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MASTER THESIS

HEALTH AND SUSTAINABLE EMPLOYABILITY

An explorative study on the relationship between positive health and sustainable employability.

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STATEMENT OF AUTHENTICITY

I am aware of the regulations relating to plagiarism and certify that this project is all my own work and does not contain any unacknowledged work from any other sources.

I have acknowledged all sources used and have cited these in the references.

DISCLAIMER

This document describes work undertaken as part of a program of the study Health Sciences of the Faculty of Science and Technology of the University of Twente. All views and opinions expressed therein remain the sole responsibility of the author and do not necessarily represent those of the Faculty.

DISCLOSURE STATEMENT

During the execution of this research assignment I was employed by the company Struqtuur.

In good conscience, I declare there is no conflict of interest during the research. Although my external supervisor is also the owner of StruQtuur, I have acted independently and my activities for StruQtuur did not influence the execution of this research and the presentation of the outcomes.

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Master Thesis

University of Twente – Master Health Sciences

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This research is carried out at the request of the company StruQtuur.

STRUQTUUR
STRATEGIE | ORGANISATIE | HR

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PREFACE

After a professional career of 7 years as a geriatrics physiotherapist, I decided to resign and go study again. After my HBO education and 7 years of working life, I really felt challenged to go to the university this time. I chose the Health Sciences program at the University of Twente because I became more and more interested in the organization of care, the meaning of health and related themes for society, but I especially wanted to know if and how I could use my own experience, interests and newly acquired knowledge to bridge the gap between practice and science.

This thesis is the final part of a research project on behalf of the Master Health Sciences course at the University of Twente. During my study I came into contact with the company StruQtuur, for me this meant a first introduction to Human Resource Management and my interest was raised in the concept of sustainable employability and the relationships regarding health of employees.

This study does serves as a documentation of my research and will help me find my way in the combination of health sciences and human resource management. This study combines market, organizational and individual trends, a literature review and an explorative research to a recently developed tool in health care. Although this project took a lot of time, it was a true learning experience and I have found it challenging to combine the two worlds of Health Sciences and Human Research Management.

I would like to thank my internal supervisors Doctor Pricivel Carrera and Professor Doctor Rez Kabir and my external supervisor Doctor Ramina Reefman for being so patient with me and help me find the right direction in combining these two different worlds. Besides my supervisors I would really like to thank my partner Richard Buitenhuis, my parents Hans and Marga van 't Hag and my dear friends who stood by me every step on the way. No matter how difficult and frustrating this process could be, their support and the support of my supervisors ultimately ensured that I am now able to show this product.

Michelle van 't Hag

ABSTRACT

BACKGROUND

Health-related and demographical trends have an influence on organizations and society. This study contributes to insights on health, positive health and sustainable employability. The expectation is that a positive health model, created by Huber et al. has a relationship with or even affects sustainable employability. This positive health model is a different approach when compared with current definitions and models of health. It focuses on the presence of health and it emphasizes health-related possibilities of an individual from a holistic point of view. Sustainable employability as a term already exists for numerous years. The many definitions differ on all kinds of aspects and depend on the point of view from which it is written. Sustainable employability generally endorses the possibilities of an employee to be and remain capable to work. It is becoming increasingly important for organizations in the world of continuous changes. In recent sustainable employability research health is progressively more being described. In this research sustainable employability was approached from a health perspective. This revealed factors as sustainability, adaptability and responsibility of employees as important components of sustainable employability.

OBJECTIVE

The aim of this study was to gain more insight into the connection between health and sustainable employability. The overall research question is: *What is the relationship between health and sustainable employability and to what extent is a positive health model an addition to current insights and measurements of sustainable employability?*

METHOD

In this explorative study a literature review was conducted. Based on the theoretical findings, a conceptual model was created. In addition an empirical study was carried out to test hypotheses drawn from the literature review. A questionnaire has been compiled, based on the discussion tool associated with a positive health model and existing sustainable employability questionnaires. Respondents from seven Dutch SME companies in Overijssel were surveyed in point of the empirical research. From April 2017 to July 2017 a total of 118 employees completed the total questionnaire.

RESULTS

The literature review showed that health contributes to sustainable employability. No evidence was found on the relationship of the positive health model created by Huber et al. and sustainable employability. When both are applied as a questionnaire all positive health dimensions are positively related to sustainable employability. Regression analyses examined whether positive health and its dimensions, controlling for sociodemographic variables, predicted sustainable employability. While all six dimensions were significantly associated with sustainable employability in correlation analyses, only bodily functions, daily functioning and the spiritual dimension predicted sustainable employability in regression analyses. Additionally, no significant prediction was found by social demographic features on sustainable employability.

KEY CONCLUSIONS

Based on findings in the literature review it was expected that a positive health model contributes to sustainable employability when focusing on (creating) possibilities for current and future individual labor participation. The empirical study provided evidence of the expected relation between the positive health model and sustainable employability regarding sustainability, adaptability and responsibility. Follow-up research is needed to extensively investigate the relationships found and to produce generalizable results. In addition, the positive health questionnaire needs to be further examined and perhaps adjusted in order to subsequently be part of a sustainable employability questionnaires and sustainable employability policy.

KEYWORDS

Health; positive health; employability; sustainable employability;

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ACRONYMS

AVG	Arbeid-Verzuim-Gezondheid
	Eng; Work-Absence-Health
AWVN	Algemene Werkgeversvereniging Nederland
	Eng: General Employers Association of the Netherlands
BMI	Body Mass Index
CBS	Centraal Bureau voor de Statistiek
	Eng: Central Bureau of Statistics
DIX	Duurzame Inzetbaarheidsindex
	Eng; sustainable employability index
NIPlan	Nationaal Inzetbaarheidsplan (NIPlan)
	National Employability Plan
RIVM	Rijksinstituut voor Volksgezondheid en Milieuhygiëne
	Eng: National Institute for Public Health and Environmental Hygiene
NEA	Nationale Enquete Arbeidsomstandigheden
	Eng: National Survey on Working Conditions
OEI	Ontwikkeling en Innovatie
	Eng: Development and Innovation
PCA	Principal Component Analysis
SME	Small and Medium Sized Enterprise
SOC	Sense of Coherence
SPSS	Statistical Package for Social Sciences
STREAM	TNO Study on Transitions in Employment, Ability and Motivation
TNO	Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek
	Eng: Dutch Organization for Applied Scientific Research
UBOS	Utrechtse Burnout Schaal
	Eng: Utrecht Burnout Scale
WAI	Work Ability Index
WEA	Werkgevers Enquete Arbeid
	Eng; Employers Survey Labor
WHO	World Health Organization

CHAPTER 1 : INTRODUCTION

Health is related to participation in society and especially related to labor participation (de Boer, et al., 2013). With good health, people can participate in work, even into old age. Conversely, work is good for health (RIVM, 2014; de Boer, et al., 2013; Naidoo & Wills, 2016). Health at work and beyond is therefore a matter for employers as well as employees. In the current world of ongoing change, developments and requirements, both have an interest in understanding how health and employability are interrelated and how to influence this so that health and employability are sustainable and future-proof. This chapter describes key issues pertaining to health and sustainable employability in the workplace, which leads to the objectives, the contribution and the relevance of this study. At the end of this chapter a readers guide is presented.

1.1 HEALTH IN THE NETERLANDS

In the Netherlands health of the population is subject to different trends. Life expectancy is rising, the burden of mental illness and chronic disease is increasing and persisting unhealthy lifestyles and new unhealthy lifestyles are still common (RIVM, 2014; WHO, 2016; European Union, 2016; OECD, 2017).

These trends result in an increase of healthcare expenditures by an average of 2.0 percent per year, in total, health expenditure doubles to 174 billion euros in 2040 according to the Rijksinstituut voor Volksgezondheid en Milieuhygiëne (RIVM) (Eng. National Institute for Public Health and Environmental Hygiene) (RIVM, 2018). One third of the increase in total expenses on healthcare is due to the aging population and population growth, two-thirds of the increase can be attributed to developments in medical technology and rising prosperity (RIVM, 2018). In 2040, 54 percent of the population will have at least one chronic disease, mental disorders and cardiovascular diseases will cause the greatest burden of disease (RIVM, 2018). At the same time, less financial and personnel resources will be available to meet the increasing demands for health care (Ilmarinen, Tuomi, & Seitsamo, 2005; van der Klink, et al., 2016; RIVM, 2014).

In response to the trends mentioned above, health care policies are increasingly focused on promoting health and preventing (chronic) diseases (RIVM, 2014; Roy, Levasseur, Couturier, Lindström, & Généreux, 2015). As described, the number of chronically ill is rising, but, due to continuous developments in medical care (RIVM, 2018; Huber, et al., 2011), the life expectancy of this group has increased. In addition this group does not necessarily feel unhealthy (RIVM, 2014; RIVM, 2018; de Boer, et al., 2013). The individual influence on personal health, health policy and healthcare is becoming increasingly common. Self-management and control create a shift towards adaptability,

more personal responsibility and independence of the individual (RIVM, 2014; Roy, Levasseur, Couturier, Lindström, & Généreux, 2015).

1.2 HEALTH IN ORGANIZATIONS

The importance of prevention of diseases and promotion of health is demonstrated from a societal point of view. The following section explains the importance of health from an organizational point of view.

Health is one of the basic conditions to participate in the labor market, a resource during working life and therefore valuable for organizations (Abma, et al., 2016; Kraan & Sanders, 2016; van der Klink, et al., 2016; Harrison & Dawson, 2015). Health often forms part of the policy on employability of employees. Due to current laws and regulations concerning the increased retirement age, the ageing workforce and the fact that employers have to take more and more responsibility for preventing absenteeism and even presentism, the employability of employees is becoming increasingly important (Ilmarinen, 2005; Harrison & Dawson, 2015; van der Heijden, Gorgievski, & De Lange, 2016). Additionally, the motive of organizations to focus on employability often concerns the company's objectives to be achieved (AWVN, 2017). According to the Algemene Werkgeversvereniging Nederland (AWVN) (Eng: General Employers Association of the Netherlands) these objectives relate mainly to increasing or maintaining market share, cost leadership, expansion (internationalization), quality improvement or innovation of products or services (AWVN, 2017). The increasingly knowledge-intensive market demands much more organizational flexibility, creativity and energy to gain competitive advantage (van der Heijde & van der Heijden, 2006). These developments affect the requirements of employees (SZW, 2017; van der Klink, et al., 2011; Kruijf & Langenberg, 2017; van der Heijden, Gorgievski, & De Lange, 2016). Employees' capabilities aimed at flexibility, professionalization and continuous self-development are necessary to meet these demands (Fugate, Kinicki, & Ashforth, 2004; van der Heijden, Gorgievski, & De Lange, 2016). In this way work can be complex, challenging a state of health which differs from the past (van der Klink, et al., 2016; van der Heijden, Gorgievski, & De Lange, 2016).

The vast majority of organizations or companies in the Netherlands are Small and Medium Sized Enterprise (SMEs). According to the Dutch Ministry of Economic Affairs, there are about 3 million full-time jobs in SMEs (2 to 250 employees) (KvK, 2018; EZ, 2017). In 2016, all these companies accounted for 72% of employment and 62% of the added value in the Dutch industry (EZ, 2017). Therefore it is essential that especially SMEs recognize and exploit opportunities to improve health-related employability in a timely manner.

The importance of health as a resource has been emphasized especially with regard to the employability of employees within organizations. This, combined with the societal urgency of prevention of diseases and the promotion of health in general, creates a need for insight into health and health at work (Harrison & Dawson, 2015). The question arises about how health can be a resource during working life, even with the presence of health problems.

1.3 HEALTH AND EMPLOYEES

Employees are an important asset for organizations to achieve the abovementioned business objectives (van der Heijde & van der Heijden, 2006). The performance of an employee relates to activities executed at work, while ability refers to the possibilities that exist to perform these activities. It embraces both the individual employee who is capable and motivated to work, as well as the context which must enable this person to perform his or her work (van der Klink, et al., 2011; van der Heijde & van der Heijden, 2006; Fugate, Kinicki, & Ashforth, 2004; Harrison & Dawson, 2015). According to Ilmarinen (2005) the work ability of employees is influenced by individual health, functional capacity and competences. The previous mentioned societal and organizational trends all influence the individual health of employees.

1.3.1 POSITIVE HEALTH AND SUSTAINABLE EMPLOYABILITY

Recent trends in the field of health and sciences have instigated positive health models which have led to the interest of various stakeholders (Huber, et al., 2016; Huber, et al., 2011). In contrast to the scientific medical model that focuses on biomedical theory and pathogenesis (Naidoo & Wills, 2016), positive health focuses on the opposite, the salutogenesis as coined by medical sociology professor Antonovsky (1996) and incorporates possibilities and adaptability (Huber, et al., 2016). This positive health model emphasizes the potential to be or become healthy and stay healthy, even though health problems are present or arise.

Research shows that employability is an extensive concept and it has been an object of research since many years (Bossink & Wognum, 2012; AWVN, 2017; Abma, et al., 2016; Hillage & Pollard, 1998; Lange & Wijk, 2012; Thijssen, 2000; van der Heijde & van der Heijden, 2006; van der Klink, et al., 2010; van der Klink, et al., 2016; McQuaid & Lindsay, 2005). Although definitions are used in different ways they have in common that they describe the conditions of an employee to be able to work, keep being able to perform at work or finding a new profession when necessary. The key aspect of sustainable employability is sustainability i.e. creating and especially maintaining employees to be employable (van der Klink, et al., 2016) without harming employability. According to Fugate (2004), employability is related to personal adaptability. The increased pace of change that organizations face requires employees to be able to adapt easily to the changing environment, working methods, working

hours, tasks and responsibilities. As a result, Fugate (2004) indicates, that the willingness of an employee to take personal responsibility becomes more and more important in creating employability.

In light of the combination of health and employability, a positive health model could be suitable. It is a general characterization of health, and it does not pretend to be complete or to name all the factors that contribute to employability. A discussion tool based on a positive health model has been developed but is not tested as a measuring instrument (Huber, et al., 2016). In addition, it has never been applied in research into sustainable employability among employees.

Because society faces various challenges related to public health, organizations are increasingly depending on their employees and people are working for a large part of their lives, this study wants to contribute to insights related to the combination of health and work. It is suspected that salutogenesis and positive health connects to sustainable employability and that the discussion tool, transformed into a questionnaire, can be a supplement to current measurements regarding sustainable employability among employees.

1.4 OBJECTIVES AND RESEARCH QUESTION

The aim of this exploratory study is to gain an understanding about the relationship between health and sustainable employability. More specifically, it explores whether or not the positive model of health is connected to sustainable employability, and if so, how the positive health model connects to sustainable employability.

The overall research question is: *What is the relationship between health and sustainable employability and to what extent is a positive health model an addition to current insights and measurements of sustainable employability?*

This leads to the following theoretical research questions:

1. To what extent are health and sustainable employability related?
2. To what extent is a positive health model suitable within a concept of sustainable employability when compared with the biomedical model of health?

This leads to the following empirical research questions:

3. To what extent is the positive health framework, applied as a questionnaire, reliable and valid when tested among SME employees?
4. To what extent is the positive health framework and its dimensions, applied as a questionnaire, related to sustainable employability?

1.5 CONTRIBUTIONS AND RELEVANCE

Health is fundamental to participation in society, especially to labor participation (de Boer, et al., 2013). This research offers insights to health regarding work and employability and contributes to related research with a focus on health and positive health. Understanding the link between health sciences, health models and employability may result in a more comprehensive approach of sustainable employability. Thereby, this study will explore, for the first time, whether the health discussion tool, developed by Huber et al. (2016) as a questionnaire is applicable among employees, and if it can be related to sustainable employability measurements. Consequently, this study seeks to contribute new insights to resolve the gap between health approaches and employability by linking positive health and employability with a focus on sustainability, adaptability and employees' responsibility.

1.6 READER'S GUIDE

Chapter two presents a theoretical framework and literature review. It provides further argumentation on the relationship between health and employability. The approaches of employability are further analyzed, as well as the positive health model. The chapter ends with a summary, conceptual models and hypotheses. Chapter three will present the methodology, including, the composition of the questionnaire, data collection and the analytical approach which will be used. Chapter four will show the results of the first statistical analyses regarding reliability and validity followed by the statistical analyses namely hypotheses testing. The tests and results will be outlined based on the conceptual model as stated in chapter two. In chapter five the overall study and results will be discussed and shortcomings will be addressed. Chapter six contains the conclusion and will provide answers to the research questions formulated in this introduction and recommendations will be presented. The final part of this document shows the references used during this study, followed by the appendices in which the performed statistical tests are presented.

CHAPTER 2 : THEORETICAL FRAMEWORK

This theoretical framework presents the completed literature review on health and sustainable employability. Both terms are described separately on the basis of existing literature. The chapter discusses the possible relationship between positive health and sustainable employability. At the end of this chapter a conceptual model and hypotheses will be presented.

2.1 HEALTH

The World Health Organization (WHO) describes health as '*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*' (WHO, 2014; WHO, 1946). Models which allow insight into health often depend on different perspectives (Naidoo & Wills, 2016). While the biomedical model of medicine is the most common in the West, social sciences criticize scientific medicine and point on the importance of social dimensions in the construction and meaning of health (Naidoo & Wills, 2016; Wade & Halligan, 2017).

The biomedical model of health is used as a foundation in healthcare and health sciences. This model focuses on a biomedical point of view wherein health and disease are influenced positively or negatively. It emphasizes the negative part of the WHO definition of health where diseases are (partially) influenced by treatment (Naidoo & Wills, 2016). This is essential to medical and public health. Diagnoses are made based on guidelines and measurements, true or false, a positive or negative outcome concerning stated thresholds (Huber, et al., 2011). This results in the creation of two groups; sick and not sick (Mittelmark & Bull, 2013). The focus on pathogenesis, on finding the causes of ill health, results in an emphasis on risk factors, lifestyle, negative health behavior or social circumstances (Naidoo & Wills, 2016). In this way, medicine and medical practice recognize the importance of the social context. These concerns have resulted in the biopsychosocial model wherein psychological and social factors also determine disease and the health (Wade & Halligan, 2017; Roy, Levasseur, Couturier, Lindström, & Généreux, 2015). Nevertheless, this biopsychological model is an extension of the biomedical point of view, it is not commonly accepted, especially in (scientific) research and (public) health figures there is still a lot of attention for curing a disease and the effect of medical interventions to become healthy (Naidoo & Wills, 2016; Huber, et al., 2011; Wade & Halligan, 2017).

In light of the aging population and the increase of the chronically ill, health as a state of complete well-being seems difficult. Prevention of diseases and promotion of health are of great importance to deal with the consequences of the demographic changes (Naidoo & Wills, 2016; Harrison & Dawson, 2015). Therefore an individual must be able to identify and realize aspirations, satisfy needs and adapt to or cope with the environment (WHO, 2016).

A health model which incorporates adaptability and self-management is positive health, which focuses on 'health as the ability to adapt and to self-manage, in the face of social, physical and emotional challenges' (Huber, et al., 2011, p. 3; Huber, et al., 2016, p. 1). To explore this positive health model Huber et al. (2011), the support among various stakeholders (healthcare professionals, patients, policy makers, insurers, public health professionals, citizens and researchers) was studied by Huber et al. (2016). Additionally, the purpose of this study was to gain insight in different components of positive health (Huber, et al., 2016). The support among the different stakeholders for this positive health model was found and 6 different dimensions of health were formulated; bodily functions, mental functions and perception, daily functioning, social participation, sense of life and quality of life. According to this research there were seven underlying aspects per dimension (Huber, et al., 2016).

The dimension bodily functions describes medical facts and observations, physical functioning, pain and energy. The cognitive functioning emotional state, self-respect and self-management in combination are the underlying aspects of mental function and perception. The dimension daily functioning has underlying aspects of activities in daily living, the ability to work and health literacy. The dimension social and societal participation deepens subjects as social skills, relationships, social contacts, appreciation and meaningful work. The spiritual dimension, or sense of life, include meaningfulness, striving for ideals, future prospects and acceptance. And last the dimension quality of life contains well-being, experiencing happiness and enjoyment and the perceived health and balance (Huber, et al., 2016). A conversation or discussion tool was developed, based on the dimensions and aspects. The aspects of the dimensions are queried in a positive way, "I feel fit," I have no complaints or pain", "I feel cheerful", "I am grateful for what life offers me" etc. The results can be visualized in a diagram in the shape of a spider web, the resulting health surface indicates an estimation of a person's state of positive health (Huber, et al., 2016).

The quantitative part of this study (Huber, et al., 2016) revealed different stakeholder groups, including policy makers, healthcare providers and insurers, assigning most value to the bodily functions dimension in representing health. However, patients ascribed equally value to every dimension, meaning that they see health more widespread than just the absence of disease (Huber, et al., 2016). The study also showed a relationship between being confronted with chronic illness and lower scores on the dimension bodily functions and higher scores for the spiritual dimension (Huber, et al., 2016). This positive health model is recognized in the healthcare sector. Physiotherapists and nurses, for example, included the model in their professional profile. In the context of Dutch prevention programs, the practical use of the model was stimulated (Steekelenburg, Kersten, & Huber, 2016; RIVM, 2014). The ongoing interest in positive health makes the question rise if this model can also be used regarding sustainable employability (Steekelenburg, Kersten, & Huber, 2016; Arbo-online, 2016).

2.2 HEALTH AND EMPLOYABILITY

As stated in the introduction, health, from a societal point of view, is important for participation, especially to labor participation or employment (van der Klink, et al., 2016; Abma, et al., 2016; Kraan & Sanders, 2016; Harrison & Dawson, 2015). From an organizational point of view, employee health is increasingly being described with regard to employability.

Employability as a term already exists for numerous years (Bossink & Wognum, 2012; van der Heijde & van der Heijden, 2006). The many definitions of employability differ on all kinds of aspects, in conclusion definitions depend on the point of view from which it is written (van der Heijde & van der Heijden, 2006), i.e. from a management point of view, economic point of view or an individual point of view (Ilmarinen, Tuomi, & Seitsamo, 2005; Edwards, 1991; Hillage & Pollard, 1998; Fugate, Kinicki, & Ashforth, 2004; van der Heijde & van der Heijden, 2006; Bossink & Wognum, 2012; van der Klink, et al., 2016). Nonetheless, according to these authors in conclusion employability always concerns individual characteristics, possibilities, adaptability and sustainability.

In the most recent studies employee health has become an aspect of employability. Bossink & Wognum (2012, p. 88) refer to specific health conditions in their definition of employability, they state that employability comprises '*All physical and mental conditions and contextual conditions that determine the current and future position of employees in the labor market, so that the ability to obtain work and retain optimized*'. Thus employability should be sustainable (van der Klink, et al., 2016; Bossink & Wognum, 2012; van der Klink, et al., 2011) in a way that the status of employability can be maintained or continued at the same level for a period of time. A definition of sustainable employability is stated by van der Klink et al. (2010; 2016). These authors defined sustainable employability as '*throughout their working lives, workers can realize 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. This requires, on the one hand, a work context that facilitates this for them and on the other, the attitude and motivation to exploit these opportunities*' (van der Klink, et al., 2016, p. 74). Health is seen as a resource which enables employees to be sustainable employable. As a result employees can also work on their health and optimize their sustainable employability (Vos & de Jong, 2014). In this way prevention of diseases and promotion of health can also take place in organizations (Naidoo & Wills, 2016; Harrison & Dawson, 2015) alongside the development to sustainable employability of employees.

In conclusion, the health status of an employee is important in relation to sustainable employability, however, it is influenced by individual factors. On many fronts, the health status of people with a low socio-economic status is worse than that of people with a higher socio-economic status (RIVM, 2010). One of the indicators of socio-economic status is the level of education (highest level of education). It mainly determines access to information and the ability to use new information (Oyen van, Deboosere, & Lorant, 2011; RIVM, 2018). Next to education, age is an important factor to take into account when considering sustainable employability and health (van der Klink, et al., 2011; Ilmarinen, 2005). The aforementioned trends and developments in organizations and society confirm that the sustainable employability of especially older employees is becoming increasingly important (Bossink & Wognum, 2012; van der Klink, et al., 2011). In addition, according to Kraan & Sanders (2016) it is important to bring sustainable employability and health to the attention at an early stage of an employee's career, i.e. at a young age. Employees must all remain active and productive up to the shifting pensionable age and be able to cope with or adapt to the many developments in the organization and in society (Bossink & Wognum, 2012). Individual characteristics, next to gender and work context influence the outcome on sustainable employability (Ilmarinen, 2005; van der Klink, et al., 2016; Lange & Wijk, 2012). When health as '*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*' (WHO, 1946) is part of the individual characteristics within employability and employability contributes to health, both health and employability underpin sustainability in sustainable employability according to the definitions of van der Klink et al. (2016) and Bossink & Wognum (2012).

Figure 1 gives a summary of the relationships between health and employability, which together can lead to sustainable employability.
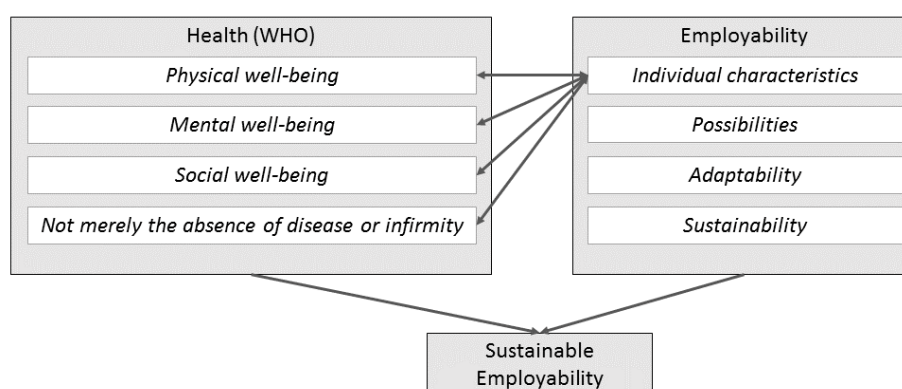
Figure 1 The relationships between health and employability, leading to sustainable employability

2.2.1 ADAPTABILITY

When employability and health are outlined this way, the question arises if and how health can contribute to possibilities and adaptability within sustainable employability.

Adaptability can be addressed from a health perspective as well. In the previous century, Antonovky (1996) described a different approach of health. Instead of the pathogenesis, Antonovsky describes a salutogenic model of health. The model is driven by the question why some people feel healthy even with unfavorable conditions (for example chronic illnesses, or limitations), change and stress and others do not (Naidoo & Wills, 2016; Eriksson & Lindström, 2006). According to Eriksson and Lindström (2006), Antonovsky describes the 'sense of coherence' (SOC) as a core construct of the salutogenic model, it focuses on the origins of health and well-being instead of disease. SOC is a coping strategy of individuals. The SOC is a resource to manage everyday life circumstances, changes and events that may be considered as stressors (Eriksson & Lindström, 2006; Eriksson, 2017). This can involve major life events or, from an employee point of view, organizational changes or (the risk of) unemployment (Eriksson, 2017). The SOC includes three elements: comprehensibility, manageability and meaningfulness which can also be tailored into work characteristics or work places (Super, Wagemakers, Picavet, Verkooijen, & Koelen, 2016; Gregor, Vinje, & Torp, 2017; Huber, et al., 2011). Antonovksy states that SOC is an important factor for health; understanding (comprehensibility), managing (manageability) and making sense of change (meaningfulness) are human abilities which can be positively or negatively affected by the environment (Antonovsky, 1993; Naidoo & Wills, 2016). The salutogenesis and the SOC are used as the foundation of the positive health model proposed by Huber et al. (Huber, et al., 2016; Huber, et al., 2011). The positive health model is an opportunity to create a holistic view on disease, health and prevention with a focus on creating and maintaining possibilities, adaptability and self-management (Huber, et al., 2016). Figure 2 gives a schematic view of the substantiated relationships between health according to the WHO (WHO, 1946), positive health and possibilities and adaptability within employability, which together contribute to sustainable employability.
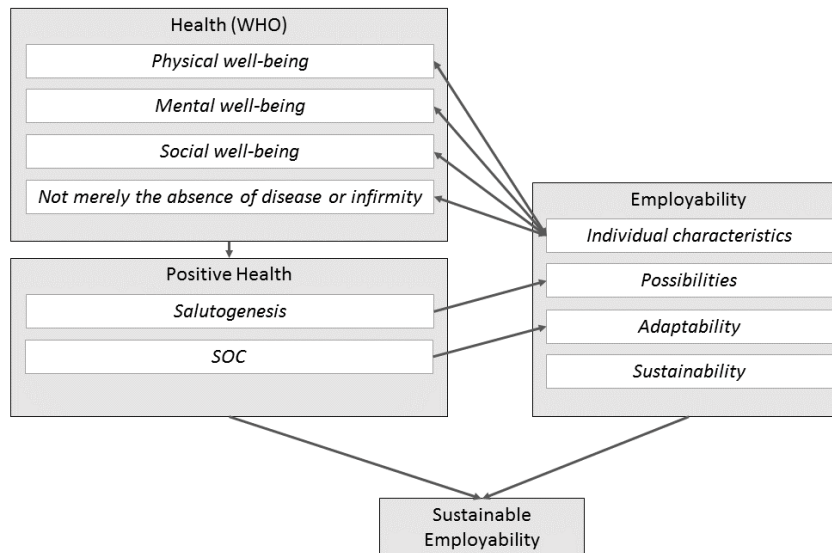
Figure 2 The relationships between health, positive health and possibilities adaptability, leading to sustainable employability

2.2.2 RESPONSIBILITY

The previous section describes comprehensibility, manageability and meaningfulness as important factors in positive health. For employees, meaningfulness in work influences individual motivations, attitude and functioning (van der Heijde & van der Heijden, 2006; van der Klink, et al., 2016). According to van der Klink et al. (2010; 2016), an employer must allow an employee to find added value in work. According to numerous authors (Fugate, Kinicki, & Ashforth, 2004; van der Heijde & van der Heijden, 2006; Bossink & Wognum, 2012; van Vuuren & Marcelissen, 2017) employability is a shared responsibility and affects as well organizational as employee outcomes. Both within social health (citizen) and care (patient), as within current organizations (employee), people are asked to take charge of their own lives or work (van Vuuren, Lub, & Marcelissen, 2016). Additionally, sustainable employability requires a change in behavior of employees (van Vuuren & Marcelissen, 2017), employees need to have self-leadership (Vos & de Jong, 2014) and take responsibility (van der Klink, et al., 2016; Harrison & Dawson, 2015) to improve sustainable employability.

Figure 3 provides a schematic representation of the relationship between employability and responsibility, which together contribute to sustainable employability.
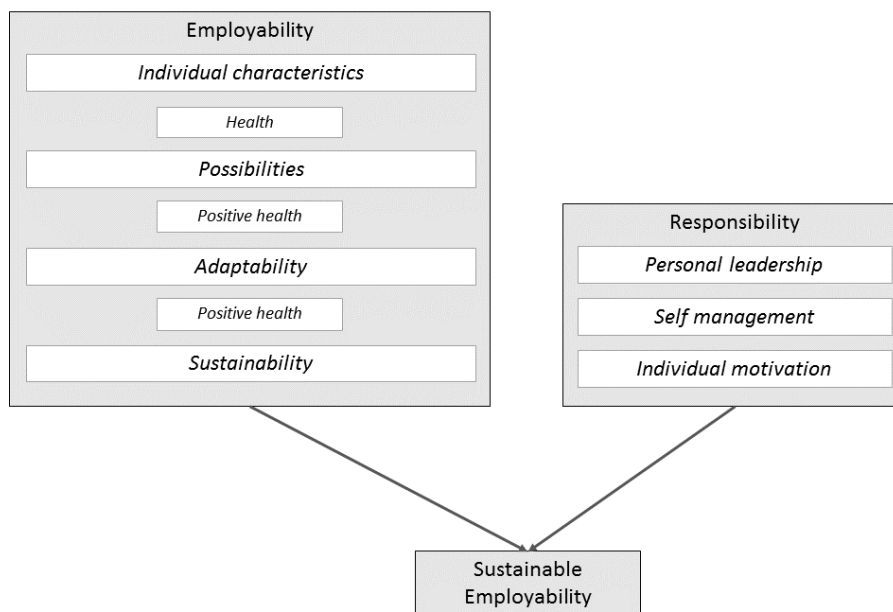
Figure 3 The relationships between employability and responsibility, leading to sustainable employability

Now that the relationships between the components of health and sustainable employability have been addressed from a health point of view, it will be investigated how to approach this from a sustainable employability point of view.

2.3 SUSTAINABLE EMPLOYABILITY APPROACHES

Two concepts will be accentuated in this part because they are frequently used to create insight and measure sustainable employability (Vos & de Jong, 2014; Abma, et al., 2016); the work ability concept by Ilmarinen (2007) and the modified capability approach of Amartya Sen by van der Klink et al. (van der Klink, et al., 2016).

2.3.1 THE WORK ABILITY CONCEPT

According to Ilmarinen (2001, p. 459) '*the promotion of work ability is a basic process that is needed before the features of employability can be fully utilized*'. The foundation of the work ability concept in the early 1980's is based on having good physical and mental employee health. Work ability reflects the ability of a worker to be physically and mentally able to perform his current job (Ilmarinen, Tuomi, & Seitsamo, 2005). According to Ilmarinen (2009) within the work ability approach, one indicates that the equilibrium is not static, it changes over time. It is important to throughout ones entire career and to ensure that it is maintained or improved but it is measured only at that moment in time (Ilmarinen, Tuomi, & Seitsamo, 2005). The work ability is a 'multidimensional concept'. It is described as a house of four floors, the basic floor is about health resources, whereas the fourth floor is about working life factors (Ilmarinen, Tuomi, & Seitsamo, New dimensions of work ability, 2005). The floors in between describe the competences of the employee, values i.e. joy of work and the work

context; physical demands, mental strain, supervisory support and possibilities for development (Ilmarinen, 2005). Promotion of work ability, for example during aging, is a challenging, multidisciplinary and multidimensional task (Ilmarinen, Tuomi, & Seitsamo, 2005), but creates the foundation for sustainable employability at all ages (Ilmarinen, 2001).

2.3.2 THE CAPABILITY APPROACH

Van der Klink et al. proposed a new model of sustainable employability. Their model is based on the capability approach of Amartya Sen (van der Klink, et al., 2016; van der Klink, et al., 2010; Abma, et al., 2016). This model, as stated by the authors, represents the process in which employees can use different inputs and sources to accomplish valuable goals in their work (van der Klink, et al., 2016). This approach states that not only the individual is responsible for achieving sustainable employability but also the employer (van der Klink, et al., 2016; Bossink & Wognum, 2012). In this model health is a determinant for participation and as an individual capability or resource, health is necessary to achieve valuable goals in life and work (van der Klink, et al., 2016; Abma, et al., 2016; van der Klink, et al., 2011). In the definition and conceptualization of sustainable employability in this research, values and capabilities play an important role (van der Klink, et al., 2016). The model describes the path from inputs or resources, the influence of personal and work factors to a capability set (Abma, et al., 2016) which all contribute to well-being, quality of working life and achievements in valuable functioning (van der Klink, et al., 2016). While the capability approach fits well into the recent views on health and current insights to work, health in this model is seen as a general input and is not further elaborated (van der Klink, et al., 2016). The next section will outline the work ability concept and the capability approach next to each other.

2.3.3 ANALYSIS OF THE APPROACHES FROM A HEALTH POINT OF VIEW

Although the approaches are different in how to achieve employee employability, they have in common that they put the potential of the employee to function in front. They also have in common that they state that the working place as a whole can create employability over time and societal, environmental and global influences are taken in account. Both assume good health to be essential for the employee and consider it as a basic condition which must be present before employability can arise. In conclusion both employability models emphasize the possibilities, chances or at least opportunities that enable employees to thrive at work.

From a health point of view and the aforementioned characteristics of sustainable employability, the work ability approach has a number of shortcomings. It does not completely address health in the light of the WHO definition. Physical and mental health are included, but the social component of health is missing. It contains multiple aspects of the biomedical approach aimed at

illness and absenteeism, i.e. limitations. This information may be important for an organization, does not underpin the aforementioned aspects; possibilities and adaptability. Thereby employees' responsibility is not addressed at all. However, advantages of this approach are that it aims at the future and it gives additional attention for mental resources.

The capability approach (van der Klink, et al., 2016; Abma, et al., 2016), concentrates on important work-related values. Abma et al. (Abma, et al., 2016) found a significant correlation to self-rated health and the capability set for work. However, the research only included one question to analyze the relationship between capabilities and health (Abma, et al., 2016). In general, 'how would you rate your health?' (Abma, et al., 2016). This study did not focus on the broad view of health but on workability, work role functioning (physical and flexibility demands), work performance, hours at work and sickness absence.

When the health perspective of the WHO (WHO, 1946) and the salutogenesis (Super, Wagemakers, Picavet, Verkooijen, & Koelen, 2016) is used in sustainable employability to emphasize possibilities and to create sustainability, adaptability and responsibility, the emphasis should be on the presence of health and not on the presence of negative (health)influences. According to the definition of the WHO and the salutogenesis, a holistic approach seems appropriate. Whether a positive health model can indeed be connected to sustainable employability is further investigated in this study.

2.4 SUMMARY - POSITIVE EMPLOYEE HEALTH AND SUSTAINABLE EMLPOYABILITY

The importance of health in sustainable employability is presented in the previous theory. It is pointed out that the biomedical model of health in the current world with aging and the increase of chronically ill (physically and mentally) is inadequate when addressing sustainable employability as a construct of possibilities and capabilities of employees. The definition of the WHO (WHO, 1946) is comprehensive and indicates that the social context should be added and the focus should not lie on merely the absence of a disease.

The insights in sustainable employability and the contribution of health are important for organizations as employees are a determining factor for achieving business objectives (van der Heijde & van der Heijden, 2006). Work and organizations are continuously subject to change and ongoing developments, which creates a demand for specific capabilities of employees; flexibility, continuous self- development, adaptability and responsibility (Fugate, Kinicki, & Ashforth, 2004; van der Heijden, Gorgievski, & De Lange, 2016). The positive health model of Huber et al. (Huber, et al., 2016) based on the salutogenesis and SOC could be connected to sustainable employability from a holistic and positive health point of view (Super, Wagemakers, Picavet, Verkooijen, & Koelen, 2016).

2.5 CONCEPTUAL MODEL EMPIRICAL RESEARCH

The next section presents a conceptual model and hypotheses which are used for the empirical part of this research, to elaborate if and how positive health connects to sustainable employability. Additional hypotheses were formulated to study the dimensions of positive health regarding sustainable employability and its components.

Figure 4 represents a conceptual model based on the positive health model and the above explained theory with an emphasis on sustainability, adaptability and employee's responsibility.
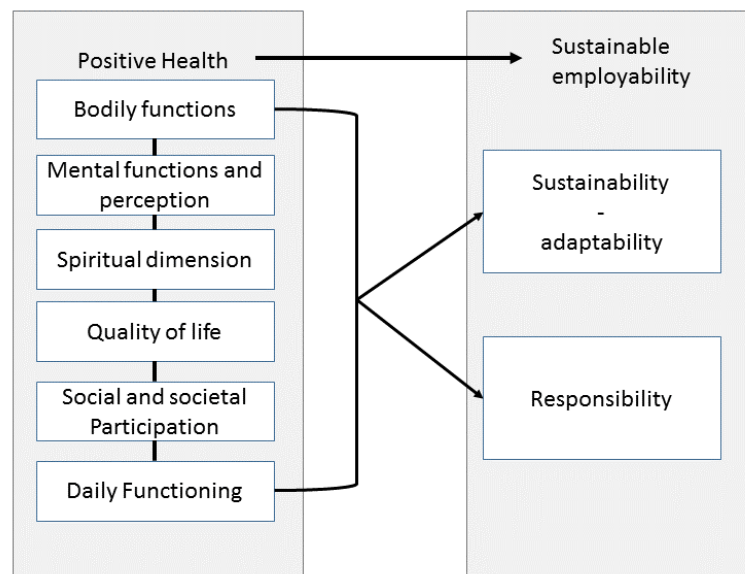
Figure 4 Conceptual model of relationships between a positive health model and sustainable employability

According to van der Klink et al. (van der Klink, et al., 2011) the context of work and characteristics of employees, i.e. knowledge, competencies and personal health influences sustainable employability. Good health is an important factor in maintaining paid employment (van den Berg, Schuring, Avendano, & Mackenbach, 2010). Ilmarinen et al. (2005) found that health resources and factors of working life indicated the most significant connections with work ability. Another study found added value of positive health indicators on current measurements of health statuses and conditions at work (Burkert, Raml, & Beier, 2015). The first objective of the empirical part of this study is to explore if and how the positive health model defined by Huber et al. (Huber, et al., 2016) is related to sustainable employability. The first hypothesis is:

1. *The aggregate measure of positive health is positively related to sustainable employability.*

The additional objective of this study is to explore if and how the dimensions of positive health are related to sustainable employability. The WHO definition of health concerns physical, mental and social wellbeing. Gould et al. state that health, especially physical and mental, and social functioning are related to workability (Gould, Järvisalo, & Koskinen, 2008). Burkert et al. (2015) included physical health and psychological health in their study, but also holistic positive health indicators as social orientation and participation, spiritual health, self- efficacy (autonomy) and well-being. They found additional value of these indicators on current health status. The following hypothesis is based on the holistic view on health and therefore includes all the positive health dimensions of the positive health model.

2. *The six dimensions covered by the positive health model are collectively positively related to sustainable employability.*

The research of Huber et al. (2016) presented bodily functions as the most valuable dimension to represent health. However, studies concerning influences of health on sustainable employability, found significant relationships between mental and physical health and sustainable employability. In the research of Bossink & Wognum (2012) physical and mental health correlated significantly and positively with sustainable employability. According to van Vijfeijke (2013) physical and mental health predict high work ability, and influence subsequent changes in work ability in their research. For that reason the dimensions physical functions and mental functioning and perceptions are included in hypothesis 3:

3. *Within the model of positive health the dimensions bodily functions and mental health have the strongest positive influence on sustainable employability.*

As stated in the theoretical framework, employees must cope with fluctuating demands on flexibility and changing job requirements (van de Vijfeijke, et al., 2013; van der Klink, et al., 2016; Bossink & Wognum, 2012; Fugate, Kinicki, & Ashforth, 2004). According to van der Klink et al. (2016) sustainability is necessary to maintain employable and employees' health contributes to sustainability. According to Bossink & Wognum (2012) employees with good mental health are able to adapt to different situations. The adaptability or ability to successfully cope with physically and mentally demanding work is, according to van de Vijfeijke et al. (2013), an important component in sustainable employability. In their study interactions between physical and mental health and coping strategies (adaptability) were found.

During this study, it will be investigated if the total positive health model is related to sustainability and adaptability. In addition it will be explored whether physical and mental health are specifically important, as van de Vijfeijke (2013) and Bossink & Wognum (2012) indicate.

The three hypotheses concerning sustainability and adaptability are

4. *The aggregate measure of positive health is positively related to sustainability – adaptability (SA)*

5. *The six dimensions covered by the positive health concept are collectively positively related to sustainability – adaptability (SA)*

6. *Within the model of positive health the dimensions bodily functions and mental health have the strongest positive influence on sustainability – adaptability (SA)*

As stated in the theoretical framework, working life demands self-management and personal responsibility for sustainable employability (Fugate, Kinicki, & Ashforth, 2004; van Vuuren & Marcelissen, 2017). According to Fugate et al. (2004), employability approaches coincides with a major shift of responsibility for career management and employability to employees. Abma et al. (2016) defines health as the ability to adapt and take personal responsibility as a foundation for sustainable employability. This was based on the insight of Huber et al. (2016) and the positive health model. Less information was found about an observed relationship between health or positive health and employees' responsibility. But, the research of Dolbier et al. (2001) describes correlations between self-leadership and psychological and physical health and work outcomes.

In this study, the relationship between positive health and employees' responsibility will be investigated. The question is whether positive health affects the sense of responsibility of employees. Based on the findings of Dolbier et al. (2001) bodily functions and mental health are included in hypothesis 9 to investigate if and how specific dimension are related to responsibility. The three hypotheses concerning employees' responsibility are:

7. *The aggregate measure of positive health is positively related to employees' responsibility*

8. *The six dimensions covered by the positive health model are collectively positively related to the employees' responsibility*

9. *Within the model of positive health the dimensions bodily functions and mental health have the strongest positive influence on employees' responsibility*

CHAPTER 3 : METHODOLOGY

This chapter discusses the operationalization of the research. Section 3.1 describes the type of research and the reason why this was chosen. Section 3.2 provides insight into how the questionnaire is established. Paragraph 3.3 and 3.4 describe the group of participants and the procedure followed in the data collection. Finally, the data analysis will be discussed including the techniques used for data analyses.

3.1 EXPLORATORY RESEARCH – PILOT

This part of the research is exploratory in a way that positive health has not yet been investigated as a measuring instrument or questionnaire. In addition it has not been applied among employees. The research into the applicability of the discussion tool belonging to the positive health model as a questionnaire among SME employees is intended to be a pilot study. The aim is to create insight into the reliability and validity of this discussion tool of positive health when used as a questionnaire and to provide understanding of the relationship with sustainable employability. The choice has been made to use a quantitative research method to be able to test the hypotheses.

3.2 QUESTIONNAIRE

3.2.1 POSITIVE HEALTH

During this study the positive health approach was further explored, as this model focuses on possibilities, chances and opportunities of individuals. The research into the positive health model by Huber et al. (2016), included the development of a discussion tool. As described in the theoretical part, the six separate dimensions of positive health were composed in a previous study (Huber, et al., 2016). The six dimensions concern seven items each. These items were already converted into questions (Huber, et al., 2016) in the discussion tool of positive health. These questions were literally processed in the questionnaire used for this current research (Table 1).

Table 1 Positive health questionnaire

Dimension		Question
Bodily functions	1	I feel healthy
	2	I feel fit
	3	I have no complaints or pain
	4	I sleep well
	5	I eat well
	6	I recover quickly after exertion. For example after exercise
	7	I can move easily. For example, climbing stairs, walking or cycling.
Mental functions & perception	1	I can remember things well
	2	I can concentrate well
	3	I can see, hear, talk and read well
	4	I feel cheerful
	5	I accept myself as I am
	6	I am looking for solutions to change difficult situations
	7	I have control over my life
Spiritual dimension	1	I have a meaningful life
	2	In the morning I'm looking forward to the day
	3	I have ideals that I would like to achieve
	4	I have confidence in my own future
	5	I accept life as it comes
	6	I am grateful for what life offers me
	7	I want to continue learning my whole life
Quality of life	1	I enjoy my life
	2	I'm happy
	3	I feel good
	4	I experience balance in my life
	5	I feel safe
	6	I am satisfied with where I live and with whom
	7	I have enough money to pay my bills
Social & societal participation	1	I have good contact with other people
	2	Other people take me seriously
	3	I have people with whom a can do nice things
	4	I have people who support me if needed
	5	I feel like I fit in
	6	I have work or other activities that I find useful
	7	I am interested in what is happening in society
Daily functioning	1	I can take care of myself. For example; washing, dressing, grocery shopping, cooking
	2	I know what I can and cannot do
	3	I know how to take care of my health
	4	I can properly plan what to do in a day
	5	I can handle well the money I get each month
	6	I can work or do voluntary work
	7	I know how to get help from official agencies, if necessary

3.2.2 SUSTAINABLE EMPLOYABILITY

Within both approaches mentioned in the theoretical framework, no extensive instrument was found that incorporates all aspects addressed in the previously explained theory about health and sustainable employability (sustainability, adaptability and responsibility). The instruments are partly based on the scientific medical model or do not incorporate physical, mental and social health or do not address adaptability and responsibility. Because of the missing components another instrument was analyzed. In the next section the Duurzame Inzetbaarheidsindex (DIX) (Eng; sustainable employability index), which is an extension of the work ability index and other validated questionnaires, will be explained.

3.2.2.1 SUSTAINABLE EMPLOYABILITY INDEX

The DIX is based on already existing concepts and questionnaires and is used as one of the basic instruments of the Nationaal Inzetbaarheidsplan (NIPlan) (Eng: National Deployment Plan).

This questionnaire measures the (development of) sustainable employability (Vos & de Jong, 2014) and is very wide-ranging. It is largely based on the Nationale Enquete Arbeidsomstandigheden (NEA) (Eng: National Survey on Working Conditions). The NEA is one of the largest periodic surveys on the work situation of employees in the Netherlands from an employee perspective (TNO, 2018). In addition, questions are based on WHO questionnaires, the WAI, the Utrechtse Burnout Schaal (UBOS) (Eng: Utrecht Burnout Scale), TNO Study on Transitions in Employment, Ability and Motivation (TNO STREAM) (TNO, 2017), Arbeid-Verzuim-Gezondheid (AVG) (Eng; Work-Absence-Health), Werkgevers Enquete Arbeid (WEA) (Eng; Employers Survey Labor), Ontwikkeling en Innovatie (OEI) (Eng: Development and Innovation) and new questions have been developed (Vos & de Jong, 2014). The implemented questionnaires are valid and reliable constructs, the purpose of the DIX is to provide the participants i.e. employees with insight and to stimulate activities and take individual responsibility (TNO, 2014). This questionnaire, outlined in Table 2, has a broad perspective, in contrast to the previous questionnaires, and includes additional health-related components, components of sustainability and the sense of responsibility of the employee.

Table 2 DIX Sustainable employability questionnaire

DIX
(Vos & de Jong, 2014)

1. Health-work
   - General health
   - BMI
   - Fitness
   - Sense of life
   - Physical functioning (pain, discomfort)
   - Work ability
   - Fatigue
2. Professional knowledge – work
   - Professional knowledge
   - Proactive learning
3. Work motivation
   - Job satisfaction
   - Engagement
4. Work-life balance
   - Work-life balance
   - Financial situation
5. Current functioning
   - Failure
   - Presenteism
   - Performance
6. Personal leadership
   - Personal leadership
7. Resilience and willingness to change
   - Resilience
   - Willingness to change
   - Room for change
8. Future functioning
   - Future functioning
   - Continue work

The first version of the DIX was developed in 2011 based existing questionnaires (Vos & de Jong, 2014). In 2014, the questionnaire was adjusted based on research and user experiences (Vos & de Jong, 2014). The DIX contains questions about 4 core values, health, expertise, motivation and work-life balance. In addition, questions about current and future functioning, personal leadership and 'willingness to change' have been included as separate categories (Vos & de Jong, 2014). In the DIX, health is measured by general health, BMI (Body Mass Index), physical functioning and fatigue (TNO, 2014; Vos & de Jong, 2014). But it also incorporates work-life balance, personal leadership, which is connected to responsibility of employees (van Vuuren & Marcelissen, 2017; Vos & de Jong, 2014)

The design of the positive health questionnaire was used to create the sustainable employability questionnaire. Two sustainable employability dimensions were formulated based on the findings during the literature review as presented in the theoretical framework and the review of current measurements. These dimensions were based on familiar questions out of other research and validated questionnaires (Abma, et al., 2016; Ilmarinen, 2007). The questions were extracted from the DIX (Vos & de Jong, 2014). Questions from the most recent version (2014) were used in this study. These questions were chosen because they are primarily intended to provide the participants with insight create responsibility (Ybema, Vos, & Geuskens, 2013). The questions have been compared with the Work Ability Index and in addition it has been examined whether the questions from the DIX were also used in the study by Abma et al. (Abma, et al., 2016) to develop and validate their concept.

The following twelve questions (Table 3, Table 4) were incorporated in the questionnaire. The first component contained questions which are assumed to measure sustainability and adaptability. It is important to mention that these specific questions have been merged on the basis of agreements found in various questionnaires and that this is not a previously examined measuring instrument. The first six questions concern abilities in relation to the demands of work, energy, work-life balance and an individual assessment of future employability.

Table 3 Sustainability – adaptability questionnaire

	Question	Origin	WAI	Abma et al.
1	I can easily meet the physical requirements of my work	DIX	Derivate	X (derivate)
2	I can easily meet the mental requirements of my work	DIX	Derivate	X (derivate)
3	I can easily meet the emotional requirements of my work	DIX derivate		X (derivate)
4	At the end of the working day, I still have energy	DIX derivate		X (derivate)
5	I can combine my work well with my private life	DIX		X
6	I expect to be still able to do my job in 3-5 years	DIX	Derivate	X

The second six questions were all added based on the DIX. In the DIX all these questions belong to the personal leadership component (Vos & de Jong, 2014). This component is central to the possibility of self-management and therefore used as dimension concerning the responsibility of employees.

Table 4 Responsibility questionnaire

	Question	Origin
1	I am consciously engaged with my employability	DIX Personal leadership
2	I think it's important to keep my employability up to date	DIX Personal leadership
3	I think about how my work could change over the next 5 years	DIX Personal leadership
4	I know how to improve my employability	DIX Personal leadership
5	I'm well able to work on my employability	DIX Personal leadership
6	I think I'm responsible for my own employability	DIX Personal leadership

3.2.3 SCALE

To be able to compare the data, a Likert scale was used with de following response categories. All items in the questionnaire were measured with a five-point Likert scale, with answer options of 1 'strongly disagree', 2 'disagree', 3 'neutral', 4 'agree' and 5 'strongly agree'. This is an ordinal measurement and allows a relative score, and the relative scores can be compared with each other. The questionnaire was processed in an online survey program (SurveyMonkey) which could extract the results into software for analyzing data and running statistical tests.

3.3 PARTICIPANTS

A total of seven companies were contacted in the period between December 2016 until March 2017 and all were willing to participate in this study, which meant that the questionnaire could be sent to 261 employees. This population covered employees of various function levels, education levels, age and different working contexts (see Table 6 in the next chapter). An attempt has been made to include companies from different industries in the study to create diversity in the sample with regards to working context. However, it is a study difficult to generalize because it is explorative and conducted among a few organizations that do not immediately create a correct reflection of the workforce in the Netherlands. An overview of the participating organizations is presented in the next chapter.

All employees of the participating companies were informed about the questionnaire by the business owners or HR-managers. Subsequently all 261 employees were invited by mail to fill in the digital questionnaire. As stated in the previous chapter this exploratory research has the aims to analyze the concept of positive health as a questionnaire and the relationship with sustainable employability. To prevent any resistance to fill in the questionnaire, participants were additionally informed about the objective of this study and that therefore the questionnaire could be filled in anonymously because no individual scores would be used.

3.4 DATA COLLECTION

The survey was sent seven times in total, separately to each group of employees within one company. The design and introduction were adjusted for each company and the employees, whereas the structure and content of the questionnaire was the same for all companies. The total survey period for all companies was one month and after two weeks and one week before the end of the survey period, a reminder was sent to create more response. Companies did not all start at the same time with the survey period, therefore the results were collected in the period from April 2017 to July 2017. The dimensions of positive health, accompanied by the newly created dimensions of sustainable employability were used in order to investigate whether there is a link between positive health, the six

dimensions and sustainable employability. Table 5 presents the independent and dependent variables that were utilized in further analyses. The items correspond to the questions in Table 1, 3 and 4.

Table 5 Items in independent and dependent variables

Variable	Sub-scales	Items
Independent variable		
Positive health	Bodily functions	1 - 7
	Mental functions & Perception	8 – 14
	Spiritual dimension	15 – 21
	Quality of life	22 – 28
	Social & societal participation	29 – 35
	Daily functioning	36 – 42
Dependent variable		
Sustainable employability	Sustainability - adaptability	43 – 48
	Responsibility	49 – 54

In addition to the above mentioned questions asked on the Likert scale, demographic data such as gender, age, educational level and work context (physical or mental strain) were added to identify groups and to analyze if and how demographic features have an influence on the outcomes. The responses of the questionnaire were collected and arranged in the Statistical Package for Social Sciences (SPSS) program, in addition short summaries were created using Microsoft Excel.

3.5 STATISTICAL ANALYSES

Various analysis techniques were used in SPSS program. The file was cleaned up in advance. Missing data and errors were detected by the search for strange values, these were removed. The data analysis was performed with this final data set.

3.5.1 SOCIAL DEMOGRAPHIC FEATURES AND FREQUENCY DISTRIBUTION.

This empirical part of the study involved multiple organizations and diverse groups of employees, there could be differences in results between certain groups of employees. With reference to the societal trends described in relation to age and organizational trends related to physical or mental demanding work, demographic features were included in the empirical research. Training levels were added to identify whether this could be related to employees' responsibility. A new variable was computed to analyze whether age would have an influence on the different outcomes during the analyses of the results. The age groups were computed to a new variable with value 1 or 0, the value 1 will represent employee groups < 46 years and the value 0 will represent employees in the age groups of 46 years and older. This cut-off has been set at 46 years since in Dutch research between 2012 and 2014 statistical differences in sustainable employability were observed between these age groups (Kraan & Sanders, 2016).

The emphasis was not on the demographic factors, but the demographic features were included as a control variable in this study. Firstly, to gain insight in the respondents and to define any groups, the social demographic data will be collected and shown in a table. A comparison with the Dutch employee population was made to identify notable differences. Secondly the frequency distributions of all data were observed to see if the data was normally distributed and thus could be used for further analysis. In the following chapters the hypotheses will be further analyzed under the control of the variables, age, gender, work context (physical or mental) and educational level to answer the empirical research questions stated in the introduction and theoretical framework.

3.5.2 RELIABILITY

As mentioned the questionnaire of positive health was based on the discussion tool in the concept of positive health (Huber, et al., 2016). Each dimension consists of a number of questions. At first the assumption was made that the questions indeed belong to the overarching dimension. To define the reliability of the questionnaire the Cronbach's alpha reliability analysis was used. Cronbach's alpha is known as an internal consistency measurement that is used in the context of measuring instruments containing multiple items (de Vet, Mokkink, Mosmuller, & Terwee, 2017). The assessment of reliability contained two aspects. The assessment of the scale as a whole and the assessment of the items that may or may not contribute to the reliability (de Vet, Mokkink, Mosmuller, & Terwee, 2017). According to Field (2009), to analyze the reliability of a questionnaire with subscales, Cronbach's alpha should be used separately to these subscales. Thus the reliability of the separate dimensions were also calculated with Cronbach's alpha. Reliability analyses result in values between 0 and 1. High values above .80 refer to a high reliability of internal consistency. This means that the underlying questions all measure the same dimension. According to Field (2009) values above 0.70, can also be seen as reliable (Tilburg University, 2017). To assess the contribution of the items to a higher reliability value SPSS presents a column labelled as Cronbach's Alpha if Item is Deleted. This column shows the value when an item is not included in the in the analyses. If these values are higher than it may be needed to delete these items from the scale to improve the reliability (Field, 2009). This part of the reliability analysis was also performed.

3.5.3 FACTOR ANALYSIS

In order to be able to determine whether or not the questions used within the overarching concepts (positive health and sustainable employability) indeed display overarching theme, a (confirmative) factor analysis was performed for the total questionnaire. The factor analyses was repeated on underlying dimensions of positive health and sustainable employability.

The extraction method was the Principal Component Analysis (PCA), and the rotation method was Varimax with Kaiser Normalization. To determine the number of components within one dimension, the eigenvalues (> 1) of factors were used next to the number of components shown in the scree plot (Field, 2009). The loadings from the rotated factor matrix were used to explain the factors. The higher the loading, the more the item contributes to the formation of the factor. A value between 0.5 and 0.7 is moderate, a value between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are sublime (Field, 2009). When there were multiple factors found within one dimension, this dimension was further examined by using again Cronbach's alpha and the factor analysis. By analyzing the content of the items loading on one component an attempt has been made to identify what the overarching construct might be. In dimensions with multiple factors all components were further analyzed.

3.5.4 CORRELATION ANALYSES

Pearson's correlation analyses were conducted, prior to the regression analyses. The correlation coefficient is a standardized measure of an observed effect, a linear relationship, between variables (Field, 2009). A positive correlation is caused when high scores on one variable correspond with high scores on the other variable. A negative correlation is caused when scores on one variable correspond with low scores on the other variable. The coefficient is the value by which the strength and the direction of the correlation is expressed between -1 and +1 (Field, 2009). The Pearson's correlation analysis is frequently used and shows the size of an effect between variables (Field, 2009). Values around +/- .1 represent a small effect, values around +/- .3 represent a medium effect and +/- .5 represent a large effect . A coefficient of zero indicates no linear relationship at all (Field, 2009). According to Prion et al. (2014) it is of great importance to emphasize that the correlation coefficient does not imply causality between the two variables. It is often used in an explorative nature.

3.5.5 REGRESSION ANALYSES

Multiple regression analyses investigate the relationship between multiple independent variables and one dependent variable. Using the standardized regression coefficients, it is possible to determine which independent variables are most important in the prediction of the dependent variables. In all analyses the demographic features were taken into account as control variables. The analyses were conducted by the ANOVA test including the dependent variable sustainable employability, sustainability – adaptability or responsibility and the independent variables, positive health and the dimensions, resulting in R. The square of this correlation ('R Square') will indicate the part of the variance that is accounted for by the models. The R Square Change will show how much added variance can be explained by extending the model. The adjusted R Square corrects the value of R Square for the number of variables and cases in the model (Field, 2009).

CHAPTER 4 : RESULTS

In this chapter the sample description is shown including the social demographic characteristics. Subsequently statistical analyses regarding reliability and validity of the questionnaire and the statistical analyses concerning the hypotheses are presented.

4.1 SAMPLE DESCRIPTION

A total of 261 employees in the various approached organizations received the invitation to complete the questionnaire. After the completeness of the data was checked, 118 completed questionnaires were used for further analyses.

Table 6 Sample description

Company	Description	Amount of employees	Response	Response rate
Company 1: VZ	Prefabricated construction elements	90	27	30%
Company 2: BS	Painting company	2	2	100%
Company 3: AK	Cleaning company	16	8	50%
Company 4: CG	Strategic IT	64	29	45%
Company 5: CO	Building solutions	26	9	35%
Company 6: DH	Paramedic center	57	37	65%
Company 7: JS	Human resources	6	6	100%
Total response		**261**	**118**	**45%**

According to Field (2009), in research including regression analyses and predictive variables the following rule of thumb can be used for the minimum sample size. When a model has to be tested, the minimum sample size must be 50 + 8k. Where k is the number of predictive variables. In this case 50 + (8 * 6 dimensions of positive health) = 98. When testing individual predictors, the following formula can be used according to Field (2009); 104 + k, in this case 104 + 6 = 110. The amount of 118 respondents in this sample size are sufficient following this rule of thumb.

4.1.1 SOCIAL DEMOGRAPHIC CHARACTERISTICS

For analyzing the results and the influence of demographic features, different groups among the total group of respondents were defined. Whether the sample actually matches the Dutch employed labor force with regard to SMEs is difficult to assess. An attempt was made to make a comparison with the total working population in the Netherlands. The most notable differences are explained in more detail in Table 7.

Table 7 Social demographic characteristics of the sample compared to the total Dutch employed labor population

Characteristics	Specifics	Respondents (N = 118)	Respondents (%)	Dutch employed labor population (%) (CBS, 2018)
Gender	Man	71	60.2 %	53.6 %
	Women	47	39.8%	46.4 %
Age	≤ 25 years	13	11.0%	15.1%
	26 – 35 years	51	43.2%	20.8%
	36 – 45 years	27	22.9%	19.9%
	46 – 55 years	16	13.6%	24.2%
	> 55 years	11	9.3%	20.0%
Educational level*	VMBO	12	10.2%	15.6%
	MBO	33	28.0%	32.1%
	HAVO	4	3.4%	9.2%
	VWO	1	0.8%	
	HBO	48	40.7%	36.9%
	WO	20	16.9%	
Working context	Physical	53	44.9%	
	Sedentary	65	55.1%	

* Explanation educational Levels
VMBO   : Preparatory middle-level applied education
MBO   : Middle- level applied education, vocational training
HAVO   : Higher general continued education
VWO   : Preparatory scholarly educations
HBO   : Higher professional education at universities of applied sciences
WO   : Scientific education at universities

In this comparison the percentage of men and women within the sample differs from the total employed labor population in the Netherlands. Where the total employed labor force in the Netherlands consists of almost half of women and half of men, in the sample the distribution is 40% and 60%. There is also a difference between the distribution of employees among the age groups, the total population of younger employees (<46 years) in the sample is larger (77.1%) than in the total employed labor population in the Netherlands (56.0%). In addition, the sample contains a higher percentage of people with a higher educational level (57.6%) compared to the total employed labor population in the Netherlands (37.0%). The percentages of employees with lower educational levels are to some extent more similar. The comparison between the sample and the total employed labor population in the Netherlands in physically demanding or sedentary work is more difficult.

The classification in the sample was made on the basis of professions with physically demanding work (e.g. construction, painting, cleaning, physical therapy) in relation to sedentary work (e.g. strategic IT, service professions, office functions). Yet it is challenging to make a good distinction here and to compare it with the total employed labor population in the Netherlands. No reliable estimate could be made on the basis of figures found at the Centraal Bureau voor de Statistiek (CBS) (Eng; Central Bureau of Statistics) in the Netherlands (CBS, 2018). For example, there is no specific list of physical demanding occupations. Those are the reasons why it was decided not to make the

comparison with respect to the work context of the sample. But this demographic feature of this sample was used as a control variable for further analyses to investigate whether this feature influences the outcomes.

In conclusion the sample differs from the total employed population in the Netherlands. One reason for this might be that the employees surveyed are all employed within SMEs. The total employed labor population in the Netherlands also includes employees employed by large organizations. A second reason may be that this research involves seven different companies from a few different branches which doesn't cover all existing branches within the Netherlands. These are important factors to take in account when conclusions are drawn from this research.

Based on the final data file a number of different statistical tests are presented in the next section.

4.2 RELIABILTY ANALYSIS POSITIVE HEALTH QUESTIONNAIRE

To define the reliability of the positive health questionnaire the Cronbach's alpha reliability analysis was applied as described in the method section. High values refer to a high reliability, high values are above 0.80 (Field, 2009). Table 8 presents the descriptive results on the positive health questionnaire.

Table 8 Descriptive results positive health questionnaire (N = 118)

	Dimension	Items	Mean	sd	CA
1	Bodily functions	7	4.03	0.576	0.834
2	Mental functions & perceptions	7	4.12	0.481	0.827
3	Spiritual dimension	7	4.12	0.455	0.790
4	Quality of life	7	4.21	0.507	0.845
5	Social & societal participation	7	4.31	0.452	0.883
6	Daily functioning	7	4.20	0.424	0.731
	Positive health	49	4.18	0.415	0,952

The values of bodily functions, mental functions & perception, quality of life and social & societal participations all have high values on the Cronbach's alpha test. The remaining values of spiritual dimension and daily functioning, both above 0.70, can also be seen as reliable (Tilburg University, 2017; Field, 2009). The Cronbach's alpha if Item Deleted column shows no higher value in bodily functions, mental functions & perceptions and quality of life. None of the included items would increase the reliability if they were deleted, they all positively contribute to the reliability of the dimension (see Appendix 2). Three other dimensions showed slightly higher values for Cronbach's Alpha if Item Deleted, the spiritual dimension, social and societal participation and daily functioning

dimension (see Appendix 2). However, because of the already high values > .70 for reliability the choice was made to first perform the factor analyses before removing any items. In this way the total questionnaire could be further analyzed. Because no previous studies have been conducted in regard to this questionnaire, the reliability analysis cannot be compared to previous results. During the factor analyses the Cronbach's alpha was also again computed to measure reliability.

4.3 FACTOR ANALYSES POSITIVE HEALTH QUESTIONNAIRE

In order to be able to determine whether or not the questions used within the overarching concept of positive health display the overarching theme, a (confirmative) factor analysis was performed for the total questionnaire to see if six components are measured. As described in the method section the extraction method is the Principal Component Analysis, and the rotation method is Varimax with Kaiser Normalization. The factor analysis of the total concepts shows ten components and no clear distinction between the dimensions. This could mean that different dimensions are related to each other and may test a same overarching component among the respondents in this research (see Appendix 3). However as positive health is seen as a holistic concept it seems logical that dimensions correlate with each other.

In order to be able to determine whether or not the questions used in the different dimensions indeed display the overarching dimension theme, a (confirmative) factor analysis is performed for each dimension to see if one component, or more, are measured per dimension. The extraction method stayed the same. The rotated component matrixes are presented in Appendix 3. Table 9 presents the results of Cronbach's alpha and factor analysis.

Table 9 Cronbach's alpha and factor analysis positive health questionnaire (N = 118)

Dimension	Rotated Components	*CA*
Bodily functions	1	0.834
Mental functions & perception	1	0.827
Spiritual dimension	2	0.790
Quality of life	1	0.845
Social & societal participation	2	0.883
Daily functioning	2	0.731

The factor analysis shows three dimensions measuring two components. These three dimensions were further investigated in the next subsections to find out which components are being measured and whether this can be explained. Based on the Scree Plot, Eigenvalues (see Appendix 3) and by analyzing the content of the items loading on the components (Table 10) an attempt was made to identify what the overarching constructs might be.

Table 10 Factor analyses of three dimensions with multiple components (N = 118)

Subscales	Components					
	1	2	3	4	5	6
Spiritual dimension						
5 I accept life as it comes	.822					
2 In the morning I'm looking forward to the day	.813	.150				
1 I have a meaningful life	.746	.144				
6 I am grateful for what life offers me	.715	.346				
4 I have confidence in my own future	.529	.518				
3 I have ideals that I would like to achieve	.177	.819				
7 I want to continue learning my whole life		.812				
Social & societal participation						
3 I have people with whom a can do nice things			.922	.121		
5 I feel like I fit in			.859	.311		
4 I have people who support me if needed			.850	.233		
1 I have good contact with other people			.836	.228		
7 I am interested in what is happening in society				.894		
6 I have work or other activities that I find useful			.449	.654		
2 Other people take me seriously			.499	.581		
Daily functioning						
2 I know what I can and cannot do					.853	.153
1 I can take care of myself. For example; washing, dressing, grocery shopping, cooking					.781	
5 I can handle well the money I get each month					.678	.379
4 I can properly plan what to do in a day					.421	.346
7 I know how to get help from official agencies, if necessary					-.153	.862
3 I know how to take care of my health					.440	.640
6 I can work or do voluntary work					.406	.573

4.3.1 SPIRITUAL DIMENSION

The first component is likely to deal with meaningfulness regarding the current situation and short term. The second component seems to include the future and long term situations. Again Cronbach's alpha has been calculated and presented a slightly higher score of 0.807 when question 4, 3 and 7 were removed. It has been decided to include both components in the analyses; 1 because the eigenvalue of the second component is just above 1. 2 because the outcome of the Cronbach's alpha does not increase enormously, 3 because the earlier outcome shows that the total dimension is reliable and 4 because within the concept of positive health and prevention, it is precisely the total meaning (both present and future) that fits.

4.3.2 SOCIAL AND SOCIETAL PARTICIPATION

The difference between the two components mostly refers to one question, namely question 7. This last question loads on the component 'society', while the other questions also load on the component 'personal relationships in the immediate vicinity'. For component one Cronbach's alpha

has been calculated again and presented a higher score of 0.904. The repetition of the factor analysis on the remaining six questions shows only one component. The small difference in outcome is not a direct reason to leave question 7 out of the analyses, thereby the Eigenvalue of component 2 is just above 1. Based on the total concept of positive health the decision has been made to leave this question in this dimension for further analyses.

4.3.3 DAILY FUNCTIONING

In this dimension two components are extracted. The questions 2, 1 and 5 load on the first component an overarching theme individual capabilities. Questions 4, 3 and 6 load on both components, question 7 only loads on the second component which relates to external influences and even has a negative load on the first component. Again Cronbach's alpha has been calculated and presented a higher score of 0.818 when question 4, 7, 3 and 6 are removed. The repetition of the factor analysis on the questions 2, 1 and 5 now shows one component. When question 4 is added to this analysis, Cronbach's alpha gives an even higher score 0.867 and the factor analysis shows one overarching component. Because in this case there is an increase in the reliability score of 0.136 when questions are removed from the dimension, it was decided to leave question 7, 3 and 6 out of the analyses and create a new variable for the dimension daily functioning.

4.4 RELIABLITY AND FACTOR ANALYSIS SUSTAINABLE EMPLOYABILITY

The value of Cronbach's alpha is high for both dimensions within the overarching construct of sustainable employability (see Appendix 2 and Table 11). Because the outcome could differ between these two different dimensions an additional factor and reliability analysis is performed. The reliability of the total amount of twelve questions is 0.862, the rotated component matrix presents two components. These two components represent exactly the two dimensions which had been established in advance (see Appendix 3).

Table 11 Descriptive results sustainable employability questionnaire (N = 118) and factor analyses

	Dimension	*Items*	*Mean*	*sd*	*CA*	Rotated Components
1	Employability	6	4.14	0.556	0.854	1
2	Employability responsibility	6	3.94	0.541	0.842	1
	Sustainable Employability	12	4.04	0.459	0.862	2

In conclusion, only the daily functioning dimension from the positive health questionnaire was adjusted based on the factor analysis and the consequences on the reliability of this dimension. The other parts of the questionnaire and outcomes were included in further analyses. In the next chapter, the relationship between positive health including its dimensions and sustainable employability including the two most important components in this study will be further analyzed.

4.5 HYPOTHESES TESTING

4.5.1 CORRELATION COEFFICIENT

As stated in the method section the correlation coefficients between both constructs are analyzed to investigate whether there is a relationship between them (see Table 12) and how strong this relationship concerning positive health and sustainable employability is.

Table 12 Pearson's correlation coefficient (N = 118)

	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Sustainable employability	4.04	0.46	1									
2. Sustainability - adaptability	4.14	0.56	.841**	1								
3. Responsibility	3.94	0.54	.831**	.398**	1							
4. Positive health	4.18	0.42	.678**	.679**	.452**	1						
5. Bodily functions	4.03	0.58	.617**	.619**	.409**	.864**	1					
6. Mental functions	4.12	0.48	.576**	.602**	.358**	.873**	.721**	1				
7. Spiritual dimension	4.12	0.45	.621**	.578**	.458**	.891**	.710**	.746**	1			
8. Quality of life	4.21	0.51	.578**	.565**	.399**	.900**	.692**	.786**	.784**	1		
9. Social and societal participation	4.31	0.45	.480**	.493**	.307**	.790**	.594**	.572**	.654**	.657**	1	
10. Daily functioning	4.20	0.42	.529**	.555**	.327**	.647**	.489**	.461**	.530**	.532**	.466**	1

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

In this case medium ($r \geq .3$) to large ($r \geq .5$) significant *(p = <.001)* correlations are found (Field, 2009, p. 170) between all variables. A large significant correlation is found between sustainable employability and the two components, sustainability – adaptability and responsibility. This was expected since the two components were defined as a part of sustainable employability in the literature review. Large correlation coefficients are also found between positive health and the different dimensions of positive health, this was also expected since these dimensions are defined as a part of the total positive health model by Huber et al. (Huber, et al., 2016).

Positive health has a large significant correlation with sustainable employability (*r = .678, p <.001*). The dimension bodily functions was the strongest related dimension to 1. sustainable employability total (*r = .617, p < .001*) and 2 the sustainability – adaptability component (*r = . 619, p < .001*). The spiritual dimension has the largest significant correlation with the responsibility component of sustainable employability (*r = .458, p < .001*)

Notable is the slightly lower correlation coefficient between social and societal participation and the responsibility component of sustainable employability (*r = .307, p = <.001*) and the dimension daily functioning and the responsibility component of sustainable employability (*r = .327, p = < .001*). Additionally, all dimensions of positive health and positive health as a total construct show a lower

correlation coefficient with the responsibility component of sustainable employability. The correlation coefficient between the sustainability – adaptability and responsibility dimension is also lower ($r = .398$, $p = < .001$). The correlation coefficient between responsibility and the total construct of sustainable employability is high ($r = .831$, $p = < .001$).

In conclusion the correlation analysis showed correlations between all variables of positive health and sustainable employability. Based on this finding, it can be analyzed whether positive health outcomes influence sustainable employability. In regression analysis, a relationship between a dependent variable and one or more independent variables is assumed. The hypotheses are tested under control of demographic variables and among a group of SME employees in the Netherlands.

4.5.2 POSITIVE HEALTH AND SUSTAINABLE EMPLOYABILITY

Hypothesis 1. The aggregate measure of positive health is positively related to sustainable employability.

Multiple regression analyses were used to study the impact of positive health on sustainable employability, under control of demographic features. The Table 13, presents the demographic features as control variables which are included in all of the regression analyses. All standardized coefficients are presented, none of them seems to be significant. According to these figures, it is likely that the control variables do not explain a significant percentage of the variance of the sustainable employability in these models.

Table 13, Model II, presents the observed significant positive relationship between positive health and sustainable employability *($\beta = .701$, $p = .000$)*. Hypothesis 1 is accepted. This model significantly predicts the outcome of sustainable employability *$F(5, 112) = 20.247$, $p = .000$, $R^2 = .475$, adjusted $R^2 = .451$*. The significant added proportion of variance of sustainable employability explained by positive health is 47% ($\Delta R^2 = .470$). The adjusted proportion of variance explained by the total model is 45.1% (*adjusted $R^2 = .451$*).

4.5.3 THE SIX DIMENSIONS OF POSITIVE HEALTH AND SUSTAINABLE EMPLOYABILITY

Hypothesis 2: The six dimensions covered by the positive health model are collectively positively related to sustainable employability.

Hypothesis 3: Within the model of positive health the dimensions bodily functions and mental health have the strongest positive influence on sustainable employability.

The next multiple regression analysis was used to study the relationships between the six individual dimensions of positive health and sustainable employability, under control of demographic features. Table 13, Model III, presents the outcomes of the analysis and the observed significant positive relationship between bodily functions and sustainable employability (β = .292, p = .011) and daily functioning and sustainable employability (β = .202, p = .021) within the model. This model significantly predicts sustainable employability $F(10, 107)$ = 10.754, p = .000, R^2 = .501, adjusted R^2 = .455. The significant added proportion of variance of sustainable employability explained by the six dimensions is 49.6 % (ΔR^2 = .496). The adjusted proportion of variance explained by the total model is 45.5% (*adjusted R^2 = .455*).

Hypothesis 2 and 3 cannot be adopted, the model is significant, but when all variables are included and held constant, the regression analysis demonstrated that only the dimensions bodily functions and daily functioning seem to have a significant impact on sustainable employability.

Table 13 Regression analyses sustainable employability

	Sustainable employability		
	Model I	Model II	Model III
	β	β	β
Control variables			
Educational level	.020	-.114	-.078
Working context	.013	.111	.115
Age	.029	.020	-.002
Gender	.054	.054	.052
Independent variables			
Positive Health		.701***	
Bodily functions			.292*
Mental functions and perception			.064
Spiritual dimension			.236
Quality of life			.042
Social and societal participation			.014
Daily functioning			.202*
R^2	.005	.475***	.501***
ΔR^2	.005	.470***	.496***
F - statistic	.141	20.247***	10.754***
Adjusted R^2	-.30	.451***	.455***
n	118	118	118
* p <.05, ** p <.01, *** p < .001			

Because sustainable employability in this research included two components, the same analyses were conducted to study the relationships between positive health, its dimensions and the two different sustainable employability components. The following subsections will study the relationship of positive health and its dimensions to sustainably – adaptability (SA).

4.5.4 POSITIVE HEALTH AND SUSTAINABILITY – ADAPTABILITY

Hypotheses 4: The aggregate measure of positive health is positively related to sustainability – adaptability (SA)

The Pearson correlation analysis showed that positive health and sustainability - adaptability were significant positively related to each other. This could mean that an alteration in one variable is associated to an alteration in the other. Multiple regression analyses were used to further investigate the relationship between positive health and sustainability – adaptability, under control of demographic features. Table 14, presents the demographic features as control variables which are included in all of the regression analyses. All standardized coefficients are presented, but none of them seems to be significant. According to these figures, it is likely that the control variables (demographic factors) do not explain a significant percentage of the variance of sustainability - adaptability.

Table 14, Model II, presents the observed significant positive relationship between positive health and SA (β = .696, p = .000). Hypothesis 4 is accepted. This model significantly predicts the outcome of sustainability – adaptability *F(5 , 112) = 20.277, p = .000, R^2 = .475, adjusted R^2 = .452*. The significant added proportion of variance of SA explained by positive health is 46,2% (ΔR^2 = .462). The adjusted proportion of variance explained by the total model is 45.2% (R^2 = .452).

4.5.5 THE SIX DIMENSIONS AND SUSTAINABILITY – ADAPTABILITY

Hypothesis 5: The six dimensions covered by the positive health concept are collectively positively related to sustainability – adaptability (SA)

Hypothesis 6: Within the model of positive health the dimensions bodily functions and mental health have the strongest positive influence on sustainability – adaptability (SA)

The next multiple regression analyses were used to study the relationships between the six dimensions of positive health and SA, under control of demographic features. Table 14, Model III, presents the outcomes of the analysis and the observed significant positive relationship between bodily functions and SA ($\beta = .302, p = .008$) and daily functioning and SA ($\beta = .278, p = .001$).

This model significantly predict sustainability – adaptability $F(10 , 107) = 11.357, p = .000, R^2 = .515, adjusted R^2 = .470$. The significant added proportion of variance of SA explained by the dimensions of positive health is 50.2% ($\Delta R^2 = .502$).). The adjusted significant proportion of variance explained by the total model is 47.0% (*adjusted R^2 = .470*).

Hypothesis 5 and 6 cannot be adopted, the model is significant, but when all variables are included and held constant, the regression analysis demonstrated that only the dimensions bodily functions and daily functioning seem to have a significant impact on sustainability – adaptability.

Table 14 Regression analyses sustainability – adaptability

	Sustainability – adaptability		
	Model I	Model II	Model III
	β	β	β
Control variables			
Educational level	.097	-.036	.031
Working context	.033	.130	.117
Age	-.012	-.020	-.061
Gender	.041	.041	.031
Independent variables			
Positive health		.696***	
Bodily functions			.302**
Mental functions and perception			.198
Spiritual dimension			.054
Quality of life			-.021
Social and societal participation			.058
Daily functioning			.278**
R^2	.013	.475***	.515***
ΔR^2	.013	.462***	.502***
Adjusted R^2	-.022	.452***	.470***
F statistic	.362	20.277***	11.357***
n	118	188	118
* p <.05, ** p <.01, *** p < .001			

4.5.6 POSITIVE HEALTH AND RESPONSIBILITY

Hypothesis 7: The aggregate measure of positive health is positively related to employees'
responsibility

The Pearson correlation analysis showed that positive health and responsibility were significant positively related to each other. This could mean that an alteration in one variable is associated to an alteration in the other. Multiple regression analyses were used to study the relationship between positive health and responsibility, under control of demographic features. Table 15 presents the demographic features as control variables which are included in all of the regression analyses. All standardized coefficients are presented, but none of them seems to be significant. According to these figures, it is likely that the control variables do not explain a significant percentage of the variance of responsibility in these models.

Table 15, Model II, presents the observed significant positive relationship between positive health and responsibility ($\beta = .474, p = .000$). Hypothesis 7 is accepted. This model significantly predicts the outcome of responsibility $F(5, 112) = 6.311, p = .000, R^2 = .220$, adjusted $R^2 = .185$. The significant proportion of added variance of the responsibility dimension explained by positive health is 21.5 %. ($\Delta R^2 = .215$). The adjusted proportion of variance explained by the total model is 18,5 % (*adjusted $R^2 = .185$*)

4.5.7 THE SIX DIMENSIONS AND EMPLOYEES' RESPONSIBILITY

Hypothesis 8: The six dimensions covered by the positive health model are collectively positively
related to the employees' responsibility.

Hypothesis 9: Within the model of positive health the dimensions bodily functions and mental health
have the strongest positive influence on employees' responsibility

The next multiple regression analyses were used to study the relationships between the six dimensions of positive health and responsibility, under control of demographic features. Table 15, Model III, presents the outcomes of the analysis and the observed significant positive relationship between the spiritual dimension and responsibility ($\beta = .345, p = .031$). This model significantly predict responsibility $F(10, 107) = 3.561, p = .000, R^2 = .250$, adjusted $R^2 = .180$. The significant added proportion of variance of the responsibility dimension explained by the six dimensions is 24.4 % ($\Delta R^2 = .244$). The adjusted significant proportion of variance of responsibility explained by the total model is 18.0% (*adjusted $R^2 = .180$*).

Hypothesis 8 and 9 cannot be adopted, the model is significant, but when all variables are included and held constant, the regression analysis demonstrated that only the spiritual dimension seems to have a significant impact on employees' responsibility.

Table 15 Regression analyses responsibility

	Responsibility		
	Model I	Model II	Model III
	β	β	β
Control variables			
Educational level	-.066	-.156	-.164
Working context	-.012	.054	.075
Age	.061	.055	.058
Gender	.050	.050	.056
Independent variables			
Positive health		.474***	
Bodily functions			.185
Mental functions and perception			-.094
Spiritual dimension			.345*
Quality of life			.092
Social and societal participation			-.035
Daily functioning			.056
R^2	.005	.220***	.250***
ΔR^2	.005	.215***	.244***
F statistic	.149	6.311***	3.561***
Adjusted R^2	-.30	.185***	.180***
n	118	188	118
* p <.05, ** p <.01, *** p < .001			

CHAPTER 5 : DISCUSSION

This research investigated the relationship between positive health and sustainable employability in Dutch SMEs. The theoretical part of this research found evidence that health, based on the definition positive health approach, can be related to sustainable employability of employees. However, when health is used as a basic condition of sustainable employability, according to the theoretical part of this study, the focus needs to be on creating or maintaining individual capabilities, the presence of health, sustainability, adaptability and responsibility. The positive health model of Huber et al. (2016) was used to indicate the presence of health and tot test the relationship with sustainability, adaptability and responsibility. A first discussion may lie in the fact that no previous studies were found which measure the presence of health with this positive health model. A second discussion point lies in the fact that this research did not study the relationship between health or positive health and the influence on other employability factors which are investigated in previous research. These factors are for example working values (van der Klink, et al., 2011), productivity (Kraan & Sanders, 2016), learning abilities and self-development (van der Heijden, Gorgievski, & De Lange, 2016).

In this research a sample of SME's was used, although it seemed to be a well amount of respondents it did not reflect all industries or the whole working population in the Netherlands. This sample can therefore not be seen as a complete reflection of all companies in the Netherlands. The explorative nature of this study makes that the results based on this sample should be interpreted with caution, they are not by definition generalizable to the entire labor market.

The sustainable employability questionnaire used in this research was based on already existing questionnaires and focused on the health related components, sustainability, adaptability and responsibility. By using a valid existing questionnaire, the variables in responsibility were well operationalized. The questions in the sustainability - adaptability were merged on the basis of agreements found in literature and various questionnaires. Despite the results of the reliability study and the factor analysis, it is therefore possible to discuss whether this component was correctly queried. The positive health discussion tool, converted into a questionnaire, was found to be applicable among employees. During the empirical part of this research and after analyzing the total concept of positive health, ten different components appeared, instead of six separate dimensions. This means that different dimensions created in the model are related to each other or measure multiple overarching components. This can be explained from theory, as various authors indicate that health should be a holistic concept and concerns multiple themes which influence each other, for example physical, mental and social health (Naidoo & Wills, 2016; WHO, 1946; Abma, et al., 2016;

Burkert, Raml, & Beier, 2015). The individual dimensions of positive health appeared to be reliable and valid, however, multiple components were found during factor analyses in three dimensions. It can be discussed whether these dimensions should or should not have been (further) adjusted. In this study, based on Cronbach's alpha and multiple factor analyses, it was decided to adjust the dimension daily functioning. Future research will have to show whether daily functioning consist of several (important) components. This may be important since daily functioning can be related to sustainable employability according to this study, as the next sections will describe.

The correlation analysis demonstrated that the positive health model and the six dimensions were correlated with sustainable employability and its components. However in regression analyses only the dimensions bodily functioning, daily functioning and the spiritual dimensions were found to have a significant relationship with sustainable employability and its components. All regression analyses in this study were carried out under control of demographic variables. These all had no significant influence on the outcome of sustainable employability or its components. This was surprising as several authors found influence of demographic factors on sustainable employability (Oyen van, Deboosere, & Lorant, 2011; van der Klink, et al., 2011; Ilmarinen J. E., 2005; Bossink & Wognum, 2012; Kraan & Sanders, 2016; Lange & Wijk, 2012). It is possible that the control variables aimed at the components of sustainable employability in this study indeed have no influence. That could mean that they do have an influence on other components of sustainable employability, such as the previously mentioned working values (van der Klink, et al., 2011), productivity (Kraan & Sanders, 2016), learning abilities and self-development (van der Heijden, Gorgievski, & De Lange, 2016).

It was expected that all dimensions of positive health would have a positive significant relationship with sustainable employability. Burkert et al. (2015) found relationships, although small relationships, between their work-related outcomes and several positive health indicators. The analyses in this current study revealed two dimensions which had a significant positive relationship with sustainable employability. Namely bodily functions and daily functioning. These results were unexpected, mainly because 'only' two dimensions remained, but especially because daily functioning seemed to be very important in the relationship with sustainable employability. Bodily functions was, in the research by Huber et al. (2016), found to be the most valuable dimension to represent health. In this current research daily functioning has an almost equal influence on sustainable employability as the dimension bodily functions. Daily functioning has underlying aspects of daily activities, planning and how to handle financial means. Together with bodily functions which comprehends fitness, physical condition and functioning these points could be of interest for an employer to address in sustainability of employees. It may be that work-life balance play an important role, but this should be further investigated in future research.

It was also expected that all dimensions would have a significant positive relationship with the component sustainability and adaptability because of the influence of total health on sustainability according to van der Klink et al. (van der Klink, et al., 2016). The expectation was that physical and mental health would be of additional importance in adaptability. Bossink & Wognum (2012) and van de Vijfeijke (2013) presented a previously found relationship in their research. The possibilities for physical functioning are emphasized in the first dimension and cognitive functioning and self-management are questioned in the mental dimension. However, the regression analysis in this current study showed that the dimensions bodily functions and daily functioning had a significant positive relationship with sustainability and adaptability. Sustainability and adaptability in this research was queried by questions regarding being able to meet the demands of work (work ability), energy levels, the balance between work and private life and the expectation to be able to continue working for the next 3-5 years. According to this study, these aspects are significantly influenced by fitness, physical condition and functioning, daily activities, being able to make plans and how to handle financial means. In addition to the attention paid to physical functioning, according to these results, it is important to pay attention to what happens in life beyond work. This can be an important insight for employers to keep employability sustainable and to stimulate adaptability of employees.

Based on the positive health model which in total emphasizes self-management and the study of Abma et al (Abma, et al., 2016), it was expected for responsibility in sustainable employability, that all dimensions of the positive health model would have a positive significant relationship with the responsibility of the employee. Because Dolbier et al. (2001) found a relationship between physical and psychological health and self-leadership, bodily functions and mental functioning were expected to have the most impact on employees' responsibility. The analysis in this study showed a completely different result. The spiritual dimension was the only dimension which had a significant positive relationship with sustainable employability. This dimension describes sense of life, meaningfulness in life, striving for ideals, future prospects and acceptance. In conclusion, it appears that for employees the value of work in life aimed at the future and achieving personal goals is important in taking responsibility. This corresponds to what van der Klink et al. (van der Klink, et al., 2016) found, although they approached it from a different point of view. Even though this dimension explained a small percentage of the variance, it can be an important insight for organizations to support employees in taking responsibility for their own sustainable employability. When employees are challenged to think about what they actually find important in life, and work seems to be a part of this, this may have a positive influence in taking responsibility in creating sustainable employability.

In conclusion, from a positive health point of view of, increasing or maintaining sustainable employability should involve a consideration of different health determinants and should not be restricted to physical or mental health. Additionally, the sustainable employability of employees can be seen as the responsibility of both, employers and employees. Outputs of positive health may be used for motivational purposes or even organizational risk profiles. The latter was not a priority in this study, but could be of interest to organizations. Interventions aimed at increasing the presence of (positive) health should extend to daily life and should not only be limited to working conditions or workplaces. According to Harrison & Dawson (2015) many companies have developed health and well-being strategies. It encourages healthy behaviors and promote physical activities, which endorses the importance of bodily functions and the spiritual dimension of the positive health model. When health is addressed, more stakeholders could be involved including authorities, insurance companies and other healthcare practitioners like educated occupational therapists, physiotherapists, doctors and nurses, and other occupational health professionals as Harrison & Dawson (2015) state. When personnel policy contributes to promoting health and preventing or reducing the impact of chronic diseases it may demonstrate a qualitative and quantitative return on investments (Harrison & Dawson, 2015).

CHAPTER 6 : CONCLUSION AND RECOMMENDATIONS

Central in this chapter stands answering the main research question and sub questions. To answer the theoretical research questions a literature review was performed on the models and approaches of health and employability. From the literature review a conceptual model was drawn to address the empirical research questions.

The overall research question was: *What is the relationship between health and sustainable employability and to what extent is a positive health model an addition to current insights and measurements of sustainable employability?*

This leads to the following theoretical research questions:

1. To what extent are health and sustainable employability related?
2. To what extent is a positive health model suitable within a concept of sustainable employability when compared with the biomedical model of health?

This leads to the following empirical research questions:

3. To what extent is the positive health framework, applied as a questionnaire, reliable and valid when tested among SME employees?
4. To what extent is the positive health framework and its dimensions, applied as a questionnaire, related to sustainable employability?

The literature review showed that health and sustainable employability are related when both focus on (creating) possibilities for current and future individual labor participation. When sustainable employability is approached from a health point of view, it demands sustainability, adaptability and employees' responsibility. A positive health concept can be an addition to current approaches and definitions of sustainable employability and health. Especially when the presence of health, and not the absence of diseases, is seen as a resource to be able to work, even when health problems are present or arise, and when sustainability, adaptability and a employees' responsibility are included as pillars of sustainable employability.

The empirical part of this study provided evidence of the expected relationship between the positive health discussion tool and sustainable employability questions with sustainability, adaptability and responsibility as pillars. Results of the multiple regression identified that only three of dimensions predict sustainable employability or its components, namely bodily functions, daily functioning and the spiritual dimension. The results also suggested that demographic variables did not have an

influence on sustainable employability outcomes when it includes sustainability, adaptability and responsibility.

From a practical point of view, these results can provide useful information to companies when personnel policy is aimed at increasing or maintaining sustainable employability with a focus on health. The positive health model and questionnaire can be used as a measurement for the presence of health in sustainable employability. It is reasonable to hypothesize that interventions aimed at the three dimensions of positive health could have an influence on sustainable employability outcomes. The findings suggest that interventions aimed at fitness, physical condition and functioning, daily activities, planning and handling financial means, could be of interest for an employer to address in sustainable employability policy. Positive health used as an instruments might be helpful for starting a dialogue between the employee and employer when sustainability is seen as the responsibility of both. When dimensions of positive health are going to be addressed, multiple stakeholders could be involved in promoting (positive) health and preventing diseases to positively influence the sustainable employability of employees.

6.1 RECOMMENDATIONS

Future research will have to show whether the different dimensions of positive health can be answered with fewer questions or even other questions. The positive health questionnaire needs to be further examined and perhaps adjusted in order to subsequently be part of a valid and reliable sustainable employability questionnaire. When the objective is to use this positive health questionnaire in a comprehensive questionnaire for sustainable employability in the total employed labor population in the Netherlands, follow-up research is needed to extensively investigate the relationships found and to produce generalizable results. It would be preferred to investigate positive health within a context of all components of sustainable employability in a sample of all kinds of organizations which reflect the entire labor market in the Netherlands.

This study focused on the possibilities of employees and not on biomedical figures regarding the health of employees or objective data from organizations. In this study subjective scores of positive health and sustainable employability were used. Future research could include other (objective) variables or outcomes. Control variables relating to biomedical data were deliberately omitted in this study. However, in future research, these variables could be added since van den Berg et al. (2009) described the influence of, for example, physical activity, muscle strength and overweight on employability. In addition, lifestyle was not included in this study. According to Gould et al. (2008, p. 21), this may have an influence on workability and thus on sustainable employability. The spiritual dimension (sense of life, meaningfulness, striving for ideals, future prospects and acceptance) seemed

to have a relationship with responsibility according to this research. Meaningfulness in work is influenced by individual motivations, attitude and functioning (van der Heijde & van der Heijden, 2006; van der Klink, et al., 2016). These individual characteristics could also be included in future research. Perhaps both, positive health and responsibility or total sustainable employability, are influenced by specific motivations, attitude and behavioral change.

In addition to the fact that objective measurements of the individuals were not included in this study, no objective figures were taken from organizations. For example productivity loss, absenteeism or presentism. This could be of additional value in future research since, for example, Bubonya et al. (2017) described an influence of mental health on productivity, absenteeism and presentism. This study included total presence of positive health in organizations. The focus was not on individual health or on the creation of a cut-off point with which, for example, risk profiles for companies can be created. Adding objective measurements could be important input to create individual or organizational risk profiles or to map the costs of an organization related to poorer health and sustainable employability.

Finally, it is recommended to conduct a test-retest study to confirm validity of the positive health questionnaire. In future research it is also possible to include interventions aimed at health in order to measure the effect on positive health and sustainable employability. The expectation is that interventions will affect both, but this must be evident from future research.

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APPENDIX 1 FREQUENCY DISTRIBUTIONS

Frequency distribution positive health

Every dimension of positive health is queried through seven questions.

Bodily functions

	Question	N	Mean	Median	sd
1	I feel healthy	118	4.13	4.00	0.70
2	I feel fit	118	3.86	4.00	0.84
3	I have no complaints and pain	118	3.90	4.00	0.96
4	I sleep well	118	3.91	4.00	0.95
5	I eat well	118	4.17	4.00	0.68
6	I recover quickly after exertion. For example after exercise	118	3.97	4.00	0.77
7	I can move easily. For example, climbing stairs, walking or cycling.	118	4.30	4.00	0.75
	Bodily functions	**118**	**4.03**	**4.00**	**0.58**

Histogram
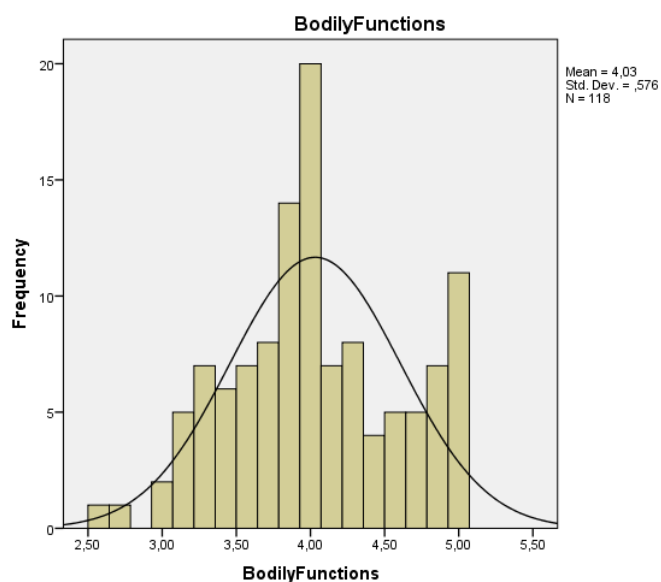
Mental functions & perceptions

	Question	N	Mean	Median	sd
1	I can remember things well	118	3.93	4.00	0.81
2	I can concentrate well	118	3.98	4.00	0.69
3	I can see, hear, talk and read well	118	4.31	4.00	0.62
4	I feel cheerful	118	4.19	4.00	0.66
5	I accept myself as I am	118	4.20	4.00	0.76
6	I'm looking for solutions to change difficult situations	118	4.12	4.00	0.63
7	I have control over my life	118	4.09	4.00	0.61
	Mental functions & perceptions	**118**	**4.12**	**4.00**	**0.48**

Histogram
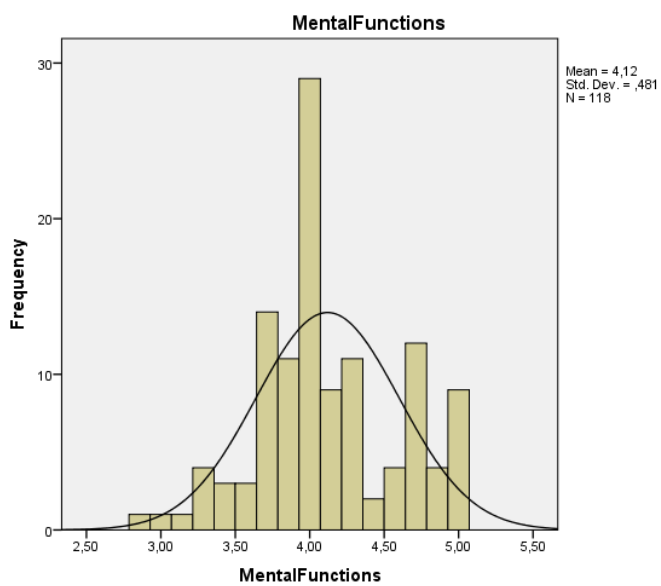
Spiritual dimension

	Question	N	Mean	Median	sd
1	I have a meaningful life	118	4.30	4.00	0.57
2	In the morning I'm looking forward to the day	118	4.04	4.00	0.70
3	I have ideals that I would like to achieve	118	3.99	4.00	0.81
4	I have confidence in my own future	118	4.25	4.00	0.64
5	I accept life as it comes	118	4.19	4.00	0.68
6	I am grateful for what life offers me	118	4.34	4.00	0.63
7	I want to continue learning my whole life	118	4.28	4.00	0.73
	Spiritual dimension	**118**	**4.12**	**4.14**	**0.45**

Histogram

SpiritualDimension

Mean = 4,20
Std. Dev. = ,455
N = 118
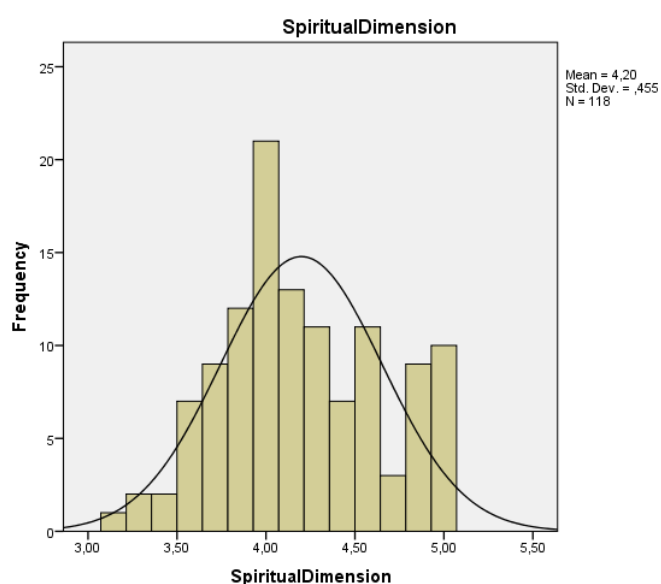
Quality of life

	Question	N	Mean	Median	sd
1	I enjoy my life	118	4.35	4.00	0.58
2	I'm happy	118	4.25	4.00	0.65
3	I feel good	118	4.10	4.00	0.70
4	I experience balance in my life	118	3.97	4.00	0.78
5	I feel safe	118	4.30	4.00	0.63
6	I am satisfied with where I live and with whom	118	4.36	5.00	0.78
7	I have enough money to pay my bills	118	4.14	4.00	0.78
	Quality of life	**118**	**4.21**	**4.14**	**0.51**

Histogram

QualityOfLife

Mean = 4,21
Std. Dev. = ,507
N = 118
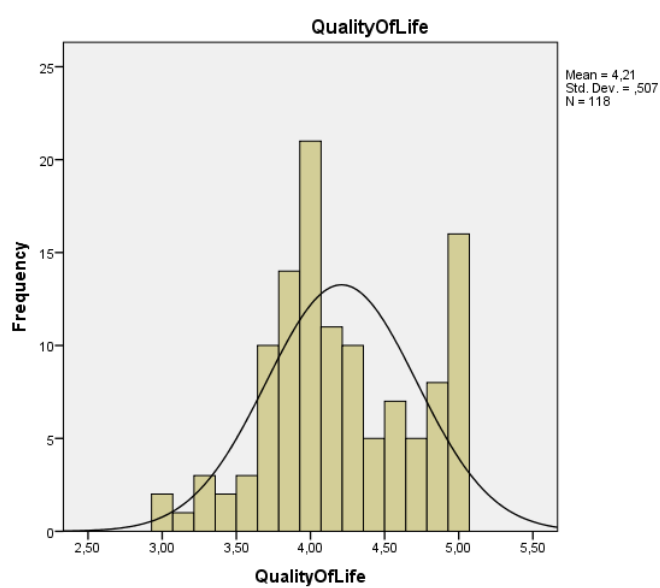
Social & societal participation

	Question	N	Mean	Median	sd
1	I have good contact with other people	118	4.30	4.00	0.62
2	Other people take me seriously	118	4.23	4.00	0.55
3	I have people with whom a can do fun stuff	118	4.36	4.00	0.63
4	I have people who support me if needed	118	4.41	4.00	0.57
5	I feel like I fit in	118	4.31	4.00	0.59
6	I have work or other activities that I find useful	118	4.41	4.00	0.54
7	I am interested in what is happening in society	118	4.14	4.00	0.61
	Social & societal participation	**118**	**4.31**	**4.14**	**0.45**

Histogram

SocialParticipation

Mean = 4,31
Std. Dev. = ,452
N = 118
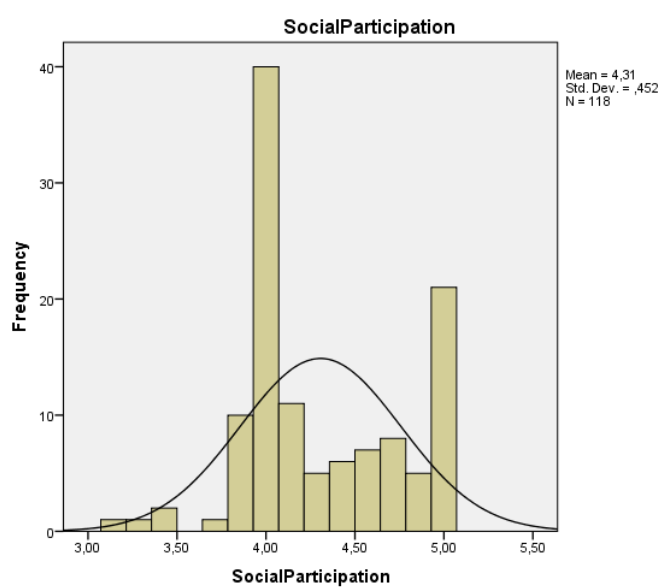
Daily functioning

	Question	N	Mean	Median	sd
1	I can take care of myself. For example; washing, dressing, grocery shopping, cooking	118	4.53	5.00	0.53
2	I know what I can and can't do	118	4.33	4.00	0.54
3	I know how to take care of my health	118	4.31	4.00	0.56
4	I can properly plan what to do in a day	118	3.89	4.00	0.90
5	I can handle well the money I get each month	118	4.30	4.00	0.62
6	I can work or do voluntary work	118	4.30	4.00	0.67
7	I know how to get help from official agencies, if necessary	118	3.77	4.00	0.87
	Daily functioning	**118**	**4.20**	**4.07**	**0.42**

Histogram

DailyFunctioning

Mean = 4,20
Std. Dev. = ,424
N = 118

Positive health Total

PosHealth

Mean = 4,18
Std. Dev. = ,415
N = 118
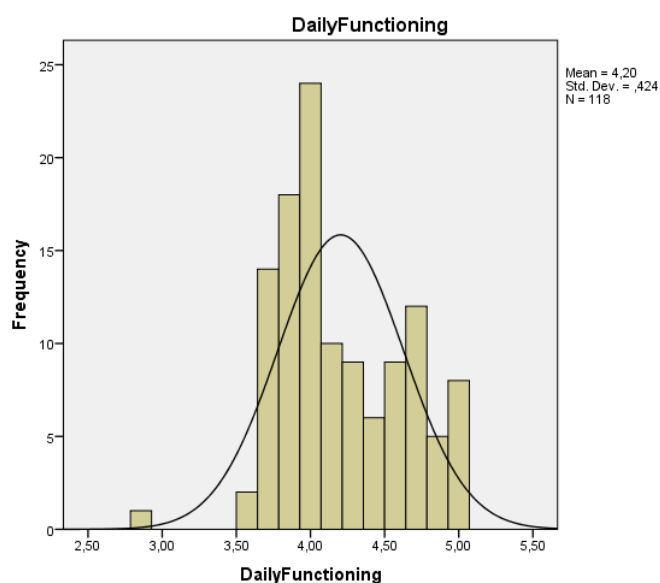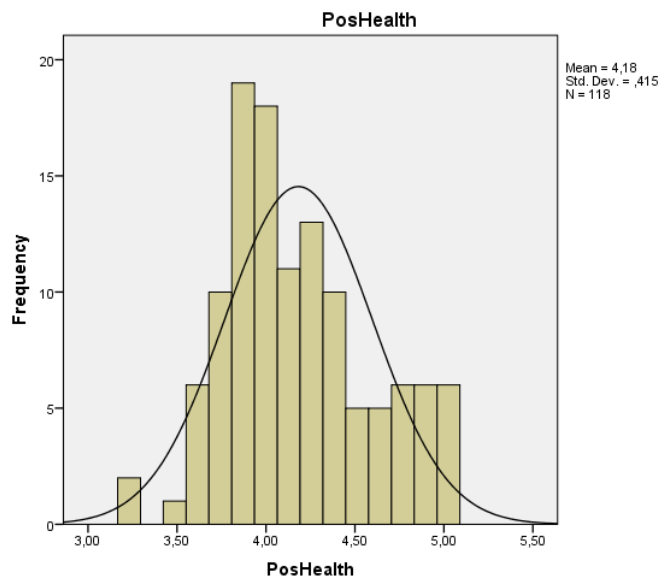
Frequency distribution employability

	Question	N	Mean	Median	sd
1	I can easily meet the physical requirements of my work	118	4.35	4.00	0.67
2	I can easily meet the mental requirements of my work	118	4.14	4.00	0.67
3	I can easily meet the emotional requirements of my work	118	4.29	4.00	0.57
4	At the end of the working day, I still have energy	118	3.69	4.00	0.92
5	I can combine my work well with my private life	118	4.05	4.00	0.77
6	I expect to be still able to do my job in 3-5 years	118	4.31	4.00	0.73
	Employability sustainability - adaptability	**118**	**4.14**	**4.00**	**0.56**

Histogram

Employability

Mean = 4,14
Std. Dev. = ,556
N = 118
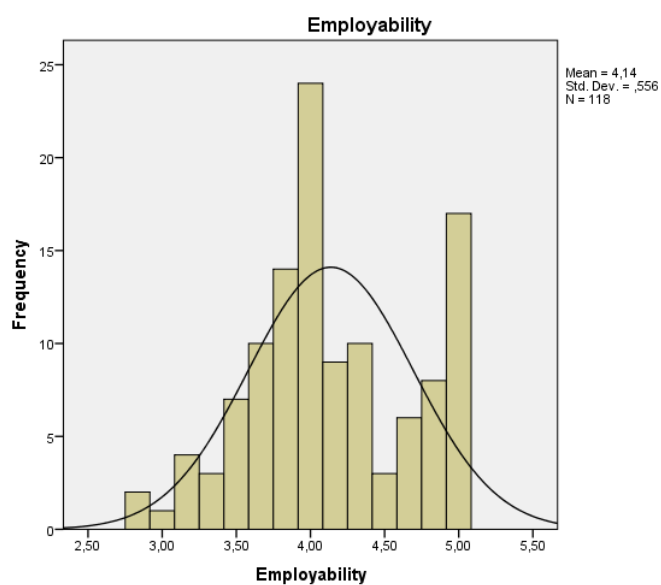
Frequency distribution employability responsibility

	Question	N	Mean	Median	sd
1	I am conscious about my employability	118	4.04	4.00	0.70
2	I think it's important to keep my employability up to date	118	4.14	4.00	0.59
3	I think about how my work could change over the next 5 years	118	3.81	4.00	0.90
4	I know how to improve my employability	118	3.72	4.00	0.74
5	I'm well able to work on my employability	118	3.83	4.00	0.72
6	I think I'm responsible for my own employability	118	4.08	4.00	0.67
	Employability responsibility	**118**	**3.94**	**4.00**	**0.54**

Histogram
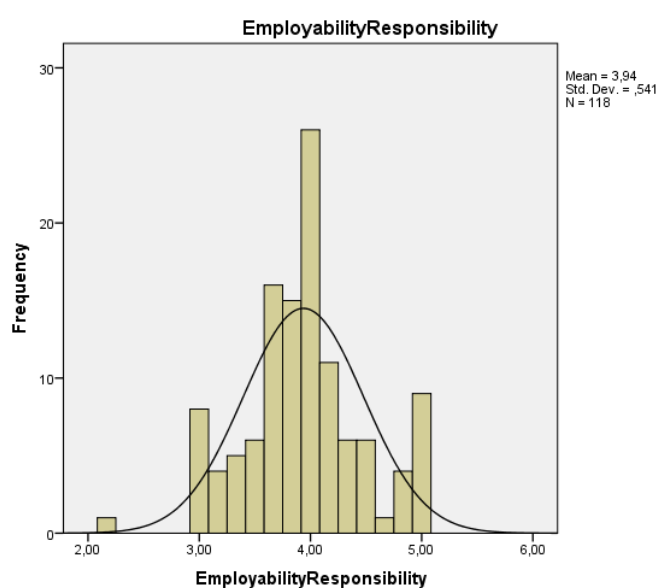
Employability Total
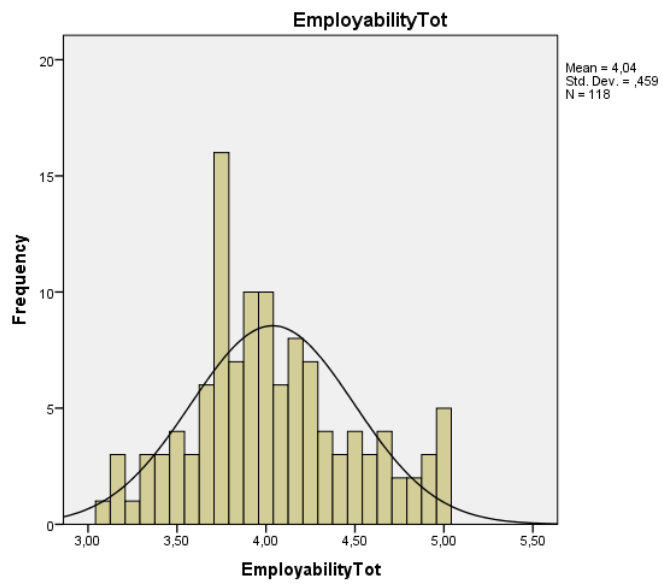
APPENDIX 2 CRONBACH'S ALPHA

Reliability bodily functions

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,834	,842	7

Item-Total Statistics

	Cronbach's Alpha if Item Deleted
Lichaamsfuncties 1 Ik voel mij gezond	,796
Lichaamsfuncties 2 Ik voel mij fit	,793
Lichaamsfuncties 3 Ik heb geen klachten en pijn	,827
Lichaamsfuncties 4 Ik slaap goed	,823
Lichaamsfuncties 5 Ik eet goed	,814
Lichaamsfuncties 6 Ik herstel snel na inspanning. Bijvoorbeeld na het sporten	,816
Lichaamsfuncties 7 Ik kan makkelijk bewegen. Bijvoorbeeld traplopen, wandelen of fietsen	,810

Reliability mental functions and perceptions.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,827	,831	7

Item-Total Statistics

	Cronbach's Alpha if Item Deleted
Mentaal welbevinden 1 Ik kan goed dingen onthouden	,816
Mentaal welbevinden 2 Ik kan mij goed concentreren	,813
Mentaal welbevinden 3 Ik kan goed zien, horen, praten, lezen	,809
Mentaal welbevinden 4 Ik voel mij vrolijk	,777
Mentaal welbevinden 5 Ik accepteer mijzelf zoals ik ben	,797
Mentaal welbevinden 6 Ik zoek naar oplossingen om moeilijke situaties te veranderen	,820
Mentaal welbevinden 7 Ik heb controle over mijn leven	,793

Reliability spiritual dimension

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,790	,798	7

Item-Total Statistics

	Cronbach's Alpha if Item Deleted
Zingeving 1 Ik heb een zinvol leven	,761
Zingeving 2 Ik heb 's morgens zin in de dag	,744
Zingeving 3 Ik heb idealen die ik graag wil bereiken	,778
Zingeving 4 Ik heb vertrouwen in mijn eigen toekomst	,751
Zingeving 5 Ik accepteer het leven zoals het komt	,769
Zingeving 6 Ik ben dankbaar voor wat het leven mij biedt	,739
Zingeving 7 Ik wil mijn hele leven blijven leren	,798

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,845	,854	7

Item-Total Statistics

	Cronbach's Alpha if Item Deleted
Kwaliteit van leven 1 Ik geniet van mijn leven	,809
Kwaliteit van leven 2 Ik ben gelukkig	,798
Kwaliteit van leven 3 Ik zit lekker in mijn vel	,802
Kwaliteit van leven 4 Ik ervaar evenwicht in mijn leven	,834
Kwaliteit van leven 5 Ik voel mij veilig	,838
Kwaliteit van leven 6 Ik ben tevreden over waar ik woon en met wie	,845
Kwaliteit van leven 7 Ik heb genoeg geld om mijn rekeningen te betalen	,837

Reliability social and societal participation

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,883	,883	7

Item-Total Statistics

	Cronbach's Alpha if Item Deleted
Sociaal Maatschappelijk Functioneren 1 Ik heb goed contact met andere mensen	,856
Sociaal Maatschappelijk Functioneren 2 Andere mensen nemen mij serieus	,871
Sociaal Maatschappelijk Functioneren 3 Ik heb mensen met wie ik leuke dingen kan doen	,854
Sociaal Maatschappelijk Functioneren 4 Ik heb mensen die mij steunen als dat nodig is	,854
Sociaal Maatschappelijk Functioneren 5 Ik heb het gevoel dat ik 'erbij hoor' in mijn omgeving	,844
Sociaal Maatschappelijk Functioneren 6 Ik heb werk of andere bezigheden die ik zinvol vind	,872
Sociaal Maatschappelijk Functioneren 7 Ik ben geïnteresseerd in wat er in de maatschappij gebeurt	,904

Reliability daily functioning

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,731	,764	7

Item-Total Statistics

	Cronbach's Alpha if Item Deleted
Dagelijks functioneren 1 Ik kan goed voor mijzelf zorgen. Bijvoorbeeld wassen, aankleden, boodschappen doen, koken	,713
Dagelijks functioneren 2 Ik weet wat ik wel en niet kan	,677
Dagelijks functioneren 3 Ik weet hoe ik mijn gezondheid kan verzorgen	,670

Dagelijks functioneren 4 Ik kan goed plannen wat ik op een dag moet doen	,727
Dagelijks functioneren 5 Ik kan goed omgaan met het geld dat ik elke maand krijg	,664
Dagelijks functioneren 6 Ik kan werken of vrijwilligerswerk doen	,685
Dagelijks functioneren 7 Ik weet hoe ik, zo nodig, hulp kan krijgen van officiële instanties	,756

Reliability sustainability – adaptability

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,854	,863	6

Item-Total Statistics

	Cronbach's Alpha if Item Deleted
1 Ik kan gemakkelijk voldoen aan de fysieke eisen van mijn werk	,828
2 Ik kan gemakkelijk voldoen aan de geestelijke (psychische) eisen van mijn werk	,821
3 Ik kan mijn werk emotioneel aan	,823
4 Aan het einde van de werkdag heb ik nog steeds energie	,832
5 Ik kan mijn werk goed combineren met mijn privé omstandigheden	,824
6 Ik verwacht over 3-5 jaar mijn werk nog te kunnen doen	,851

Reliability responsibility

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,842	,847	6

Item-Total Statistics

	Cronbach's Alpha if Item Deleted
1 Ik ben bewust bezig met mijn inzetbaarheid	,828
2 Ik vind het belangrijk om mijn inzetbaarheid op peil te houden	,828
3 Ik denk na over hoe mijn werk de komende 5 jaar gaat veranderen	,836
4 Ik weet hoe ik mijn inzetbaarheid kan verbeteren	,791
5 Ik ben goed in staat te werken aan mijn inzetbaarheid	,795
6 Ik vind dat ik zelf verantwoordelijk ben voor mijn inzetbaarheid	,813

APPENDIX 3 FACTOR ANALYSIS POSITIVE HEALTH AND SUSTAINABLE EMPLOYABILITY

Rotated component matrix of positive health total

Rotated Component Matrix[a]

	Component									
	1	2	3	4	5	6	7	8	9	10
Mentaal welbevinden 5 Ik accepteer mijzelf zoals ik ben	**,794**		,115		,203		,222	,119		
Kwaliteit van leven 2 Ik ben gelukkig	**,689**	,272	,363	,184	,139	,176	,160			
Kwaliteit van leven 3 Ik zit lekker in mijn vel	**,686**	,188		,248	,281	,105	,163		,127	,198
Kwaliteit van leven 4 Ik ervaar evenwicht in mijn leven	**,682**	,167	-,143	,367				,102		
Mentaal welbevinden 7 Ik heb controle over mijn leven	**,666**	,333	,161	,172			,105			
Mentaal welbevinden 4 Ik voel mij vrolijk	**,653**	,296	,256	,285	,234	,131				
Kwaliteit van leven 1 Ik geniet van mijn leven	**,606**	,339	,297			,202	,134		,259	,135
Lichaamsfuncties 1 Ik voel mij gezond	**,555**	,174		,153	,498		,171		,144	,107
Zingeving 5 Ik accepteer het leven zoals het komt	**,541**		,266		,161	,175	-,154	,235	,150	,217
Zingeving 2 Ik heb 's morgens zin in de dag	,479	,113	,298	,407	,252	,139			,169	,263
Zingeving 1 Ik heb een zinvol leven	,471	,285	,262			,453				,260
Sociaal Maatschappelijk Functioneren 3 Ik heb mensen met wie ik leuke dingen kan doen	,171	**,849**	,184		,151	,124				
Sociaal Maatschappelijk Functioneren 4 Ik heb mensen die mij steunen als dat nodig is		**,818**		,133	,136	,180		,187		,142
Sociaal Maatschappelijk Functioneren 1 Ik heb goed contact met andere mensen	,362	**,795**		-,110	,115					
Sociaal Maatschappelijk Functioneren 5 Ik heb het gevoel dat ik 'erbij hoor' in mijn omgeving	,308	**,791**		,170	,174	,136		,215	,100	
Zingeving 4 Ik heb vertrouwen in mijn eigen toekomst	,328	,499	,472	,104		-,119	,283		,201	
Kwaliteit van leven 6 Ik ben tevreden over waar ik woon en met wie	,114		**,673**	,442	,101					
Kwaliteit van leven 7 Ik heb genoeg geld om mijn rekeningen te betalen	,225	,458	**,616**						,300	,117
Zingeving 6 Ik ben dankbaar voor wat het leven mij biedt	,391	,117	**,599**		,135	,247	,176	,211		
Mentaal welbevinden 2 Ik kan mij goed concentreren	,227			**,720**			,162	,251		,121
Mentaal welbevinden 1 Ik kan goed dingen onthouden	,284	,138	,255	**,710**				,195		
Lichaamsfuncties 4 Ik slaap goed	,231		,168	**,604**	,366	,174	,205			-,276
Lichaamsfuncties 5 Ik eet goed	,355	,252			**,719**	,110	-,106			

Lichaamsfuncties 2 Ik voel mij fit	,447	,251		,199	**,599**		,190		,191	
Dagelijks functioneren 3 Ik weet hoe ik mijn gezondheid kan verzorgen	,109		,238	**,554**	,320		**,506**	,171		
Lichaamsfuncties 6 Ik herstel snel na inspanning. Bijvoorbeeld na het sporten	,303	,141	,189	,148	,466		,380	,149		,269
Dagelijks functioneren 1 Ik kan goed voor mijzelf zorgen. Bijvoorbeeld wassen, aankleden, boodschappen doen, koken		,184	,123		**,821**	,185				
Dagelijks functioneren 2 Ik weet wat ik wel en niet kan	,271	,202			,113	**,708**		,143	,354	
Zingeving 7 Ik wil mijn hele leven blijven leren	,106			,118	,107	**,799**	,189		-,127	,116
Zingeving 3 Ik heb idealen die ik graag wil bereiken	,321	,249	,119			**,686**		,278		-,190
Lichaamsfuncties 3 Ik heb geen klachten en pijn		,216	-,136	,353	,293	,326	,391			,243
Dagelijks functioneren 7 Ik weet hoe ik, zo nodig, hulp kan krijgen van officiële instanties	-,128	,128		,107			**,743**			
Dagelijks functioneren 6 Ik kan werken of vrijwilligerswerk doen	,361	,379	,132			,184	,179	**,540**	,179	-,101
Sociaal Maatschappelijk Functioneren 7 Ik ben geïnteresseerd in wat er in de maatschappij gebeurt	,374			,205			,190	,447	,144	,398
Lichaamsfuncties 7 Ik kan makkelijk bewegen. Bijvoorbeeld traplopen, wandelen of fietsen	,222	,278		,285	,281	,294	,371	-,380		,188
Dagelijks functioneren 4 Ik kan goed plannen wat ik op een dag moet doen	,186	-,108		,328	,179	,108		,124	**,659**	
Dagelijks functioneren 5 Ik kan goed omgaan met het geld dat ik elke maand krijg		,278	,287	,118		,286		,236	**,637**	,170
Mentaal welbevinden 3 Ik kan goed zien, horen, praten, lezen	,346	,269	,334	,189		,261	,140	,289	-,368	
Sociaal Maatschappelijk Functioneren 6 Ik heb werk of andere bezigheden die ik zinvol vind	,144	,418	,189		,225	,138	,177	,184	,264	**,568**
Sociaal Maatschappelijk Functioneren 2 Andere mensen nemen mij serieus	,103	,517	,219	,137		,204				**,533**
Mentaal welbevinden 6 Ik zoek naar oplossingen om moeilijke situaties te veranderen	,298	,254	,315	,104	,205		,208	,228		-,340
Kwaliteit van leven 5 Ik voel mij veilig	,267	,106	,285	,166	,155	,124		,269	,203	,339

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 18 iterations.

Factor Analysis bodily functions
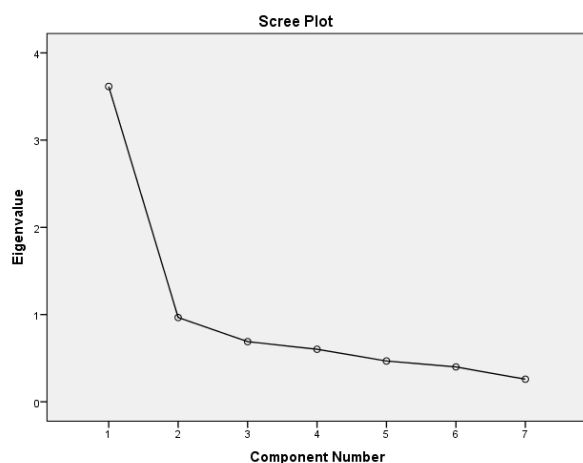
Scree Plot

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings	
Total	% of Variance	Cumulative %	Total	% of Variance	
3,615	51,643	51,643	3,615	51,643	
,966	13,804	65,447			
,690	9,856	75,302			
,602	8,602	83,904			
,468	6,682	90,586			
,400	5,712	96,298			
,259	3,702	100,000			

Component Matrix[a]

	Component
	1
Lichaamsfuncties 2 Ik voel mij fit	,818
Lichaamsfuncties 1 Ik voel mij gezond	,816
Lichaamsfuncties 5 Ik eet goed	,708
Lichaamsfuncties 7 Ik kan makkelijk bewegen. Bijvoorbeeld traplopen, wandelen of fietsen	,698
Lichaamsfuncties 6 Ik herstel snel na inspanning. Bijvoorbeeld na het sporten	,687
Lichaamsfuncties 4 Ik slaap goed	,652
Lichaamsfuncties 3 Ik heb geen klachten en pijn	,629

Extraction Method: Principal Component
Analysis.[a]

a. 1 components extracted. a. Only one
component was extracted. The solution cannot
be rotated

Factor Analysis mental functions and perceptions
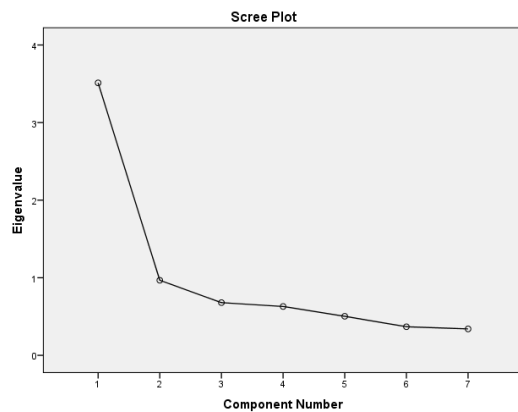
Scree Plot

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	**3,512**	50,166	50,166	3,512	50,166
2	,967	13,819	63,985		
3	,679	9,702	73,687		
4	,630	8,995	82,683		
5	,503	7,187	89,870		
6	,369	5,267	95,136		
7	,340	4,864	100,000		

Component Matrix[a]

	Component
	1
Mentaal welbevinden 4 Ik voel mij vrolijk	,843
Mentaal welbevinden 7 Ik heb controle over mijn leven	,774
Mentaal welbevinden 5 Ik accepteer mijzelf zoals ik ben	,751
Mentaal welbevinden 3 Ik kan goed zien, horen, praten, lezen	,678
Mentaal welbevinden 1 Ik kan goed dingen onthouden	,643
Mentaal welbevinden 2 Ik kan mij goed concentreren	,629
Mentaal welbevinden 6 Ik zoek naar oplossingen om moeilijke situaties te veranderen	,606

Extraction Method: Principal Component Analysis.[a]

a. 1 components extracted.

Rotated Component Matrix[a]

a. Only one component was extracted. The solution cannot be rotated.

Factor Analysis spiritual dimension
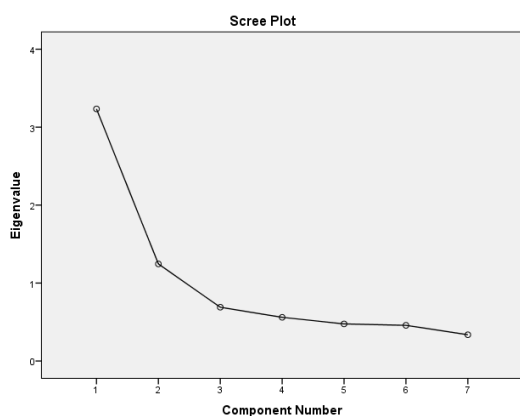
Scree Plot

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	**3,234**	46,200	46,200	3,234	46,200
2	**1,245**	17,787	63,987	1,245	17,787
3	,690	9,854	73,841		
4	,560	8,003	81,845		
5	,476	6,803	88,648		
6	,458	6,541	95,188		
7	,337	4,812	100,000		

Component Matrix[a]

	Component	
	1	2
Zingeving 6 Ik ben dankbaar voor wat het leven mij biedt	,791	
Zingeving 2 Ik heb 's morgens zin in de dag	,776	-,287
Zingeving 4 Ik heb vertrouwen in mijn eigen toekomst	,720	,175
Zingeving 1 Ik heb een zinvol leven	,714	-,257
Zingeving 5 Ik accepteer het leven zoals het komt	,682	-,460
Zingeving 7 Ik wil mijn hele leven blijven leren	,432	,688
Zingeving 3 Ik heb idealen die ik graag wil bereiken	,571	,614

Extraction Method: Principal Component Analysis.[a]

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
Zingeving 5 Ik accepteer het leven zoals het komt	,822	
Zingeving 2 Ik heb 's morgens zin in de dag	,813	,150
Zingeving 1 Ik heb een zinvol leven	,746	,144
Zingeving 6 Ik ben dankbaar voor wat het leven mij biedt	,715	,346
Zingeving 4 Ik heb vertrouwen in mijn eigen toekomst	,529	,518
Zingeving 3 Ik heb idealen die ik graag wil bereiken	,177	,819
Zingeving 7 Ik wil mijn hele leven blijven leren		,812

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	,860	,511
2	-,511	,860

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Factor Analysis quality of life
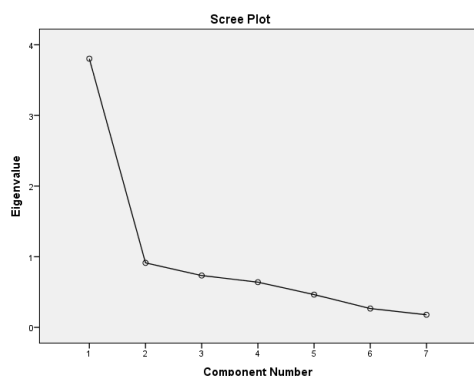
Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings	
Component	Total	% of Variance	Cumulative %	Total	% of Variance
1	**3,803**	54,335	54,335	3,803	54,335
2	,913	13,046	67,381		
3	,734	10,480	77,861		
4	,640	9,144	87,005		
5	,464	6,628	93,633		
6	,267	3,812	97,446		
7	,179	2,554	100,000		

Component Matrix[a]

	Component
	1
Kwaliteit van leven 2 Ik ben gelukkig	,876
Kwaliteit van leven 3 Ik zit lekker in mijn vel	,849
Kwaliteit van leven 1 Ik geniet van mijn leven	,840
Kwaliteit van leven 4 Ik ervaar evenwicht in mijn leven	,687
Kwaliteit van leven 7 Ik heb genoeg geld om mijn rekeningen te betalen	,643
Kwaliteit van leven 5 Ik voel mij veilig	,620
Kwaliteit van leven 6 Ik ben tevreden over waar ik woon en met wie	,583

Extraction Method: Principal Component Analysis.[a]

a. 1 components extracted.

Rotated Component Matrix[a]

a. Only one component was extracted. The solution cannot be rotated.

Factor Analysis Social and societal participation
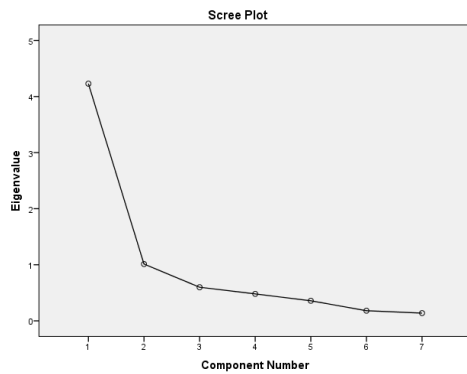
Scree Plot

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	**4,229**	60,418	60,418	4,229	60,418
2	**1,013**	14,469	74,887	1,013	14,469
3	,600	8,566	83,453		
4	,481	6,872	90,325		
5	,358	5,112	95,437		
6	,181	2,583	98,020		
7	,139	1,980	100,000		

Component Matrix[a]

	Component	
	1	2
Sociaal Maatschappelijk Functioneren 5 Ik heb het gevoel dat ik 'erbij hoor' in mijn omgeving	,901	-,148
Sociaal Maatschappelijk Functioneren 3 Ik heb mensen met wie ik leuke dingen kan doen	,863	-,345
Sociaal Maatschappelijk Functioneren 4 Ik heb mensen die mij steunen als dat nodig is	,856	-,213
Sociaal Maatschappelijk Functioneren 1 Ik heb goed contact met andere mensen	,841	-,210
Sociaal Maatschappelijk Functioneren 2 Andere mensen nemen mij serieus	,719	,263
Sociaal Maatschappelijk Functioneren 6 Ik heb werk of andere bezigheden die ik zinvol vind	,711	,351
Sociaal Maatschappelijk Functioneren 7 Ik ben geïnteresseerd in wat er in de maatschappij gebeurt	,457	,768

Extraction Method: Principal Component Analysis.[a]

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
Sociaal Maatschappelijk Functioneren 3 Ik heb mensen met wie ik leuke dingen kan doen	,922	,121
Sociaal Maatschappelijk Functioneren 5 Ik heb het gevoel dat ik 'erbij hoor' in mijn omgeving	,859	,311
Sociaal Maatschappelijk Functioneren 4 Ik heb mensen die mij steunen als dat nodig is	,850	,233
Sociaal Maatschappelijk Functioneren 1 Ik heb goed contact met andere mensen	,836	,228
Sociaal Maatschappelijk Functioneren 7 Ik ben geïnteresseerd in wat er in de maatschappij gebeurt		,894
Sociaal Maatschappelijk Functioneren 6 Ik heb werk of andere bezigheden die ik zinvol vind	,449	,654
Sociaal Maatschappelijk Functioneren 2 Andere mensen nemen mij serieus	,499	,581

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	,872	,489
2	-,489	,872

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Factor Analysis daily functioning
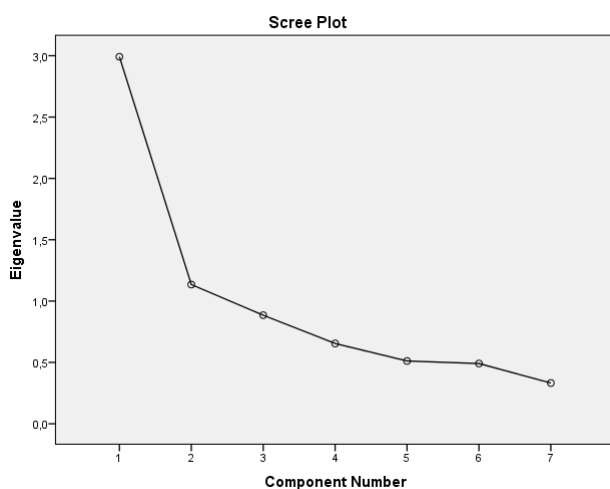
Scree Plot

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	**2,992**	42,737	42,737	2,992	42,737
2	**1,135**	16,209	58,946	1,135	16,209
3	,885	12,641	71,587		
4	,654	9,348	80,935		
5	,511	7,307	88,242		
6	,491	7,014	95,256		
7	,332	4,744	100,000		

Component Matrix[a]

	Component	
	1	2
Dagelijks functioneren 2 Ik weet wat ik wel en niet kan	,781	-,375
Dagelijks functioneren 5 Ik kan goed omgaan met het geld dat ik elke maand krijg	,771	
Dagelijks functioneren 3 Ik weet hoe ik mijn gezondheid kan verzorgen	,731	,262
Dagelijks functioneren 6 Ik kan werken of vrijwilligerswerk doen	,665	,227
Dagelijks functioneren 1 Ik kan goed voor mijzelf zorgen. Bijvoorbeeld wassen, aankleden, boodschappen doen, koken	,608	-,493
Dagelijks functioneren 4 Ik kan goed plannen wat ik op een dag moet doen	,544	
Dagelijks functioneren 7 Ik weet hoe ik, zo nodig, hulp kan krijgen van officiële instanties	,380	,789

Extraction Method: Principal Component Analysis.[a]

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
Dagelijks functioneren 2 Ik weet wat ik wel en niet kan	,853	,153
Dagelijks functioneren 1 Ik kan goed voor mijzelf zorgen. Bijvoorbeeld wassen, aankleden, boodschappen doen, koken	,781	
Dagelijks functioneren 5 Ik kan goed omgaan met het geld dat ik elke maand krijg	,678	,379
Dagelijks functioneren 4 Ik kan goed plannen wat ik op een dag moet doen	,421	,346
Dagelijks functioneren 7 Ik weet hoe ik, zo nodig, hulp kan krijgen van officiële instanties	-,153	,862
Dagelijks functioneren 3 Ik weet hoe ik mijn gezondheid kan verzorgen	,440	,640
Dagelijks functioneren 6 Ik kan werken of vrijwilligerswerk doen	,406	,573

Extraction Method: Principal Component Analysis.

 Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	,811	,585
2	-,585	,811

Extraction Method: Principal Component Analysis.

 Rotation Method: Varimax with Kaiser Normalization.

Factor Analysis sustainability – adaptability
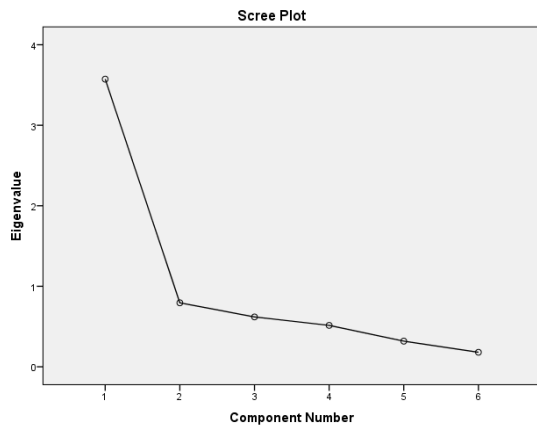
Scree Plot

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	**3,573**	59,552	59,552	3,573	59,552
2	,795	13,244	72,796		
3	,619	10,319	83,115		
4	,514	8,570	91,685		
5	,319	5,310	96,994		
6	,180	3,006	100,000		

Component Matrix[a]

	Component
	1
3 Ik kan mijn werk emotioneel aan	,833
2 Ik kan gemakkelijk voldoen aan de geestelijke (psychische) eisen van mijn werk	,822
4 Aan het einde van de werkdag heb ik nog steeds energie	,775
1 Ik kan gemakkelijk voldoen aan de fysieke eisen van mijn werk	,768
5 Ik kan mijn werk goed combineren met mijn privé omstandigheden	,768
6 Ik verwacht over 3-5 jaar mijn werk nog te kunnen doen	,650

Extraction Method: Principal Component Analysis.[a]

a. 1 components extracted.

Rotated Component Matrix[a]

a. Only one component was extracted. The solution cannot be rotated.

Factor Analysis responsibility
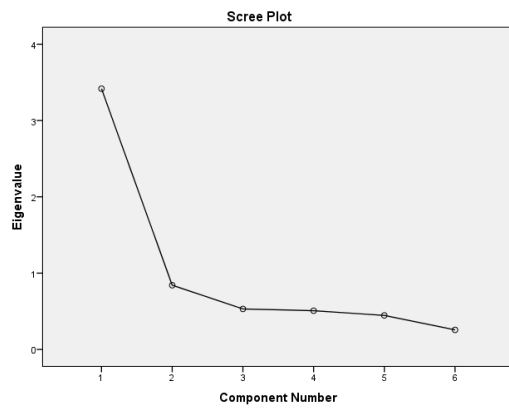
Scree Plot

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	**3,417**	56,954	56,954	3,417	56,954
2	,842	14,028	70,982		
3	,531	8,847	79,829		
4	,508	8,461	88,290		
5	,446	7,432	95,722		
6	,257	4,278	100,000		

Component Matrix[a]

	Component
	1
4 Ik weet hoe ik mijn inzetbaarheid kan verbeteren	,838
5 Ik ben goed in staat te werken aan mijn inzetbaarheid	,835
6 Ik vind dat ik zelf verantwoordelijk ben voor mijn inzetbaarheid	,757
1 Ik ben bewust bezig met mijn inzetbaarheid	,698
2 Ik vind het belangrijk om mijn inzetbaarheid op peil te houden	,694
3 Ik denk na over hoe mijn werk de komende 5 jaar gaat veranderen	,690

Extraction Method: Principal Component Analysis.[a]

a. 1 components extracted.

Rotated Component Matrix[a]

a. Only one component was extracted. The solution cannot be rotated.

APPENDIX 4 HYPOTHESES TESTING

Hypothesis 1 Pearsons correlation

Correlations

		Employability Tot	Employability	Employability Responsibility	Pos Health	Bodily Functions	Mental Functions	Spiritual Dimension	Quality Of Life	Social Participation	Daily Functioning2
Employability Tot	Pearson Correlation	1	,841**	,831**	,678**	,617**	,576**	,621**	,578**	,480**	,529**
	Sig. (2-tailed)		,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	118	118	118	118	118	118	118	118	118	118
Employability	Pearson Correlation	,841**	1	,398**	,679**	,619**	,602**	,578**	,565**	,493**	,555**
	Sig. (2-tailed)	,000		,000	,000	,000	,000	,000	,000	,000	,000
	N	118	118	118	118	118	118	118	118	118	118
Employability Responsibility	Pearson Correlation	,831**	,398**	1	,452**	,409**	,358**	,458**	,399**	,307**	,327**
	Sig. (2-tailed)	,000	,000		,000	,000	,000	,000	,000	,001	,000
	N	118	118	118	118	118	118	118	118	118	118
Pos Health	Pearson Correlation	,678**	,679**	,452**	1	,864**	,873**	,891**	,900**	,790**	,647**
	Sig. (2-tailed)	,000	,000	,000		,000	,000	,000	,000	,000	,000
	N	118	118	118	118	118	118	118	118	118	118
Bodily Functions	Pearson Correlation	,617**	,619**	,409**	,864**	1	,721**	,710**	,692**	,594**	,489**
	Sig. (2-tailed)	,000	,000	,000	,000		,000	,000	,000	,000	,000
	N	118	118	118	118	118	118	118	118	118	118
Mental Functions	Pearson Correlation	,576**	,602**	,358**	,873**	,721**	1	,746**	,786**	,572**	,461**

	Sig. (2-tailed)	,000	,000	,000	,000	,000		,000	,000	,000	,000
	N	118	118	118	118	118	118	118	118	118	118
Spiritual Dimension	Pearson Correlation	,621**	,578**	,458**	,891**	,710**	,746**	1	,784**	,654**	,530**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000		,000	,000	,000
	N	118	118	118	118	118	118	118	118	118	118
Quality Of Life	Pearson Correlation	,578**	,565**	,399**	,900**	,692**	,786**	,784**	1	,657**	,532**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000		,000	,000
	N	118	118	118	118	118	118	118	118	118	118
Social Participation	Pearson Correlation	,480**	,493**	,307**	,790**	,594**	,572**	,654**	,657**	1	,466**
	Sig. (2-tailed)	,000	,000	,001	,000	,000	,000	,000	,000		,000
	N	118	118	118	118	118	118	118	118	118	118
Daily Functioning2	Pearson Correlation	,529**	,555**	,327**	,647**	,489**	,461**	,530**	,532**	,466**	1
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	,000	,000	,000	
	N	118	118	118	118	118	118	118	118	118	118

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

Hypothesis 1 Positive health and sustainable employability

Model Summary^c

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	,071^a	**,005**	**-,030**	,46573	,005	,141
2	,689^b	**,475**	**,451**	,33988	,470	100,175

Model Summary^c

Model	Change Statistics		
	df1	df2	Sig. F Change
1	4	113	**,967**
2	1	112	**,000**

a. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, PosHealth

c. Dependent Variable: EmployabilityTot

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,122	4	,031	,141	**,967^b**
	Residual	24,510	113	,217		
	Total	24,633	117			
2	Regression	11,695	**5**	2,339	**20,247**	**,000^c**
	Residual	12,938	**112**	,116		
	Total	24,633	117			

a. Dependent Variable: EmployabilityTot

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

c. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, PosHealth

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3,889	,241		16,109
	Wat is de hoogste opleiding die je hebt afgemaakt?	,006	,035	**,020**	,164
	Waaronder valt jouw functie?	,012	,094	**,013**	,123
	AgeYoung	,031	,129	**,029**	,242
	Wat is je geslacht	,050	,094	**,054**	,536
2	(Constant)	,750	,360		2,085
	Wat is de hoogste opleiding die je hebt afgemaakt?	-,032	,026	**-,114**	-1,254
	Waaronder valt jouw functie?	,102	,069	**,111**	1,470
	AgeYoung	,022	,094	**,020**	,236
	Wat is je geslacht	,050	,069	**,054**	,733
	PosHealth	,775	,077	**,701**	10,009

Coefficients[a]

Model		Sig.	Collinearity Statistics	
			Tolerance	VIF
1	(Constant)	,000		
	Wat is de hoogste opleiding die je hebt afgemaakt?	**,870**	,576	1,735
	Waaronder valt jouw functie?	**,902**	,843	1,186
	AgeYoung	**,809**	,623	1,604
	Wat is je geslacht	**,593**	,867	1,154
2	(Constant)	**,039**		
	Wat is de hoogste opleiding die je hebt afgemaakt?	**,213**	,564	1,774
	Waaronder valt jouw functie?	**,144**	,829	1,206
	AgeYoung	**,814**	,623	1,604
	Wat is je geslacht	**,465**	,867	1,154
	PosHealth	**,000**	,955	1,047

a. Dependent Variable: EmployabilityTot

Hypothesis 2 and 3 Dimensions of positive health and sustainable employability

Model Summary^c

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	,071^a	**,005**	-,030	,46573	,005	,141
2	,708^b	**,501**	,455	,33884	**,496**	17,746

Model Summary^c

Model	Change Statistics		
	df1	df2	Sig. F Change
1	4	113	,967
2	6	107	,000

a. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, DailyFunctioning2, MentalFunctions, SocialParticipation, BodilyFunctions, SpiritualDimension, QualityOfLife

c. Dependent Variable: EmployabilityTot

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,122	4	,031	,141	,967^b
	Residual	24,510	113	,217		
	Total	24,633	117			
2	Regression	12,347	**10**	1,235	**10,754**	,000^c
	Residual	12,285	**107**	,115		
	Total	24,633	117			

a. Dependent Variable: EmployabilityTot

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

c. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, DailyFunctioning2, MentalFunctions, SocialParticipation, BodilyFunctions, SpiritualDimension, QualityOfLife

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3,889	,241		16,109
	Wat is de hoogste opleiding die je hebt afgemaakt?	,006	,035	**,020**	,164
	Waaronder valt jouw functie?	,012	,094	**,013**	,123
	AgeYoung	,031	,129	**,029**	,242
	Wat is je geslacht	,050	,094	**,054**	,536
2	(Constant)	,703	,385		1,827
	Wat is de hoogste opleiding die je hebt afgemaakt?	-,022	,026	**-,078**	-,827
	Waaronder valt jouw functie?	,106	,072	**,115**	1,468
	AgeYoung	-,003	,096	**-,002**	-,027
	Wat is je geslacht	,048	,072	**,052**	,678
	BodilyFunctions	,233	,090	**,292**	2,574
	MentalFunctions	,061	,123	**,064**	,498
	SpiritualDimension	,239	,130	**,236**	1,836
	QualityOfLife	,038	,124	**,042**	,305
	SocialParticipation	,014	,100	**,014**	,144
	DailyFunctioning2	,194	,083	**,202**	2,337

Coefficients[a]

Model		Sig.	Collinearity Statistics	
			Tolerance	VIF
1	(Constant)	,000		
	Wat is de hoogste opleiding die je hebt afgemaakt?	,870	,576	1,735
	Waaronder valt jouw functie?	,902	,843	1,186
	AgeYoung	,809	,623	1,604
	Wat is je geslacht	,593	,867	1,154
2	(Constant)	,070		
	Wat is de hoogste opleiding die je hebt afgemaakt?	,410	,523	1,913
	Waaronder valt jouw functie?	,145	,760	1,315
	AgeYoung	,978	,593	1,686

Wat is je geslacht	,499	,793	1,261
BodilyFunctions	**,011**	,362	2,764
MentalFunctions	,619	,281	3,560
SpiritualDimension	,069	,281	3,557
QualityOfLife	,761	,248	4,037
SocialParticipation	,886	,484	2,067
DailyFunctioning2	**,021**	,626	1,597

a. Dependent Variable: EmployabilityTot

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	,112[a]	,013	-,022	,56242	**,013**	,362
2	,689[b]	**,475**	,452	,41189	**,462**	98,687

Model Summary[c]

Model	Change Statistics		
	df1	df2	Sig. F Change
1	4	113	**,835**
2	1	112	**,000**

a. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, PosHealth

c. Dependent Variable: Employability

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,458	4	,114	,362	,835[b]
	Residual	35,744	113	,316		
	Total	36,202	117			
2	Regression	17,200	**5**	3,440	**20,277**	**,000[c]**
	Residual	19,001	**112**	,170		
	Total	36,202	117			

a. Dependent Variable: Employability

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

c. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, PosHealth

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3,821	,292		13,106
	Wat is de hoogste opleiding die je hebt afgemaakt?	,033	,042	,097	,789
	Waaronder valt jouw functie?	,036	,113	,033	,322
	AgeYoung	-,015	,156	-,012	-,099
	Wat is je geslacht	,046	,114	,041	,406
2	(Constant)	,045	,436		,104
	Wat is de hoogste opleiding die je hebt afgemaakt?	-,012	,031	-,036	-,399
	Waaronder valt jouw functie?	,145	,084	,130	1,728
	AgeYoung	-,026	,114	-,020	-,229
	Wat is je geslacht	,046	,083	,041	,553
	PosHealth	,933	,094	,696	9,934

Coefficients[a]

Model		Sig.	Collinearity Statistics	
			Tolerance	VIF
1	(Constant)	,000		
	Wat is de hoogste opleiding die je hebt afgemaakt?	,432	,576	1,735
	Waaronder valt jouw functie?	,748	,843	1,186
	AgeYoung	,922	,623	1,604
	Wat is je geslacht	,685	,867	1,154
2	(Constant)	,918		
	Wat is de hoogste opleiding die je hebt afgemaakt?	,691	,564	1,774
	Waaronder valt jouw functie?	,087	,829	1,206
	AgeYoung	,819	,623	1,604
	Wat is je geslacht	,581	,867	1,154
	PosHealth	,000	,955	1,047

a. Dependent Variable: Employability

Hypothesis 5 and 6 The six dimensions of positive health and sustainability -
adaptability

Model Summary[c]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | |
					R Square Change	F Change
1	,112[a]	**,013**	-,022	,56242	,013	,362
2	,718[b]	**,515**	,470	,40513	,502	18,463

Model Summary[c]

| Model | Change Statistics | | |
	df1	df2	Sig. F Change
1	4	113	**,835**
2	6	107	**,000**

a. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, DailyFunctioning2, MentalFunctions, SocialParticipation, BodilyFunctions, SpiritualDimension, QualityOfLife

c. Dependent Variable: Employability

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,458	4	,114	,362	,835[b]
	Residual	35,744	113	,316		
	Total	36,202	117			
2	Regression	18,640	**10**	1,864	**11,357**	**,000[c]**
	Residual	17,562	**107**	,164		
	Total	36,202	117			

a. Dependent Variable: Employability

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

c. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, DailyFunctioning2, MentalFunctions, SocialParticipation, BodilyFunctions, SpiritualDimension, QualityOfLife

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3,821	,292		13,106
	Wat is de hoogste opleiding die je hebt afgemaakt?	,033	,042	**,097**	,789
	Waaronder valt jouw functie?	,036	,113	**,033**	,322
	AgeYoung	-,015	,156	**-,012**	-,099
	Wat is je geslacht	,046	,114	**,041**	,406
2	(Constant)	-,108	,460		-,235
	Wat is de hoogste opleiding die je hebt afgemaakt?	,010	,032	**,031**	,330
	Waaronder valt jouw functie?	,130	,086	**,117**	1,516
	AgeYoung	-,080	,115	**-,061**	-,696
	Wat is je geslacht	,035	,086	**,031**	,408
	BodilyFunctions	,291	,108	**,302**	2,698
	MentalFunctions	,228	,147	**,198**	1,556
	SpiritualDimension	,066	,155	**,054**	,427
	QualityOfLife	-,023	,148	**-,021**	-,152
	SocialParticipation	,071	,119	**,058**	,597
	DailyFunctioning2	,325	,099	**,278**	3,267

Coefficients^a

Model		Sig.	Collinearity Statistics	
			Tolerance	VIF
1	(Constant)	,000		
	Wat is de hoogste opleiding die je hebt afgemaakt?	,432	,576	1,735
	Waaronder valt jouw functie?	,748	,843	1,186
	AgeYoung	,922	,623	1,604
	Wat is je geslacht	,685	,867	1,154
2	(Constant)	,814		
	Wat is de hoogste opleiding die je hebt afgemaakt?	,742	,523	1,913
	Waaronder valt jouw functie?	,132	,760	1,315
	AgeYoung	,488	,593	1,686
	Wat is je geslacht	,684	,793	1,261
	BodilyFunctions	**,008**	,362	2,764
	MentalFunctions	,123	,281	3,560
	SpiritualDimension	,671	,281	3,557
	QualityOfLife	,879	,248	4,037
	SocialParticipation	,552	,484	2,067
	DailyFunctioning2	**,001**	,626	1,597

a. Dependent Variable: Employability

Model Summary^c

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change
					Change Statistics	
1	,073ª	**,005**	-,030	,54928	**,005**	,149
2	,469ᵇ	**,220**	,185	,48861	**,215**	30,801

Model Summary^c

Model	df1	df2	Sig. F Change
	Change Statistics		
1	4	113	**,963**
2	1	112	**,000**

a. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, PosHealth

c. Dependent Variable: EmployabilityResponsibility

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,180	4	,045	,149	,963ᵇ
	Residual	34,093	113	,302		
	Total	34,273	117			
2	Regression	7,534	**5**	1,507	**6,311**	**,000ᶜ**
	Residual	26,739	**112**	,239		
	Total	34,273	117			

a. Dependent Variable: EmployabilityResponsibility

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

c. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, PosHealth

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3,957	,285		13,897
	Wat is de hoogste opleiding die je hebt afgemaakt?	-,022	,041	**-,066**	-,530
	Waaronder valt jouw functie?	-,013	,111	**-,012**	-,121
	AgeYoung	,078	,152	**,061**	,511
	Wat is je geslacht	,055	,111	**,050**	,493
2	(Constant)	1,454	,517		2,813
	Wat is de hoogste opleiding die je hebt afgemaakt?	-,052	,037	**-,156**	-1,408
	Waaronder valt jouw functie?	,058	,099	**,054**	,588
	AgeYoung	,071	,136	**,055**	,521
	Wat is je geslacht	,055	,099	**,050**	,554
	PosHealth	,618	,111	**,474**	5,550

Coefficients[a]

Model		Sig.	Collinearity Statistics	
			Tolerance	VIF
1	(Constant)	,000		
	Wat is de hoogste opleiding die je hebt afgemaakt?	,597	,576	1,735
	Waaronder valt jouw functie?	,904	,843	1,186
	AgeYoung	,610	,623	1,604
	Wat is je geslacht	,623	,867	1,154
2	(Constant)	,006		
	Wat is de hoogste opleiding die je hebt afgemaakt?	,162	,564	1,774
	Waaronder valt jouw functie?	,558	,829	1,206
	AgeYoung	,603	,623	1,604
	Wat is je geslacht	,581	,867	1,154
	PosHealth	,000	,955	1,047

a. Dependent Variable: EmployabilityResponsibility

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change
					Change Statistics	
1	,073[a]	**,005**	-,030	,54928	**,005**	,149
2	,500[b]	**,250**	,180	,49023	**,244**	5,810

Model Summary[c]

Model	df1	df2	Sig. F Change
	Change Statistics		
1	4	113	**,963**
2	6	107	**,000**

a. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, DailyFunctioning2, MentalFunctions, SocialParticipation, BodilyFunctions, SpiritualDimension, QualityOfLife

c. Dependent Variable: EmployabilityResponsibility

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,180	4	,045	,149	,963[b]
	Residual	34,093	113	,302		
	Total	34,273	117			
2	Regression	8,559	**10**	,856	**3,561**	**,000[c]**
	Residual	25,715	**107**	,240		
	Total	34,273	117			

a. Dependent Variable: EmployabilityResponsibility

b. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?

c. Predictors: (Constant), Wat is je geslacht, AgeYoung, Waaronder valt jouw functie?, Wat is de hoogste opleiding die je hebt afgemaakt?, DailyFunctioning2, MentalFunctions, SocialParticipation, BodilyFunctions, SpiritualDimension, QualityOfLife

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	3,957	,285		13,897
	Wat is de hoogste opleiding die je hebt afgemaakt?	-,022	,041	**-,066**	-,530
	Waaronder valt jouw functie?	-,013	,111	**-,012**	-,121
	AgeYoung	,078	,152	**,061**	,511
	Wat is je geslacht	,055	,111	**,050**	,493
2	(Constant)	1,515	,557		2,720
	Wat is de hoogste opleiding die je hebt afgemaakt?	-,054	,038	**-,164**	-1,416
	Waaronder valt jouw functie?	,081	,104	**,075**	,776
	AgeYoung	,075	,139	**,058**	,537
	Wat is je geslacht	,062	,104	**,056**	,599
	BodilyFunctions	,174	,131	**,185**	1,328
	MentalFunctions	-,106	,178	**-,094**	-,597
	SpiritualDimension	,411	,188	**,345**	2,186
	QualityOfLife	,098	,180	**,092**	,548
	SocialParticipation	-,042	,144	**-,035**	-,295
	DailyFunctioning2	,064	,120	**,056**	,531

Coefficients[a]

Model		Sig.	Collinearity Statistics	
			Tolerance	VIF
1	(Constant)	,000		
	Wat is de hoogste opleiding die je hebt afgemaakt?	,597	,576	1,735
	Waaronder valt jouw functie?	,904	,843	1,186
	AgeYoung	,610	,623	1,604
	Wat is je geslacht	,623	,867	1,154
2	(Constant)	,008		
	Wat is de hoogste opleiding die je hebt afgemaakt?	,160	,523	1,913
	Waaronder valt jouw functie?	,439	,760	1,315
	AgeYoung	,592	,593	1,686
	Wat is je geslacht	,550	,793	1,261
	BodilyFunctions	,187	,362	2,764
	MentalFunctions	,552	,281	3,560
	SpiritualDimension	**,031**	,281	3,557
	QualityOfLife	,585	,248	4,037
	SocialParticipation	,769	,484	2,067
	DailyFunctioning2	,596	,626	1,597

a. Dependent Variable: EmployabilityResponsibility