QUALITY OF EMPLOYMENT AND SOCIAL DETERMINANTS INFLUENCING WELL-BEING

A quantitative research focussing on skill-mismatch and well-being of the Dutch labour force.

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Abstract

Background: The Dutch labour market faces problems of skill-mismatch, resulting in negative well-being outcomes of the population. Skill-mismatch, referred to as quality of employment in this study, is defined as the extent individuals possess an educational level above or below the one required for their occupation. Previous research shows that the quality of employment in the labour market results in negative outcomes for well-being and is currently a problem in the Netherlands. This study questions if educational level improves the quality of employment and if quality of employment is an important factor influencing well-being. The Human Capital Theory (HCT) and the model of Dahlgren and Whitehead (1991) of Social Determinants of Well-being (SDW) is used to support the research questions. The HCT explain the relation between educational level and quality of employment. The SDW approach defines determinants influencing well-being as living and working conditions, social factors and individual factors.

Methods: This quantitative study using data from the European Social Survey (ESS) is used to describe the relation between skill-mismatch and other social determinants with well-being. Firstly, the relation between education and skill-mismatch is tested in the Dutch labour market context using multiple regression analysis. Secondly, this study will test the relation between quality of employment and other social determinants with well-being. Multiple regression analyses are used to test the relation between quality of employment and well-being.

Results: Multiple regression analysis shows that education level affects quality of employment. Quality of employment influences well-being along with occupational level, social factors and individual factors.

Conclusion: Educational level positively influences the quality of employment in the Dutch labour market context. Nevertheless, individuals and social factors proves to be more important factors influence well-being than quality of employment.

1. Introduction

1.1 Current situation

The potential gap between workers' educational level and the skills used at their jobs is a major concern for social scientist in the past decades (Muñoz de Bustillo, Sarkar, Sebastián & Antón, 2018). The gap between workers' educational level and skill used at their jobs is called *skill mismatch.* Skill mismatch in the literature is described as the coherence (or lack of it) between the resources of the worker and the demands of the occupation. The resources of a worker are often expressed in terms of educational level or skill requirements (Muñoz de Bustillo et al., 2018). Other words used in the literature for individuals experiencing skill mismatch are (i) under- and overemployment and (ii)undereducated and overeducated.

The rise in the global labour force and a slower rise in employment opportunities is challenging employment, in both developed and developing countries (Pilz, 2017). Finding the right people for the right jobs is often difficult (Flisi, Goglio, Meroni, Rodrigues & Vera-Toscano, 2016). Since the Great Recession in 2008, the labour market in Europe are recovering and undergoing a transformation (Brunello & Wruuck, 2019). After sustained economic growth, the Great Recession caused an increase of the unemployment rates in most European countries (Bartlett, 2013). Therefore, European policies aimed after the Great Recession on increasing the employment rate and decrease mismatches in the labour market (Motoi & Gheorghiță, 2017; Bartlett, 2013). These policies focussed on education and match skilled workers to the demands of employers. Nevertheless, evidence suggest that in many European Countries these policies failed (Bartlett, 2013).

Research shows us that skill mismatch in Europe is persistent and results from labour market structure (Flisi et al., 2016). In Europe, 15% to 35% have a job in which they are mismatched (Morgado, Sequeira, Santos, Ferreira-Lopes & Reis, 2016). The main problem is that skill mismatch raises economical and societal problems. Mismatch can negatively affect labour productivity and disturb innovation developments when a profession does not match their education level (Brunello & Wruuck, 2019). In addition, skill mismatch limits employability prospects and access to quality jobs (Morgado et al., 2016; Brunello & Wruuck, 2019). Experiencing skill mismatch at the beginning of your career leads to higher chances of ending up in a mismatch situation in the future (Meroni & Vera-Toscano, 2017). People who experience skill mismatch report more depressive symptoms, lower life satisfaction, increased alcohol abuse and lower perceived competence and self-esteem compared to

well-matched employees (Friedland & Price, 2003). Working above or under your educational level can lead to psychological problems like depressions and burnout (Dollard & Winefield, 2002). Individuals experiencing mismatch report job dissatisfaction and lower levels of general mental health and psychological well-being compared to well-matched workers (Chevaillier & Duru-Bellat, 2017; Friedland & Price, 2003; Dollard & Winefield, 2002). In conclusion, skill-mismatch have negative consequences for well-being and this causes problems that needs to be addresses.

1.2 Current situation in the Netherlands

The Netherlands shows the same problems as Europe concerning skill mismatch on the labour market. Different studies argue that the demand for higher-educated jobs increases more rapidly than the supply of high skilled jobs (Groot & van den Brink, 2000; Cabys & Somers, 2018; CBS, 2017). In 2009, the proportion of 25-34 years old who attained tertiary level of education is higher than the generation that is about to leave the labour market (55-64 years old) (Figure 1) (OECD indicators, 2012). This trend of 2009 is expected to continue the following years until today (OECD indicators, 2019). Since the Great Recession, the underemployment rate in the Netherlands almost doubled from 3,5 to 6,4 percent (Bell & Blanchflower, 2018). We can argue that skill-mismatch and the consequences for well-being will remain a problem in the future in the Netherlands.
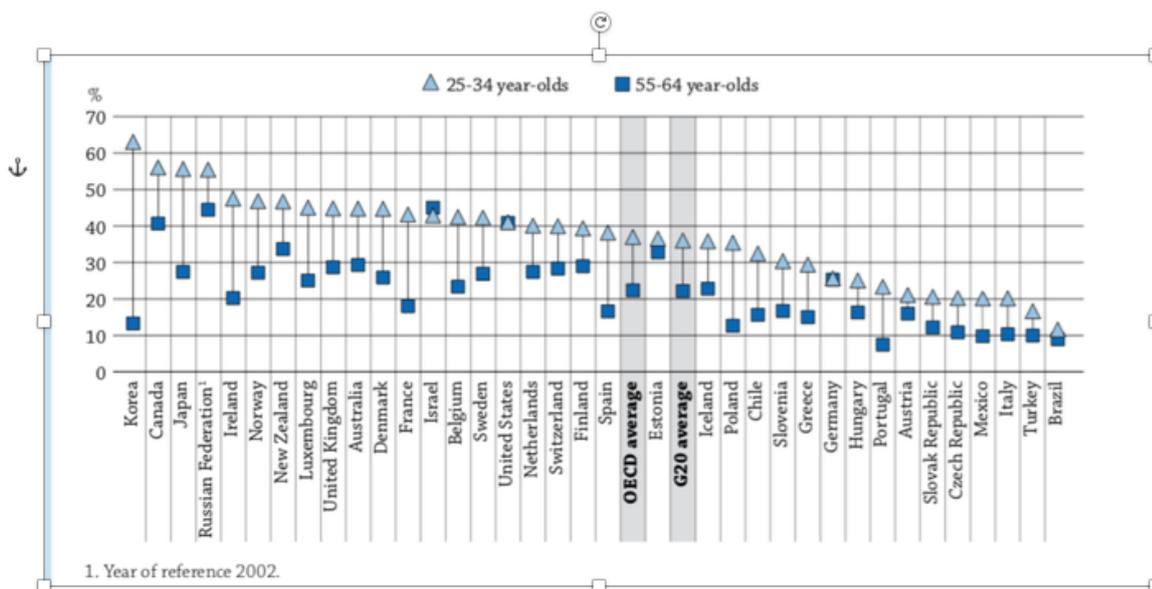

Figure 1: Percentage of the population that has attained tertiary education, by age group (2009) (OECD Indicators, 2012)

1.3 Existing research

Many researches have discussed different forms of mismatch and their relation to well-being. Friedland and Price (2003) argue that someone can be underemployed in four dimensions: unsatisfactory hours of work, insufficient income from work, limited use of skills during work and "status-underemployment". The results provide support that income- and status-underemployment is related to well-being. Workers who receive a lower level of income in their job corresponding to their educational level (income-underemployment) report lower levels of well-being. Second, workers where the status of their occupation does not align with expected on the basis of their background report lower levels of well-being as well. Regarding hours-underemployment (workers working involuntary part-time), Bell & Blanchflower (2018) discussed that less individuals are unemployed, but the number of individuals who are working part-time and want to work full-time increases (Bell & Blanchflower, 2018). For example, the Netherlands stand out as the country reporting the highest prevalence of hours-overemployment (18%) in Europe (Steiber & Haas, 2018). In addition, in a different study they argue that hours-underemployed or hours-overemployed (workers who wants to work fewer hours) report lower levels of well-being (Bell & Blanchflower, 2019).

Individuals are skill-underemployed when their profession does not give them the opportunity to putt all their skills and training into use. Friedland and Price (2003) find no significant relation, but a study in the United Kingdom (UK) shows that skill mismatch has an increased negative impact on workers their well-being (Heyes, Tomlinson & Whitworth, 2017). Furthermore, skill mismatch causes pay penalties and a reduce in job satisfaction and complicated productivity growth (Heyes et al., 2017). Mismatched workers report that their skills and education level are not fully utilized in their jobs. Skills are acquired through education and is an important source of well-being (Swanson, Holton & Holton, 2001; Theodoropoulou, 2010). Literature also discusses social factors influencing well-being. Social advantages and disadvantages have a powerful impact on the well-being of individuals (Li, 2016).

In conclusion, literature describes more factors in the labour market context that influence well-being than just skill mismatch. The combination of other social and economic factors and skill mismatch influencing well-being in the labour market context is underexposed in current literature.

1.4 Aim of the study

This study focusses on skill mismatch in the Netherlands in the labour market context. Policies are aimed to reduce skill-mismatch to increase the education level of the population. Nevertheless, the problem of skill-mismatch in the Netherlands still exists. Research shows us that other factors influence well-being in the Dutch labour market context, like economic and social factors. The consequences of skill mismatched causes problems for well-being, but the relation with other factors is underexposed in current literature. This study provides more insight in different factors influencing well-being in the Dutch labour market context, with skill-mismatch as a central concept.

1.5 Societal relevance

The study of McGowan and Andrews (2015) shows that effective policies can reduce skill mismatch in country. The Netherlands are compared to other European countries on an average level concerning skill mismatch and effective policies. But due to the negative consequences skill mismatches have for society, better understanding of this topic is necessary. Policy targets to reduce skill mismatch are to reduce early school leavers and raise the population with higher education (Theodoropoulou, 2010). The Netherlands shows an increase in public expenses on higher/tertiary education since 2005 (CBS, 2017). The resulted overeducation in labour markets questions the benefits of public funding of higher education. Higher education has positive returns for individuals, but research suggest that the public funding for promotion of further investment in education has to be adjusted to the demands of the current labour market situation (Morgado et al., 2016; Muñoz de Bustillo et al., 2018). This study will help Dutch policy makers get a more comprehensive understanding of the relation between skill mismatch and well-being and other factors influencing well-being. Dutch policy makers need to better understand the concepts influencing well-being in the "labour market context" to make policies more effective. Is the focus of policies on reducing skill-mismatch necessary or are other factors of more importance?

2. Theoretical Framework

In this study, the Human Capital Theory (HCT) and the social determinants of well-being (SDW) approach will be built on to explain the relation between education and skill mismatch and the relation between skill mismatch and economic and social factors influencing well-being. Before addressing the central elements of both theories, concepts important to this study will be defined. First, the definition of skill mismatch in the current study is defined. Second, the concepts of economic and social factors influencing well-being will be discussed in more detail. Finally, the concepts are linked to the theories used resulting in a conceptual model used in this study.

2.1 Concepts

Mismatch on the labour market is defined as the extent individuals possess an educational level above or below the one required for their job (Morgado et al., 2016). This study defines skill mismatch in the labour market with objective measurements of educational level and occupational level. The education levels in the Netherlands are classified into the International Standard Classification of Education 2011 (ISCED), which are applied in other quantitative studies worldwide (UNESCO Institute for Statistics, 2012). Tertiary education level is ranked as the highest form of education (levels 5-8) and primary education (levels 0-2) as the lowest form of education. ISCED levels 3-4 are classified as secondary levels of education. In Appendix A, more detailed information about the classifications specific for the Netherlands are provided (Appendix A).

Occupation are classified using the principles of International Standard Classification of Occupation (ISCO) 2008 (CBS, 2020). This classification is frequently used in other quantitative studies (Barsoum, Ramadan & Mostafa, 2014; Heyes, Tomlinson & Whitworth, 2017). The ISCO 2008 can be used to classify occupations into different levels (CBS, 2020). The study of Barsoum and colleagues (2014) classified the occupation with the required educational level (Table 1).

ISCO major group	Broad occupation group	Education level
Managers		
Professionals	High-skilled non-manual	Tertiary (ISCED 5–6)
Technicians & associate professionals		
Clerical support workers	Low-skilled non-manual	
Service & sales workers		Secondary (ISCED 3–4)
Skilled agricultural & fishery workers		
Craft & related trades workers	Skilled manual	
Plant & machine operators & assemblers		
Elementary occupations	Unskilled	Primary (ISCED 1–2)

Table 1: ISCO major groups of occupations with the well-matched educational level (Barsoum et al., 2014).

If the workers education level is compatible with the required education of the occupation they are well-matched. If it is not compatible, so the worker is over- or undereducated for the occupation, the worker is mismatched (Table 1) (Brunello & Wruuck, 2019).

Studies define the quality of the (mis)match between job and skill differently. Some studies use information of opinions of workers themselves to measure if their occupation matches their educational level. This leads to measurement error, because respondents have the tendency to overestimate the required skill-level for their job (Brunello & Wruuck, 2019). The study of Pellizzari and Fichen (2017) show that the prevalence of self-reported mismatch is much higher than it actually is (Figure 2). Because employers base their decisions on criteria they can observe like educational level (Chevaillier & Duru-Bellat, 2017), this study takes a different approach on measuring mismatch on the Dutch labour market using objective data like educational level and occupational level.
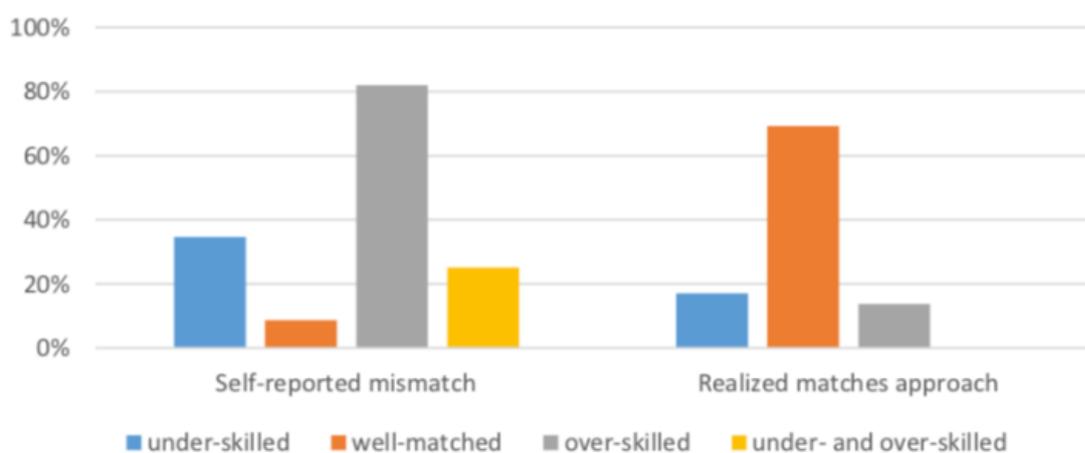

Figure 2: Self-reported mismatches compared with realized matches approach (Pellizzari & Fichen, 2017)

2.2 Theories used

To describe the relation between educational level, occupational level and whether a worker is well-matched or mismatched, the Human Capital Theory (HCT) is used. Whether some is well-matched or mismatch, is from now on referred to as the quality of employment. To describe the relation between quality of employment and well-being, and other related factors influencing well-being, the social determinants of well-being (SDW) are used. Both theories will be explained and linked to the current study.

2.2.1 Human Capital Theory (HCT)

The HCT has an economic and social importance. Human capital refers to the knowledge, expertise and skill an individual can accumulate through education and training (Swanson et al., 2001). The HCT argues that education and training is the most important investment in human capital. Investment in education and training results in increased learning skills. With these increased learning skills, it is possible to increase productivity. Resources and input influence education and training. Resources are the total capacity that individuals possess in the population. This influences the effectiveness of education and training in outcomes. The last step in the HCT is that increased productivity will increase future outcomes for an individual (Swanson et al., 2001).

2.2.2 Social Determinants of Well-being (SDW) approach

There are many factors influencing well-being. First, well-being is defined as a measure of the quality of life of an individual (Naradda Gamage, Kuruppuge & Nedelea, 2017). The literature gives no exact method to measure well-being of individuals. Well-being is considered as a broader concept than just economic or material well-being. Researchers and policy makers recognize well-being as a multidimensional concept (Naradda Gamage et al., 2017). The SDW approach provides different factors influencing well-being. The social determinants of well-being are captured in the Dahlgren and Whitehead (1991) model and explains how health or well-being of an individual is dependent on different factors like individual lifestyle factors, social and community networks, living and working conditions and environmental conditions (Shetty, 2010). The influence of the different factors on well-being is classified from lifestyle factors (most important) to environmental conditions (least important) (Rice & Sara, 2019). Individual lifestyle factors are factors related to the individual themselves, for example smoking or alcohol use. Social factors are defined as factors within

someone's social and community networks. Social factors gain importance as concept that influences well-being (Präg, 2017; Naradda Gamage et al., 2017). Living and working conditions are defined as the access to basic needs like water and sanitation, food and healthcare services. Furthermore, working conditions and education are also included in this concept. The most outer layer are the environmental conditions, which included macroeconomic, cultural and environmental conditions (Bambra et al., 2010).

2.2.3 Conceptual Framework

The aim of this study is to describe the relation between quality of employment and well-being in the Dutch labour market context. The HCT argues that the quality of employment is mostly influenced by education level. Individuals who invest more in education achieve a higher educational level to increase their learning skill level (Swanson et al., 2001). In the current situation of the Netherlands, the demand for higher-educated jobs increases more rapidly than the supply of high skilled jobs (Groot & van den Brink, 2000; Cabys & Somers, 2018; CBS, 2017). From this perspective, it is important to investigate the relation of education and the quality of employment.

The second part of this study is to identify the factors that influence well-being of an individuals in the Dutch labour force. High quality of employment has a positive relation with well-being, but other factors influences well-being as well. Individual lifestyle factors are the most important factors influencing well-being, according to the SDW approach (Rice & Sara, 2019). If an individual is less socially integrated they report lower levels of well-being and higher levels of, for example, suicide (Präg, 2017). Working conditions influencing well-being as well. Quality of employment is classified as living and working conditions in the SDW approach(Bambra et al., 2010). Because the focus of this study is the relation between quality of employment and well-being, this is emphasized separately in this study. Furthermore, individuals with a higher occupational level report better satisfaction of their needs and so higher levels of well-being (Batinic, Selenko, Stiglbauer & Paul, 2010). In addition, self-employed and higher educated report higher levels of well-being (Warr & Inceoglu, 2018). The relation between the different factors of the SDW approach and the quality of employment will be described for the Dutch labour market context. The factors of the SDW approach influence well-being, resulting in the following conceptual model (Figure 3):
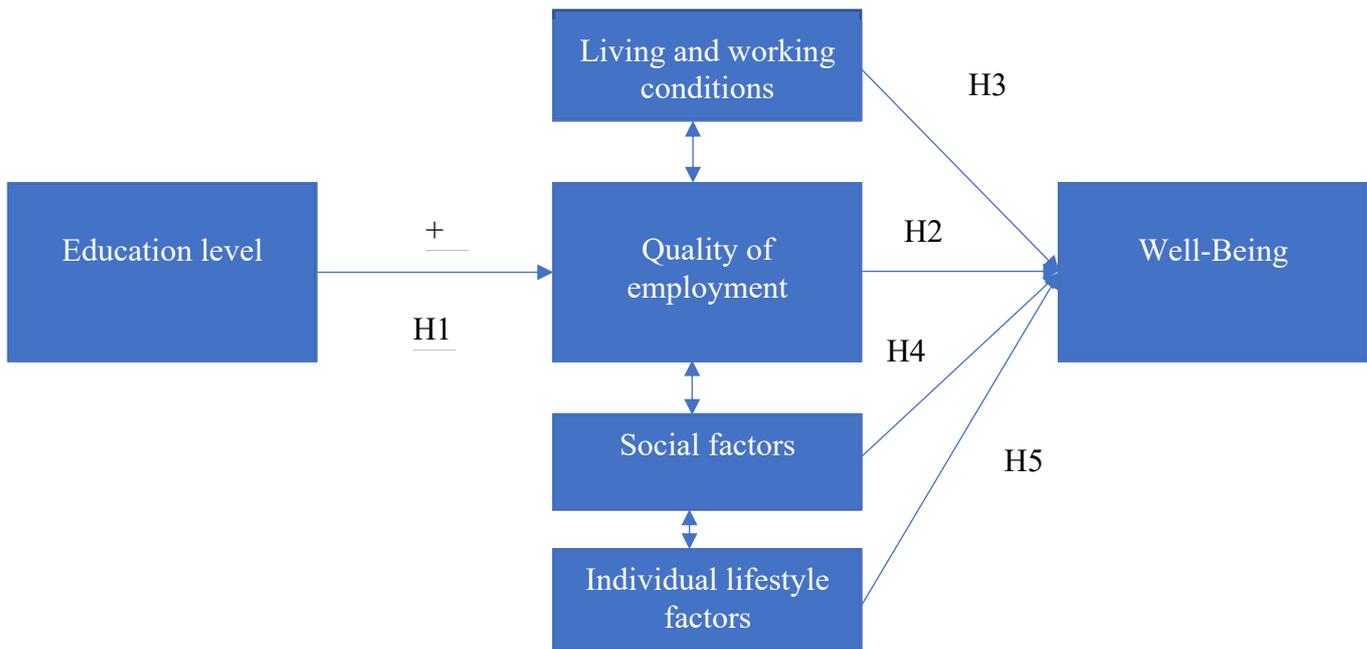
Figure 3: Conceptual Model. HCT and SDW approach combined.

2.3 Research Questions:

The aim of this study is to describe the relation between quality of employment and well-being in the Dutch labour market context. In order to investigate this, first the quality of employment must be described. The literature discussed in combination with the theoretical framework and the problem statement, the following research questions and hypotheses are formulated:

Is quality of employment influenced by educational level and to what extent does the social determinants of well-being influence the well-being in the Dutch labour force and how does it relate to quality of employment?

H1: Individuals of the Dutch labour force with a tertiary education level have a higher quality of employment than individuals of the Dutch labour force with a secondary or primary level of education.

H2: A better quality of employment positively influences well-being of the Dutch labour force.

H3: Positive living and working conditions positively influences well-being of the Dutch labour force.

H4: More accessibility of social factors positively influences well-being of the Dutch labour force.

H5: Positive lifestyle factors positively influences well-being of the Dutch labour force.

H6: Quality of employment does not have the biggest influence on the well-being of the Dutch labour force if the other social determinants of well-being are included.

3. Methods

3.1 Study Design

Quantitative data from the European Social Survey (ESS) was used to conduct this study. The ESS is a biennial cross-national survey of attitudes and behaviour, representative of all persons aged 15 and older resident within private households in several European countries (ESS, n.d.). The most important aims of the ESS are mapping stability and changes in social structure, circumstances and attitudes in Europe and interpreting how Europe's social, political and moral structure changes (ESS, n.d.). The ESS in the Netherlands is conducted every two years through computer assisted personal interviewing (CAPI) and contains data from 2001 (ESS, n.d.). Only data from the Netherlands were used in this study. The ESS meets ethical standards using strict rules regarding the survey and ethical committees supervising this (ESS, 2017). The ESS is recognized of its world-leading quality and relevance and was awarded several prizes. Since 2002, 3.000 publications using ESS data have been published and 80.000 registered users use the data of the ESS (Eikemo, Bambra, Huijts & Fitzgerald, 2017).

3.2 Sampling:

Important to note is that all respondents are born Dutch individuals who are currently employed in the Netherlands. The focus of this study therefore is on Dutch individuals in the Dutch labour market. Immigrant workers in the labour market suffer from skill mismatch, with the negative consequences of well-being as well (Piracha & Vadean, 2013), but they are not included in this study.

The total dataset of the ESS consists of 1673 respondents. To prepare for data-analysis, every respondent older than 67 or younger than 15 or whose age data is missing (N=336) was excluded, because the study population is the Dutch labour force. Secondly, the data of people already in retirement (N=48) was excluded. Thirdly, respondents with missing

data in current occupation or educational level (N=49) were excluded. Fourthly, any respondents with missing values on the independent variables and the dependent variables of this study (N=13) were left out. This results in a sample of 1227 working individuals who completely filled in the ESS. The mean age is 42 (SD=14.32; range 15-66) years old and 51,9% is female.

3.3 Operationalisation:

Quality of employment is used as both dependent and independent variable in this study. Quality of employment is classified as well-matched (value=1; N=831) and mismatched (value=0; N=408). First the sample needed to be classified in occupations and educational level according to the ISCED (1=primary level (ISCED 0-2); 2= secondary level (ISCED 3-4); 3=tertiary level (ISCED 5-8)) and the ISCO major groups (1= unskilled; 2=low-skilled; 3= high-skilled) (Barsoum et al., 2014). Second, the well-matched and mismatch respondents of the sample were classified when educational level and ISCO major group is equal.

3.3.1 Dependent variable:

The overall well-being of the respondent is operationalized by three different items in the ESS. According to different studies of the well-being of an individual the perceived general health, perceived happiness and perceived life satisfaction are often used to measure the variable well-being (Naradda Gamage et al., 2016; Friedland & Price; 2003) . The level of perceived happiness and perceived life satisfaction is operationalised on a 11-point scale measuring (0) extremely unhappy/dissatisfied till (10) extremely happy/satisfied. Preparing for data-analysis, the variables have been recoded into extremely unhappy (1; values between 0 and 2), unhappy (2; values 3 and 4), average (3; values 5 and 6), happy (4; values 7 and 8) to extremely happy (5; values 9-10). The same has been done for the variable perceived life satisfaction.

The level of perceived general health is operationalised on a 5-point scale measuring (0) very good health till (5) very bad health. Preparing for data-analysis, the measures have to be mirrored into the same variables. To assume that the internal consistency and coherence between the three different items could be used for measuring the overall well-being, the thumb rule is that the Cronbach's Alpha must be over 0,7. For the three items, this assumption is just not met (N=3, α=0,686). If the level of perceived health will be deleted, the assumption is met (N=2, α=0,804). Because the perceived general health is an

important factor in the overall well-being of the study population, this study will include all three items.

3.3.2 Independent variables:

Living and working conditions

Because this study is performed in the labour market context, living and working conditions are defined using education- and occupation level and employment relation. Education levels is operationalised using the International Standard Classification of Education 2011 (ISCED). The education levels in the Netherlands could be classified using the ISCED, which are applied in other quantitative studies worldwide (UNESCO Institute for Statistics, 2012). The education levels used in this study are recoded into tertiary level (1; values 510-800), secondary level (2; values 212-400) and primary level (3; values 0-129) of education (Appendix A)(ESS, 2018).

The occupation levels are classified using the occupation classification principles of ISCO 2008 (CBS, 2020). Using the study of Barsoum and colleagues (2014), occupation levels are recoded into three ISCO major groups. The major groups are high-skilled (1; value 1000-3522), low-skilled (2; values 4000-8350) and unskilled (3; 9000-9629) (Barsoum et al., 2014). The variables age and gender are used as control variables in this study.

Employment relations is the last variable for living and working conditions included in this study. In the ESS, employment relation is classified in employee at an organization (value =1), self-employed (value=2) and "working for own family business" (value=3)."Working for own family business" is merged with self-employment, because other respected surveys like the survey of health, ageing and retirement(SHARE) and Eurostat include this with self-employment as well (Pagán-Rodriguez, 2011; Sohier, 2018).

Social factors

Social factors in this study are operationalised as household size and social activity. Household size is defined as the number of people living regularly as member of the household (scale variable, mean=3.00; *SD*=1,4 and range 1-13). Social activity is defined as how often an individual of the Dutch labour force meets with friends, relatives or colleagues. This is measured using a range from never meeting with friends, relatives or colleagues (value=1) to meeting every day with friends, relatives or colleagues (value=7).

Individual factors

Individual factors influencing well-being of the Dutch labour force is defined in this study by disability. Disability is classified in this study if you are hampered in daily activities due to illness/disability/infirmity or mental problems. The categories range from "Yes, a lot" (value=1), "Yes to some extent" (value=2) to "No" (value=3). This study assumes that people with a disability are generally disadvantaged in their opportunities and this affects people's well-being (Tough, Siegrist & Fekete, 2017). Therefore, the variable is transformed into if you are hampered in daily activities by disability (value; 1=Yes) or not (value; 0=No).

3.4 Data Analysis Approach

Data will be analysed using SPSS statistics version 25. Multiple regression analyses will be carried out to assess the correlation between each independent and dependent variable. The first regression analysis is to test the correlation between education level and the quality of employment. The second part of the study investigates the correlation between quality of employment, the other social determinants of well-being and the perceived well-being. All actions in SPSS are described in a syntax file, provided in Appendix B.

3.4.1 Assumptions

In order to do a regression analyses the data must meet a number of assumptions. The first assumption is that the data is randomly selected. The ESS in the Netherlands is conducted every two years through computer assisted personal interviewing (CAPI) and contains data from 2001 and onwards (ESS, n.d.). Every potential respondent of the ESS target population should have a larger than zero probability of being selected into the sample (Lynn, Hader, Gabler & Laaksonen, 2004). Because the Netherlands have a reliable list of addresses available for social research (Lynn et al., 2004), we can argue that the coverage of the sample for the Dutch study population was of high quality, random selected and distributed normally.

The second assumption is that the dependent variables are normally distributed. Because in the first multiple regression the dependent variable is a dummy-variable, the data shows that quality of employment is not normally distributed. Nevertheless, this study continues to perform a multiple regression, because the regression function in SPSS adjust for the violation of the assumption. In the second multiple regression, the data shows that

the dependent variable of well-being is normally distributed, but a little bit skewed to the left side.

The second assumption of linearity between the dependent and independent variables. In the first regression analyses the dependent variable is quality of employment and the independent variable is education level. Furthermore, the scatterplot of the dependent and independent variables assumes there is linearity between the variables. For the second part of the study, regression analyses are conducted on the dependent variable (well-being) and the independent variables quality of employment and the social determinants of well-being. The scatterplot assumes there is linearity between the variables.

The final assumptions to perform a regression analysis are multicollinearity, exogeneity and homoscedasticity. Correlations between all dependent variables are below 0.7, so we argue that the dependent variables are not multicollinear. The dependent variable is influenced by the independent variable (exogeneity) and the Levene's test show that there is homogeneity of variances in all variables (Appendix B).

3.4.2 Procedures

Multiple regression analyses are used to answer the research question. To prepare the data for multiple regression analyses, independent variables needed to be transformed into dummy-variables. For the variables necessary, the reasons why and how the variables are transformed, will now be discussed using the hypotheses.

To test the first hypothesis, a multiple regression analysis is conducted between dependent variable quality of employment and independent variable education level. Education level consist of three categories. To perform multiple regression, education levels has to be transformed into two dummy-variables. The first dummy variable consists of individuals of the Dutch labour force with secondary education as their maximum level of education (values; 1=Yes, 0=No). The second dummy variable consists of individuals of the Dutch labour force with primary education as their maximum level of education (values; 1=Yes, 0=No).

To test the second hypothesis, a simple regression analyses is conducted. The dependent variable well-being will be influenced by the independent variable quality of employment.

To test the third hypothesis, multiple regression is used with the dependent variable well-being and independent variable living and working conditions and quality of

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employment. Education level, occupation level and employment relation are used to describe the living and working conditions of an individual of the Dutch labour market. Education level is transformed into the dummy variable with tertiary education as their maximum level of education (values; 1=Yes, 0=No). For occupation level, one dummy-variable is formed: Individuals with high-skilled occupation (values; 1=Yes, 0= No). Employment relations are transformed into self-employed (value=1) and employee in an organization (value=0).

To test the fourth hypothesis, the fourth multiple regression analyses is conducted. The dependent variable well-being will be influenced by the independent variable social factors and quality of employment. Social factors in this study is defined through household size and social activity.

To test the fifth hypothesis, a multiple regression analyses is conducted. The dependent variable well-being will be influenced by the independent variable lifestyle factors and quality of employment. Lifestyle factor is defined by disability (values; 1=Yes, 0=No).

Finally, to answer the last hypothesis, all independent variables that influence well-being are merged into one model. Multiple regression analysis is used to predict which social determinants of well-being have the most correlation with the dependent variable well-being. Furthermore, it shows in what way the social determinants of well-being influence the relation between quality of employment and well-being.

4. Results

The correlation matrix in Table 2 shows the correlation between all used variables on the dependent variables. The results are shown in Table 2:

	OVERALL WELL-BEING	QUALITY OF EMPLOYMENT (H1)
QUALITY OF EMPLOYMENT	0.121**	-
LIVING AND WORKING CONDITIONS		
TERTIARY EDUCATED	0.113**	0.309**
SECONDARY EDUCATED	0.096**	-0.241**
PRIMAIRY EDUCATED	-0.035	-0.136**
EMPLOYMENT RELATION	-0.069**	
HIGH-SKILLED OCCUPATION LEVEL	0.096**	
SOCIAL FACTORS		
HOUSEHOLD SIZE	0.119**	
SOCIAL ACTIVITY	0.156**	
INDIVIDUAL FACTORS		
DISABILITY	-0.381**	
CONTROL VARIABLES		
AGE	-0.086**	
GENDER	-0.037	

Table 2: Spearman's Rho correlation. **=Correlation is significant at the 0.01 level (2-tailed).

Table 2 shows that the strength of the correlation between the used variables is weak, but significant. The variables gender and primairy education level have no significant relation with well-being.

The first hypothesis is tested by a multiple regression analyses with the quality of employment as dependent variable and educational level as independent variable. The results show that education level does have a significant ($p < 0.001$) relation with quality of employment. If the formula is filled in, the following regression formula is formed (adjusted R squared = 0.099):

Y(quality of employment) = 0.844 – 0.279*(Secondary educated) – 0.427 * (primairy educated)

Education level is a significant predictor for quality of employment; when the level of highest education decreases, the chances of being mismatch increases. The first hypothesis is therefore confirmed.

Hypothesis 2 is tested by a simple regression analyses with well-being as dependent variable and quality of employment as independent variables. Quality of employment is operationalised in mismatched and well-matched individuals. The results show that quality of employment is a significant predictor of well-being (Table 3). A higher quality of employment positively influences well-being. We can conclude that this hypothesis is confirmed.

Hypothesis 3 is tested by a multiple regression analyses with well-being as dependent variable and living and working conditions and quality of employment as independent variables. Living and working conditions are operationalised as highest education level, highest current occupation level and employment relation. The variable with the highest p-value, tertiary educated people (p=0.219), is excluded and the employment relation remained insignificant (p=0.082). Therefore, employment relation is excluded as well. The results show that quality of employment and highest occupation level are significant predictors of well-being (Table 3). A high level of occupation positively influences the level of well-being. We conclude that the second hypothesis is confirmed.

Hypothesis 4 is tested by a multiple regression analyses with well-being as dependent variable and social factors and quality of employment as independent variables. The social factors are operationalised as household size and social activity. The multiple regression analyses show that the social factors are significant predictors of well-being (Table 3). An increase in household size or social activity positively influences well-being. We can conclude that the third hypothesis is confirmed.

Hypothesis 5 is tested by a multiple regression analyses with well-being as dependent variable and individual factors and quality of employment as independent variables. Individual factors are operationalised in of someone is hampered in daily activities by disability. The results show that disability is a significant predictor of well-being (Table 3). If someone is hampered in daily activities by disability, this has a negative influence on their well-being. We can conclude that the hypothesis is confirmed.

Hypothesis 6 is tested by a multiple regression analyses with well-being as dependent variable and all the social determinants of well-being, including quality of employment, as

independent variables. The results show that quality of employment still is a significant predictor of well-being even if the other variables are included (Table 3). To compare the different variables, the standardised coefficients are shown in the table. We can conclude that the hypothesis is confirmed.

	HYPOTHESIS 2:	HYPOTHESIS 3:	HYPOTHESIS 4:	HYPOTHESIS 5:	HYPOTHESIS 6:
EMPLOYMENT QUALITY	0.118**	0.115**	0.114**	0.089**	0.085**
LIVING AND WORKING CONDITIONS					
OCCUPATION LEVEL		0.100**			0.072**
SOCIAL FACTORS					
HOUSEHOLD SIZE			0.132**		0.081**
SOCIALLY ACTIVE			0.153**		0.127**
INDIVIDUAL FACTORS					
DISABILITY				-0.395**	-0.366**
R-SQUARED	0.014	0.024	0.056	0.169	0.196
ADJUSTED R-SQUARED	0.013	0.022	0.053	0.168	0.192
SIGNIFICANCE OF R-SQUARE CHANGE	0.000	0.000	0.000	0.000	0.000

*Table 3: Standardised Coefficients of well-being with different independent variables, classified per hypothesis. **=Correlation is significant at the 0.01 level*

5. Discussion

5.1 Findings

The results of multiple regression analysis to test the first hypothesis, show that there is a significant relation between education level and quality of employment. Using the regression formula, tertiary educated people report the highest level of estimated well-matched employment ($Y^=0.844$), followed by secondary educated people ($Y^=0.565$) and primairy educated people ($Y^=0.417$). This is confirmed in the HCT, that argues that education level is a factor that influences the outcomes of individuals (Swanson et al., 2001), in this case quality of employment. The HCT argues that investment in education results in an increase of outcome prospective (Swanson et al., 2001). This relation is confirmed in this study.

The second part of this study was to analyse the relation of different determinants of well-being. First the relation between independent variable quality of employment and dependent variable well-being is analysed. Well-matched individuals report higher scores of well-being than mismatched individuals. This positive relation was found in the UK (Heyes et al., 2017), but this study shows the same results for Dutch individuals in the labour force.

The results show that the living and working conditions have a positive influence on well-being as well (Hypothesis 3). Occupational level is the only significant predictor of well-being. People working in high skilled occupations report a higher level of well-being, regardless if they are well-matched or mismatched. The theory explains this relation as well. Individuals with a higher occupational level report better satisfaction of their needs and so higher levels of well-being (Batinic et al., 2010).

Household size and social activity both have a positive significant influence on well-being (Hypothesis 4). If household size increases, the reported well-being of individuals increases as well. The same can be argued for social activity. Literature and the SDW explain that an increase of social contacts positively influences well-being (Präg, 2017) and this is confirmed in this study. An increase in household size or social activity, predicts more positive well-being outcomes.

The results of the fifth regression analyses (Hypothesis 5) show a negative relation between disability and well-being. This entails that if someone experiencing some form of disability, they report lower levels of well-being. The relation is negative, because disability is a negative lifestyle factor. Präg (2017) argues that chronic conditions, like disability, are the most crucial threats to well-being nowadays. The relation between the social determinants of well-being in combination with the quality of employment on well-being are discussed below.

Comparing hypothesis 2 till 5, we see that the relation between quality of employment and well-being changes. When different determinants of well-being are included in combination with quality of employment, the relation changes. The results show that individual lifestyle factors influence well-being the most. This result is supported by the SDW approach, which indicated that individual factors are the most important factors influencing well-being (Rice & Sara, 2019). Furthermore, social factors are stronger predictors of well-being than the quality of employment as well. This is in line with the SDW approach, because quality of employment is conceptualised as working condition (Rice &

Sara, 2019). In addition, the results show change in the relation of quality of employment and well-being when more factors are included. When individual lifestyle factors are included, the influence of quality of employment on well-being decreases the most. When included all variables, factors influencing well-being are best described (highest adjusted R-square). After individual lifestyle factors and social factors, quality of employment influences well-being the most.

5.2 Strengths and limitations

5.2.1. Internal validity

Regarding the relation between educational level and quality of employment, the model does not have a big predictive value. Nevertheless, the results are significant. This indicates that educational level has a relation with quality of employment. Of course, we know from the literature that quality of employment is also caused by other factors, but this study shows that educational level is a factor that influences quality of employment.

Many factors are used to measure well-being. They are classified using the SDW approach. This approach explains that the variables used in this study all affect well-being (Swanson et al., 2001). Nevertheless, the final model predicts 19,2% of the reported well-being is explained by the used variables. Firstly, this is due to the fact that not all factors of the SDW approach are included in the model. The SDW approach argues that environmental factors affect well-being as well. Because this study is focussed on Dutch individuals in the labour market context, the assumption was made that all environmental factors are equal for all respondents. Including environmental factors would expand the predictive value. The living and working conditions which influence well-being is operationalised as occupation level and quality of employment in the used model.

Furthermore, most of the variables are operationalised as dummy-variables with their strengths and limitations. Due to the dummy-variables, this study was able to get the most complete and predictive view of the current situation in the Netherlands. Nevertheless, dummy-variables causes the model to be less accurate, because dummy-variables are operationalised as binary variables.

The SDW approach to determine factors that influence well-being itself has their strengths and limitations as well. Williams (2003) argues that the SDW approach key concept is to make a link between complex relationships between economic conditions, social factors

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and individual behaviour. The critique on the SDW approach is that mechanisms that produce these factors are not explored in more detail (Williams, 2003). This limitation is mitigated to combine the SDW approach with the HCT, to explore the mechanisms that causes skill mismatch on the Dutch labour market. Therefore, this study provides a more complete picture of the current situation regarding skill mismatch on the labour market.

Finally, the dependent variable well-being is operationalised using three variables, with a Cronbach's alfa of 0.667. It is common that acceptable reliability is achieved if the Cronbach's alfa is above 0.7. Nevertheless, some quantitative studies use the acceptable value of Cronbach's alfa of 0.6 (Taber, 2018). If the level of perceived health was deleted, the assumption is met (N=2, α=0,805). If perceived health was excluded, we argue that an accurate operationalisation of well-being was not met. Furthermore, with the limited variables in the ESS measuring well-being it was necessary to include perceived health as item to measure well-being.

5.2.2. External validity (Generalize to other study populations)

This study is performed in a labour market context using data from the ESS. The ESS is recognized of its world-leading quality and randomisation is guaranteed (Eikemo et al., 2017). Because of the specific study population of this study and large number of respondents (N=1227), we can argue that this study could be generalized for the whole Dutch labour force. Immigrants, for example, are not included in this study. Other studies argue that immigrants are in general more sensitive for skill mismatch than natives and this will be an interesting topic for future research (Piracha & Vadean, 2013).

5.2.3. Ecological validity and recommendations

The SDW approach is also used on policy level. The different determinants classify the field in which policy makers should address their policies interventions (Rice & Sara, 2019). With the specific study population and the chosen theoretical model, the results of these studies can be generalized into practise. Furthermore, this study uses objective data like education- and occupation level to provide a clear definition of mismatch in this study. The prevalence of self-reported mismatch is much higher than it actually is (Pellizzari & Fichen, 2017). Therefore, the results are easy to be interpreted by policy makers and makes it more useful in practise.

The results show that individual factors like disability and social factors have a greater influence on well-being of the Dutch labour force. Effective policies can reduce skill

mismatch and the consequences of skill mismatch for well-being (McGowan & Andrews, 2015). First of all, the first part of this study shows that education level positively influences skill mismatch; individuals with higher educational levels are less sensitive for skill-mismatch. The current Dutch policies to increase education level to prevent mismatch is in this case justified. But does a better quality of employment resolve the problem of well-being consequences for the Dutch labour force? This study shows that there are more important factors influencing well-being. In conclusion, future Dutch policies should focus on the individual and social factors to improve well-being in the Dutch labour market context. Policies regarding living and working conditions in the Dutch labour market, this study proves that quality of employment is the most important factor and deserves more attention.

5.3 Conclusion

The purpose of this study is to answer the research question: *Is quality of employment influenced by educational level and to what extent does the social determinants of well-being influence the well-being in the Dutch labour force and how does it relate to quality of employment?*

Educational level does influence the quality of employment. The study shows that having a higher level of education, the chances of good quality of employment improves. It is important to note that there are other factors influencing skill-mismatch as well and future research has to be done to create a more complete picture of factors influencing quality of employment.

Individual and social factors are the most important factors in this study influencing well-being. Future Dutch policies focussing on improvement of well-being in the Dutch labour market context, individual factors must have top priority. The results show that it is the factor influencing well-being the most. In combination with quality of employment, the correlation between quality of employment and well-being drops the most when including the individual factor disability. Furthermore, social activity proves to be a more important factor influencing well-being than quality of employment. Focussing on working and living conditions inside the Dutch labour market context, this study shows that quality of employment is the most important factor influencing well-being.

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7. Appendix

Appendix A: Education classification in the Netherlands according to the ISCED.

Primary education level is classified in the levels 0-129, secondary education level is classified in the levels (212-422) and tertiary education level is classified as 510-800 (ESS, 2018).

2.2.2 Construction of EDULVLB on the basis of country specific variables specified in section 2.1

Country specific categories	EDULVLB
1. Basisschool niet afgemaakt	0 Not completed ISCED level 1
2. Alleen basisschool afgemaakt	113 ISCED 1, completed primary education
	129 Vocational ISCED 2C < 2 years, no access ISCED 3
3. LBO, VBO, LEAO, LTS ambachtsschool, huishoudschool, LHNO, VMBO (niveaus 1-3 basisberoepsgericht, kaderberoepsgericht, gemengd) afgemaakt	212 General/pre-vocational ISCED 2A/2B, access ISCED 3 vocational
4. MULO, ULO, MAVO, VMBO (niveau 4; theoretische leerweg), HAVO jaar 3-4; VWO jaar 3-5 afgemaakt	213 General ISCED 2A, access ISCED 3A general/all 3
	221 Vocational ISCED 2C >= 2 years, no access ISCED 3
	222 Vocational ISCED 2A/2B, access ISCED 3 vocational
	223 Vocational ISCED 2, access to ISCED 3 general/all
5. MBO niveau 1 afgemaakt (duur <2 jaar)	229 Vocational ISCED 3C < 2 years, no access ISCED 5
	311 General ISCED 3 >=2 years, no access ISCED 5
6. HAVO, MMS, MSVM afgemaakt	312 General ISCED 3A/3B, access ISCED 5B/lower tier 5A
7. VWO, HBS, atheneum, gymnasium afgemaakt	313 General ISCED 3A, access upper tier ISCED 5A/all 5
8. KMBO, leerlingwezen, MBO, MEAO, MTS afgemaakt (duur 2-3 jaar) 9. MBO niveau 2 en 3 afgemaakt (duur 2-3 jaar)	321 Vocational ISCED 3C >= 2 years, no access ISCED 5
10. MBO niveau 4 afgemaakt (duur 4 jaar)	322 Vocational ISCED 3A/3B, access 5B/lower tier 5A
	323 Vocational ISCED 3A, access upper tier ISCED 5A/all 5
11. MBO-plus voor havisten	412 General ISCED 4A/4B, access ISCED 5B/lower tier 5A
	413 General ISCED 4A, access upper tier ISCED 5A/all 5
	421 ISCED 4 programmes without access ISCED 5
	422 Vocational ISCED 4A/4B, access ISCED 5B/lower tier 5A
	423 Vocational ISCED 4A, access upper tier ISCED 5A/all 5
12. Propedeuse WO, OU-certificaat	510 ISCED 5A short, intermediate/academic/general tertiary below
13. Korte HBO-opleiding einddiploma (2 of 3 jaar)	520 ISCED 5B short, advanced vocational qualifications
14. Bachelor HBO, kweekschool, PABO, conservatorium, MO-akten afgemaakt	610 ISCED 5A medium, bachelor/equivalent from lower tier tertiary
15. Bachelor universiteit afgemaakt	620 ISCED 5A medium, bachelor/equivalent from upper/single tier
16. HBO: Master's degree, tweede fase opleidingen, Post HBO- opleidingen, pre-master onderwijs voor HBO	710 ISCED 5A long, master/equivalent from lower tier tertiary
17. WO/universiteit: Master's degree, tweede fase opleidingen, ingenieur, meester, doctorandus	720 ISCED 5A long, master/equivalent from upper/single tier tertiary
18. Doctoraat / gepromoveerd	800 ISCED 6, doctoral degree
5555 (Anders)	5555 Other

Appendix B: Syntax file of SPSS output

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