews. One of the interviewees stated that variation in work could also be a danger for sustainable employability. In the knowledge-intensive sector there are many rapid developments, which has created an enormous growth in the number of software packages that organizations could adopt. It is not possible for an employee to specialize in all different forms. The interviewee stated: *'I think that there is so much variation in the work, that it becomes a risk, because too much is asked of employees. I think that it is maybe better to arrange less variation, focus on finishing things and try to deepen your knowledge of a certain subject. Work in consultancy is actually sport at the highest level, because every day you have to take a step further, because there are technical developments, customers know more, software has more possibilities and you have to do it faster.'* If employees want to stay employable they should decide themselves how much variation is possible. This is important for older employees, who find it difficult to keep up with all the developments and have to choose specific topics to work on, but this is also important for employees who just started at the company. They should not be overloaded with too much information and more and more software, they also have to specialize in something. One of the interviewees said about this: *'In the beginning, when someone enters the company, we discuss what are your interest areas, what can you do, what is your own image*

and what do we think that is good to specialize in? When someone gets older, then we have to facilitate a situation and condition in which employees with lessening flexibility and other interests, can keep doing the work'.

Work pace

Work pace is an important topic in the company. The company is growing fast and many vacancies exist. This has created a high work load on the employees: *'I think that we have had a difficult time in our team because of the high work load. People were not feeling well and stressed, and it created a situation in which they were very focused on what other employees were doing and especially not doing.'*

Concerning the topic work pace, HR tries to keep an eye on the employees through informal conversations with employees. There are no concrete policies to restrict the work pace, for example a maximum number of work hours. The main reason for this is the vision of the company; they want to have as less rules, procedures and policies as possible and give responsibility to the leaders (of the teams, department or business unit) of the employees.

The team leaders and the department manager state that there are several ways to make sure that the work pace is not too high for employees. One of the interviewees states that one option (where they do not have control over) is to 'close the tap with new customers', which is not really possible because salespeople keep selling, or taking care of more capacity (hiring new people). Another option that is emphasized in multiple interviews is making a smart planning and efficient working. One of the interviewees mentioned: *'I try to steer on working smarter and more efficient. I actually steer never or very seldom on working harder'*. Despite this, it is the own responsibility of the employees to indicate when the work pace is too high and also a lot of effort is expected of employees: *'Employees have a contract of 8 hours per day, but when it takes more than 8 hours per day, we expect you to do that occasionally without complaining. The job conditions are really above average here, salary, bonus, car, and things like that. We are getting paid very well. This means an extra effort than just that 8 hours per day. This should be possible without asking. When more than 8 hours working a day is getting usual, then it is wrong. Then I try to change it.'*

In none of the interviews a link was found between a high work pace and sustainable employability. Some interviewees did indicate however, that a high work pace could lead to feelings of stress and reduced welfare, like mentioned in the first quote of this topic.

Job conditions

From the survey it became clear that employees are less satisfied with some job conditions. The job conditions are prepared by HR. The HR manager stated that three years ago the fourth version of the document with job conditions was ready. Feedback about these job conditions was retained from employees and several improvement points were implemented, for example the pension scheme was improved. About the current job conditions, he states: *'I think that there is satisfaction with the job conditions, but they are not distinctive in comparison with other companies. We distinguish ourselves in other elements, but not in job conditions. The primary job conditions are very good. So, employees do not have to complain about salary, bonuses, etc. That is also typical for the IT-sector. We fall short in secondary job conditions, for sure. On the other hand, I think that we excel in our tertiary job conditions, in particular staffing outings, personal attentions, etc.'*

The team leaders and department manager all mentioned that they have influence on the job conditions of their employees, for example on salary, bonuses, working from home, and how to fill in vacancies: *'There are certain frameworks, but within these frameworks we can influence. And this influence is quite high'*.

Regarding working from home, the interviewees state that they are quite flexible. When there is enough occupation, employees are allowed to work from home. This also the case for flexible working hours/working part-time. When an employee for personal reasons wants to change his or her free day from Wednesday to Friday for example, this is possible when there is enough occupation.

Further, bonuses are set with the team leaders on the basis of performance and targets.

Regarding vacancies, candidates for vacancies are also being judged on suitability by the team leaders. This are a few examples of job conditions that the department manager and the team leaders can influence.

All interviewees mentioned that several job conditions are related with sustainable employability. In particular education possibilities are mentioned as important: *'(Regarding improving employability) I think that we have to direct more active and visible on the development of people. Educating employees, facilitating training, and making sure that this is connected with the work that people do. At the moment, we mainly leave the initiative at the employee. When an employee starts the conversation, then we say: 'good idea'. And sometimes we have a need, but that is always reactive, then we say: 'it is useful if you follow this training, because we need that'. So, I think that as organization, we have to be more active and visible regarding this topic. We find this topic important and we want to support it, but often we are too busy with the daily concerns'*. Educating employees is important to be able to keep up with the rapid developments in the IT-sector. All employees have a POP-document (personal development plan) which contains the capabilities that an employee possesses and what he or she wants to attain in the future. One of the interviewees stated: *'A POP-document contains things that direct and appoints actions regarding employability.*

Further, next to education possibilities, also promotion- and career opportunities is a job condition that was related to sustainable employability. One of the interviewees mentioned that it is important that all employees keep developing themselves to sustain employable: *I have the feeling that employees do not always feel the need to keep developing themselves and I think that this is very important in the context of sustainable employability.* Finally, the interviewees state that in general, the improvement of secondary job conditions and more staffing outings could lead to increased sustainable employability.

Work relations

The last work characteristic that is investigated in this study are the work relations of employees. A distinction was made between the work relations with the team leader, so the supervisor support that an employee receives, and the total work relations, which includes the relation with the team leader and the work relations with colleagues. The HR department mainly has an indirect influence on this topic, but has also set guidelines and offers training for team leaders to ensure good supervisor support. In the guidelines, team leaders are advised to have at least four times per year a formal individual conversation with each employee. HR collects the forms that are filled in during these conversations. This way they know if the conversations took place, but they do not check if the team leaders really have four conversations per year: *"We sometimes state 'do not live in a system world, but in a living environment'. What does that mean? A junior employee can have the need to talk with his/her team leader once in a week, so anticipate on the needs of the employees. But we think that minimal four times a year contact, that should be possible. And we are not the kind of organization that checks this or that team leaders have to justify if they have conducted the conversations'*.

Next to guidelines, HR has started a training program to help leaders with learning how they could provide feedback, coach, and could meet the needs of the employees.

Regarding work relations with colleagues, HR states that the culture of the company has always been focused on collaboration. This is also a point of attention because the company is very focused on financial numbers and billing hours, which complicates collaboration between different business entities, because those hours are often not billable.

The team leaders and department manager state that their support consists of helping people, tuning of execution of work, contributing to the welfare of employees, facilitating, developing employees, making sure that employees have challenging work, protecting employees, etc. They all mention the own responsibility of employees, so team leaders are able to assist on the broad lines, but do not take the work over from employees. The conversations that are conducted with the employees are both formal and informal. One of the interviewees stated that formal conversations are conducted three times per year: a conversation to set targets for the bonus, a conversation when the bonus is paid and the personal development conversations.

Next to the individual conversations with employees, also meetings for the different teams and for the whole department are organized on a regular basis. The frequency of these meetings differs per team, dependent on for example the amount of collaboration that is required for the job and how much an employee works 'on side', at the customer. For example, the consultancy team have a meeting four times per year because they work often

external and individually, while one team of technical services has a weekly meeting. These meetings are not only important for the relationship between the leader and the employees, but also for the work relations between colleagues. One interviewee mentioned about the team meetings: *'A meeting is important for the relationship between the people and me. But the relations between the employees are at least as important. Thus, a team meeting is next to the themes, subjects that we talk about, also a moment to meet each other, a joke and to strengthen the ties between employees.'* Further the team leaders and the department manager also mentioned the importance of the culture of collaboration, but in particular regarding their own team.

In several interviews, a link was found between good work relations/ supervisor support and sustainable employability. For example, team leaders could show supervisor support by protecting employees from too much workload or pushing them when they do not make a valuable contribution to improve their employability. One of the interviewees told: *'In some cases you have to protect your employees, I think that is very important. Sometimes I see that when people do not take care of themselves, that they keep going, going, and going, then that at a certain moment this could be at the cost of their health. I know examples of that. So, by protecting them, we could guarantee the employability on the short term. Other employees could be given freedom or have to be pushed a little too keep going, that is also possible.* Other examples of supervisor support that could help employees stay employable that were found in the interviewees were: making time for employees, personal attention, facilitating and being present for employees. In particular making time for employees is something which could be improved: *'Something that we always could improve is making more time for people. We really have put that into systems: the conversations about the bonus, performance appraisal, the formal conversations. Also, the informal conversations contribute to having a connection with employees.'*

Next to supervisor support, also the work relations with colleagues were mentioned as important for sustainable employability of employees.

Summary personal- and work characteristics

In the qualitative part of this study the personal characteristics: health and lifestyle were found positively related with sustainable employability. Regarding the work characteristics: job variety, job conditions and work relations were found to be related with sustainable employability. Overall, most interviewees stated that they had direct influence on the work characteristics while their influence on the personal characteristics was more indirectly. Regarding personal characteristics, the qualitative results show that in particular attention should be devoted to relaxation moments, nutrition, sport and health in general, to increase the sustainable employability of employees. It is important that the organization shows that the employability is crucial and therefore the organization has to devote more active and visible attention to sport- and health programs.

Regarding work characteristics, the structure of the organization could be an obstructing factor for improving the work characteristics to increase the sustainable employability. The department is very tied to procedures, organizing and putting things in a process. This could lead however to reduced time for informal conversations between the team leader and the employees, less autonomy of the employee, and less time for education-, promotion-, and career opportunities, which could all be important for increasing the sustainable employability. Other things that were mentioned to improve the work characteristics were: employees have to specialize in a certain direction instead of trying to keep up with all developments, the company has to show more active and visible that the education of employees is important (instead of leaving the initiative at the employee), and employees have to be protected from too much workload by their team leader.

Moderator: Affective commitment

Several interviewees mentioned the importance of commitment (to the organization or to the department) in relation with the investigated independent variables or sustainable employability. For example, commitment was mentioned in relation with the job conditions. One of the interviewees stated that favorable job conditions could create commitment and binding to the organization. Examples of job conditions that could create commitment

are for example full continued payment by sickness the first half year, so that employees do not feel pressure to return too early after sickness, and special leave, for example after decease.

In one interview, commitment was also mentioned in relation with sustainable employability. The interviewee stated that to improve sustainable employability, the most important aspect was to focus on the commitment and attachment with the company, the work culture and the team.

Despite this, the interviews did not indicate that commitment could strengthen certain work characteristics to get a higher level of sustainable employability

7. Discussion & Conclusion

This chapter discusses the results that were found in this study. First, the theoretical implications of this study will be explained by interpreting the results of the quantitative and qualitative data and connecting them with the hypotheses that were formulated. In section 7.2 the practical implications were explained, which means the value of this research for the company under study. Further, in section 7.3 the limitations of this study are discussed and suggestions for further research are given. Section 7.4 ends with a conclusion of the study.

7.1 Theoretical Implications

The following research question was set for this study: *To what extent do personal- and work characteristics influence the sustainable employability of professional employees in the knowledge-intensive sector?*

SE of employees is important because it can help organizations and employees to deal with the fast-changing developments like the ageing workforce, informatization, globalization and the emergence of different employment options (Fugate et al., 2004). Earlier research has shown that SE can be influenced through personal-, family-, work-, organization-, and macro-economic characteristics (Brouwer et al., 2012). In this study, several personal and work characteristics and their effects on SE were examined. Health, lifestyle and general vision on work were related to the personal characteristics, and autonomy, job variety, work pace, job conditions, supervisor support and total work relations are investigated in the work characteristics category. With the use of both quantitative research (a questionnaire) and qualitative research (interviews) the effects of these personal- and work characteristics on sustainable employability were investigated. Table 11 gives an overview of the hypotheses in this study and whether they are rejected or (partly) accepted, based on both the quantitative- and the qualitative results. The table shows that based on the quantitative results, all hypotheses should be rejected. This could be large due to the many variables that were measured in questionnaire and the small sample size (N=46). Despite this, the quantitative results still yield valuable information concerning the personal- and work characteristics and sustainable employability. Below the table, an explanation is given about the founded relationships (in the quantitative and qualitative data).

Hypothesis	Based on the quantitative results	Based on the qualitative results	Overall
1 (health)	Rejected	Accepted	Partly accepted
2 (lifestyle)	Rejected	Partly accepted	Partly accepted
3a (work centrality)	Rejected	Rejected	Rejected
3b (intrinsic motivators)	Rejected	Rejected	Rejected
4 (autonomy)	Rejected	Rejected	Rejected
5 (job variety)	Rejected	Rejected	Rejected
6 (work pace)	Rejected	Rejected	Rejected
7 (job conditions)	Rejected	Accepted	Partly accepted
8 (supervisor support)	Rejected	Accepted	Partly accepted
9 (total work relations)	Rejected	Accepted	Partly accepted
10 (affective commitment)	Rejected	Rejected	Rejected

Health

Hypothesis 1 states that health is positively related to sustainable employability. A positive relationship was expected because earlier studies showed that health was positively related with indirect measures of SE like productivity and work capacity (Burdorf et al., 2008; De Vries et al., 2005; Van der Leije, 2009). A possible explanation for this effect is that employees with health problems may be less able to do their jobs, because of experienced pain etc. (Kim & Feldman, 2000). Despite this, the quantitative results did not show a significant effect between health and total SE.

The qualitative results on the other hand, show that to improve sustainable employability, attention should be devoted to health, for example by setting up sport programs and health programs. Therefore, the qualitative results did show a positive effect of health on SE.

Based on both the quantitative and the qualitative results, it is concluded that health has a positive effect on sustainable employability, because of a positive effect in the qualitative results. Therefore, hypothesis 1 could partly be accepted.

Despite the fact that no significant relationship was found in the questionnaire between health and total SE, the extra analyses showed that the relationship between health and external SE was almost significant (p -value $< .10$). The relationship was positive ($\beta = .323$) which indicates that health is positively related with external sustainable employability. This means that the health of an employee is probably of greater importance for the employability of the employee on the labor market than at the current employer. Also, the correlation matrix showed a positive (and significant) relationship between health and external SE (.312).

Lifestyle

Hypothesis 2 was about the effect of lifestyle on sustainable employability. A positive effect was expected because a healthy lifestyle (no smoking, low alcohol consumption, healthy dietary habits, enough physical activity and enough relaxation moments) was positively related with for example vitality (Van Scheppingen et al., 2015), employment rate, work performance and continue working after 65 years (Brouwer et al., 2012).

The quantitative results showed no effect of lifestyle on SE.

The results of the interviews did show a positive effect of lifestyle on SE, but only certain parts of lifestyle were connected to SE. In particular relaxation moments was linked positively with sustainable employability, and to a lesser extent also healthy dietary habits and sports. Therefore, hypothesis 2 was partly accepted.

That only parts of lifestyle were connected to SE in the interviews, could be a possible explanation why the expected positive effects of lifestyle were not found in the quantitative results. Perhaps, only some parts of lifestyle are important for SE and not the complete lifestyle of employees.

Another possible explanation, from earlier research that did not find positive effects of lifestyle on (parts of) the SE concept, was that lifestyle probably has an indirect effect on sustainable employability, through health (Brouwer et al., 2012). The correlation matrix did indeed show a significant positive relationship between health and lifestyle (.314).

Vision on work

In hypotheses 3a and b, a positive effect between vision on work and sustainable employability was formulated. Hypothesis 3a stated that: *Work centrality (in comparison with value for society, family and free time) is positively related to sustainable employability*. Hypothesis 3b stated that: *Intrinsic motivators are positively related to sustainable employability*. In the scientific literature, it was found that a negative attitude towards work could lead to early retirement (Brouwer et al., 2012), while motivation to work could lead to better employability of employees (De Lange & Van der Heijden, 2016).

A small positive but insignificant effect was found between value for work and sustainable employability and no relationship was found between intrinsic motivators and SE, in the quantitative results.

The results of the interviews show that next to value for work, also value for family and private life is important for employees to keep functioning. This could be a reason that no relationship was found between work centrality and SE. Further, the qualitative results also did not show a positive effect between a higher value for work or a

higher value for intrinsic motivators and sustainable employability. Therefore, hypothesis 3a and 3b were rejected.

Despite this, the descriptives of the questionnaire did show that on average 'Work' was given a lower score than 'Free time' and 'Family' which indicates that employees value free time and family more than work and that 'work' scored higher than the value 'Society'. Further the extra analyses of the questionnaire did show a positive ($\beta=.323$) and almost significant ($p\text{-value} < .10$) relationship between value for work and internal sustainable employability.

Autonomy

Hypothesis 4 stated that autonomy is positively related with sustainable employability. A positive effect was expected because the literature showed that when employees had low autonomy, the risk on early retirement was increased (Lund & Villadsen, 2005). Further low autonomy could lead to short-term sick leaves and cardiovascular diseases, while high autonomy could positively influence employment rate and working after 65 years (Brouwer et al., 2012; De Lange & Van der Heijden, 2016).

The quantitative results, did not show an effect of autonomy on SE however.

Despite this, both the quantitative and qualitative data showed that employees have a lot of autonomy in their work. In the interviews, it was mentioned that to improve sustainable employability 'the company should not go too far in organizing and putting things in a process'. Organizing and putting things in a process are not automatically at the expense of the autonomy however. Therefore, also hypothesis 4 was rejected.

Job variety

Hypothesis 5 was about the job variety of the employee. It was hypothesized that job variety was positively related to sustainable employability, because earlier studies showed that when employees had more flexibility and challenge in performing their tasks, this was positively related to indirect measures of SE (for example: Kanfer & Ackerman, 2004; Meijer & Mevissen, 2005; Wiegmans, 2005).

The analyses of the questionnaire showed a small positive but insignificant effect of job variety on SE.

The qualitative results are mixed. Different interviewees emphasize the importance of variation in work, so that employees do not become bored. At the same time, it is also mentioned that there is so much variation in the work that it becomes a risk for the sustainable employability of employees. There are so many developments in the knowledge-intensive sector, new customers and new software available, that an employee also has to specialize in something to stay employable.

Therefore, in general, no positive relationship was found between job variety and sustainable employability, and hypothesis 5 was rejected.

Work pace

The next work characteristics that was investigated in this study was work pace. Hypothesis 6 stated that a high work pace was negatively related to sustainable employability. Based on earlier studies this relationship was expected. For example, Allen et al. (2008) found in their study that overtime had a negative relationship with parts of the sustainable employability concept outcome measures like health, productivity and safety.

Despite this, no effect of work pace on SE was found in the quantitative study.

Also in the qualitative study no effect was found. An explanation for this mentioned by an interviewee was that some job conditions are above average in the company, for example salary. Because the job conditions are above average, employees know that more effort is expected than just working 8 hours per day. If employees feel they are rewarded well, working harder is maybe not such a burden. Therefore, based on both the quantitative and qualitative results, hypothesis 6 was rejected.

Job conditions

Hypothesis 7 stated that favorable job conditions are positively related to sustainable employability. The literature showed that certain favorable job conditions could have a positive effect on part of the SE concept. For example,

the job conditions: higher pension, more salary and less working hours, were necessary for employees to keep working after their pension (Cuelenaere & Chotkowski, 2008). Further, Meijer & Mevissen (2005) mentioned that for older employees, a day off per week was important to maintain their motivation and health. Other job conditions that were linked to SE were flexible working hours, working from home, training and education opportunities, performance appraisals and contract type. Therefore, a positive effect was expected of total favorable job conditions on SE.

A moderate positive, but not significant effect of job conditions, was found in the quantitative results. Notable was however, that when comparing the results of internal SE and external SE, that the effect of job conditions on internal employability was very strong, positive ($\beta = .607$), and significant ($<.01$), while there was no effect on external employability. This indicates that job conditions are probably more important for the employability of employees at the current employer and explains why no relationship was found between job conditions and total SE (because this also includes external SE).

The qualitative results also showed a positive effect of job conditions on SE. In particular the positive effects of education possibilities and promotion- and career opportunities were mentioned in the interviews. Therefore, were job conditions are positively related to SE in the qualitative part of this study, and the hypothesis could partly be accepted.

Work relations

Hypotheses 8 and 9 were about the work relations that employees have with their supervisor and with their colleagues. Hypothesis 8 stated that supervisor support was positively related to sustainable employability, and hypothesis 9 stated that the total work relations (both with the supervisor and with colleagues) were positively related to SE. A positive effect was expected because for example Smulders et al. (2001), stated that the behavior of the supervisor (team leader) could influence the absenteeism of employees. Other studies found that the relation with the supervisor could influence the employability of older employees (De Vries et al., 2005), and that leadership style could influence health and vitality (Meijer & Mevissen, 2005; Van Scheppingen et al., 2015). Also, positive effects were found between the workrelations with colleagues and parts of sustainable employability. For example, investing in social networks and work relations is associated with higher employability (De Lange & Van der Heijden, 2016). Again, the quantitative research showed no effect of work relations with the supervisor and total work relations on SE.

However, in the qualitative part of this research results were found for both a positive effect of supervisor support on SE and of total work relations on SE. In particular, supervisor support was mentioned, for example protecting employees against themselves is important to sustain their employability. Next to this, also devoting time to employees, facilitating and being present are important factors. Therefore, both hypothesis 8 and 9 could partly be accepted.

Affective commitment

Finally, hypothesis 10 predicted a moderating effect of affective commitment on the relationship between work characteristics and sustainable employability. This was expected because employees with enriched job (jobs that score high on for example: autonomy and job variety) are more likely to yield a high level of affective commitment, and that employees are therefore more willing to 'go an extra mile' for the company to create a valuable contribution. This way, affective commitment could strengthen the effect between work characteristics and sustainable employability. Despite this, the quantitative results showed no moderation effect of affective commitment. The qualitative results showed that affective commitment was mentioned in relation to job conditions and sustainable employability, but was not thought to really 'strengthen' the relationship between the work characteristics and the dependent variable. Therefore, hypothesis 10 was rejected.

Personal- and work characteristics

Next to the analyses for evaluating the hypotheses, also the effect of the total personal- and work characteristics on sustainable employability were tested in the quantitative results (Model 3 in table 8,9 and 10). The model for

total SE and for internal SE were significant, which indicates that personal- and work characteristics can be used to explain the sustainable employability of employees. The model was not very strong however ($\beta = .286$) and ($\beta = .331$). In these models, only work characteristics was significantly positively related to SE, which means that a higher score on work characteristics could lead to higher score of employees on their total and internal sustainable employability. The founded effects showed a moderate positive relationship of work characteristics ($\beta = .341$) on total SE and of $\beta = .439$ on internal SE. Improvement of the work characteristics is therefore expected to have a greater influence on the internal employability of employees.

Age and tenure

the quantitative results showed that age (and to a lesser extent also tenure) that were used in the analyses as control variables, were also significantly related to sustainable employability. In the model of total SE, age was significantly negatively related to SE, which means that older employees score lower on SE than younger employees. This was also the case for external SE.

For internal SE, the p-value was slightly above the significant value (p-value was $< .10$ instead of $< .05$). This indicates that age is less important for the internal employability of employees in comparison with their external and total employability.

Further, the quantitative results also showed that tenure was almost significantly (p-value $< .10$) related to internal and total SE (when only including the control variables). Therefore, it is possible that employees that work at a company for many years are less sustainable employable than employees who have been working at the company for a shorter time period.

7.2 Practical Implications

This research tested the effects of several personal- and work characteristics on sustainable employability. When an organization knows which factors are related (and in what way) to sustainable employability this could be helpful for increasing the sustainable employability of employees. The results of the study could be used by the company under study to build up policies about sustainable employability.

Age

From the first result it became clear that (although not hypothesized) age had a strong significantly negative relationship with sustainable employability. This means that older employees were found to be less sustainable employable than younger employees. The average score of sustainable employability in the different age categories shows that employees from the age category '36-45 years' and of the older age categories score lower on SE than the previous category/categories. The drop of SE was the highest in the oldest age category of employees from 56-65 years.

This result is useful because it suggests that it could be valuable for the company to devote attention to older employees and help them to stay employable, so that they are (still) able to make a valuable contribution to the company. Devoting attention to older employees is possible in several ways.

De Lange and Van der Heijden (2016) mentioned that the literature distinguishes 4 categories of HR-policies for older employees:

- Policies that are aimed at helping employees to achieve higher levels of performance (development). Examples of instruments that could be used are: training, promotion, career planning, and continuous development.
- Policies that are aimed at helping employees to retain their current level of functioning (conservation). Examples of instruments that could be used are: job security, flexible workhours, performance appraisals, ergonomic adjustments, performance rewards, flexible job conditions and a workweek of 4x9 hours.
- Policies that are aimed at helping people to function on a lower level, when conservation is no longer possible (spare). Examples are: extra leave, sabbatical pre-pension, demotion, exemption from working overtime, working part-time or part-time pension.
- Policies that are aimed at utilizing existing experience and knowledge of (older) employees. Tasks that an employee can no longer perform are removed from the function, and they are replaced by tasks that

utilize the existing knowledge and skills of employees. Examples are: horizontal job changes, task enrichment and participation in the decision-making.

For older employees, policies that are aimed at development should become of less value, while policies that are aimed at conservation, sparing employees and utilizing existing knowledge and skills, will become more valuable. Therefore, it is recommended to the company, to focus on these 3 categories of HR policies to increase the sustainable employability of employees.

A note of attention to devoting attention to older employees, is that the organization should be careful when setting up special policies for older employees, because 'elderly policies' could also lead to feelings of 'being separate from other employees', which could decrease the effectiveness of the policies.

Therefore, another solution could be to make small adjustments and to be aware of the different needs of employees of different ages and in different life stages. For example, team leaders could devote more attention in performance appraisals of older employees to subjects like: 'are employees still able to function on their current level, do they need adjustments in their work, etc.'

Further, a flexible budget for secondary job conditions could provide employees with the opportunity to 'fit' the job conditions to their age/life stage (this is further explained in the section 'job conditions').

Several organizations in Netherlands, also made policies concerning age and sustainable employability.

For example, Achmea and Curtec made life stage policies. Achmea distinguishes the following phases: the starting phase (where do I want to go), the ambition phase (I want to go there), the combination phase (seeking for balance), the expertise phase (give meaning), and the landings phase (gradual withdrawal) (De Lange & Van der Heijden, 2016). These life stage help to devote attention to the different needs of these groups (different policies are made for these groups etc.).

Further, the ING bank offers a project for development to employees older than 50 years, through individual coaching and group meetings. All employees get an individual plan of action, so that older employees are still able to execute their tasks in the future (Werkgevers duurzame inzetbaarheid, 2017).

Job conditions

The second result that was found, was the relation between job conditions and sustainable employability. The results showed in particular a strong positive (significant) effect between job conditions and internal sustainable employability. Since job conditions also received a lower score from employees in relation to many other concepts in the questionnaire, it could be worth trying to increase the satisfaction with the job conditions, because it could also have a positive effect on the SE of employees.

Extra analyses of the quantitative data showed that in particular the job conditions: compiling of job conditions, leave- and vacation possibilities, and promotion- and career opportunities were significantly (and positively) related to SE. In the qualitative data, training- and education possibilities was mentioned in particular. It is recommended to try to increase the satisfaction with these four job conditions, because it could lead to increased sustainable employability of employees and because these are also job conditions that had on average a lower score than other job conditions.

A possible solution to increase the satisfaction with these job conditions is a flexible budget for secondary job conditions. For example, the organization 'Alliander' has used this solution (De Lange & Van der Heijden, 2016). A personal budget for every employee, allows employees to adapt their secondary job conditions to their current needs. This has two main advantages. First, this can create a higher satisfaction for the job condition 'compiling of job conditions', which could lead to higher SE of employees. Further it also contributes to policies for employees in different life stages, because it gives employees the opportunity to fit their job conditions with their life stage. Other solutions that companies have adapted regarding job conditions and SE, are stimulating employees in their career and development to increase their employability (Curtec), and setting up a mobility center for questions about the possibilities to switch jobs, to promote internal flow through the company (Alliander).

Health

Next to age and job conditions, the hypothesis about health could also be partly accepted. The quantitative results showed a greater positive effect on external SE than on internal SE.

An example to improve the health of employees could be to execute a PMO (Preventief Medisch Onderzoek) among employees, so that employees have an indication of their health and that when necessary subsequent steps to improve their health could be taken.

Another possibility is providing a good work environment. The company already started this by providing desks for standing instead of sitting, good office chairs for employees with back issues, etc. The interviews showed however, that this was mainly done on request. Offering these options more pro-active, could prevent health issues.

Next to this, also offering compensation for sporting activities could be used to increase the health of employees. For example, the company Aviko, offers employees: help with quitting smoking (costs for the employer), a dietician and a physiotherapist (Werkgevers, duurzame inzetbaarheid, 2017). Other possibilities are a contribution to a membership of a sporting club or a contribution to sporting clothes.

Work relations

Finally, work relations (both with the supervisor and with colleagues) were (partly) found to have a positive effect on sustainable employability. In particular supervisor support was mentioned in the interviews as necessary for improving the employability of employees. Supervisor support could be important for SE, but supervisors are also able to influence the health of employees through their own behavior (Eriksson, 2011; Eriksson, Axelsson, & Axelsson, 2011). Leaders could show supervisor support through, for example, caring for the well-being of employees, ensuring that people work together, consulting employees before making decisions, and correcting employees when needed (Smulders et al., 2001). Other possibilities to increase the supervisor support are coaching of supervisors (for example because it could show supervisors which aspect of supervisor support requires more attention) and devoting more time to an employee.

An example of a company that also devotes attention to work relations to increase the SE of employees is the ING bank. Within this company, they focus on how coaching talks are conducted and on what the employee and the team leader can learn from these talks.

7.3 Limitations and Future Research

Next to the strengths of this study that were mentioned in the introduction, this study also has some limitations and suggestions for further research.

First, since this study was conducted in one department of one company, therefore the sample size was quite small. Additional case studies are needed to know if these factors are indeed important for increasing the sustainable employability of employees in the knowledge-intensive sector.

Secondly, this study could only test a few personal- and work characteristics that were thought to be relevant in this company. Further studies could test other personal- and work characteristics on the whole sustainable employability concept.

Further, data about sustainable employability and the independent variables was collected at a single point in time. In the future, studies with a longitudinal design are necessary and valuable to see if sustainable employability really can be increased by increasing these personal- and work characteristics, and to track important changes in these concepts over time.

In this study, employees were asked to fill in a questionnaire about their own health, work pace, sustainable employability etc., and leaders were asked about their opinions on the independent and dependent variable(s). This could create issues of social desirability, where respondents answer questions in the way they think will be favored by the researcher. The social desirability is thought to be less in this study, then when the research was executed by the organization itself, because the researcher was independent in the company and the data from the questionnaire was collected anonymously. But it is still possible that the results show some effects of social

desirability. More research into sustainable employability is therefore needed, so that results can be compared and results due to social desirability can be excluded.

The last limitation that is discussed here, is the use of the 'health' and 'lifestyle' variables. The correlation matrix and literature showed that health and lifestyle are correlated with each other. Because lifestyle and health of employees are different concepts, their impact on SE was still measured. But because of the correlation between the two variables, it could be that the results did not reveal the 'true relation' with sustainable employability. Further, many variables were measured in the questionnaire. To ensure that employees did fill in the whole questionnaire, for the variable 'health' only item was used. One item was used instead of other scales that often include many items like the scale of Kempen (2012) with 20 items or the scale of the TAS (2001) that included 31 items. These scales often also include the mental health, next to the physical health. Future studies could therefore measure more aspects of health and look how to cope with the correlation between health and lifestyle and their effect on sustainable employability.

7.4 Conclusion

Sustainable employability could be used by employees and organizations to deal with the fast-changing work environment. To understand which personal- and work characteristics are related to the sustainable employability of employees in the knowledge-intensive sector (and therefore also in the company under study), the following research question was formulated:

To what extent do personal- and work characteristics influence the sustainable employability of professional employees in the knowledge-intensive sector?

Based on the literature several personal- and work characteristics were examined that were expected to influence sustainable employability. The results of both a questionnaire for all employees, and interviews with the leaders of the department and the HR manager, showed that several characteristics were related to sustainable employability, and that increasing these characteristics could increase the sustainable employability of employees.

The quantitative study showed that age was significantly related to sustainable employability. Older employees in the department were less sustainable employable than younger employees. When the organization makes specific age policies and takes action for older employees, their sustainable employability could be improved, which could increase the total sustainable employability of the department. Further, also work characteristics in total were positively related to sustainable employability. This indicates that when employees score higher on all work characteristics, they also score higher on sustainable employability.

Next to this, also the hypotheses regarding health, job conditions, supervisor support and total work relations were partly accepted. These personal- and work characteristics were all positively related with sustainable employability, and increasing these factors could hopefully increase the sustainable employability of employees in the knowledge-intensive sector.

This research hopefully contributed to the development of a policy about sustainable employability in (the department of) this company and created results which could lead to more sustainable employable employees, that could make a valuable contribution to the company. Further, this research also wanted to make a contribution to the literature about sustainable employability.

8. References

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