# Sport, an engine to empower youth wellbeing?

What sport participation can mean for young people in poverty situations in the Netherlands.



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# Preface

This thesis lying in front of you is the result of a long challenging journey. The last year of primary school my teacher told me in presence of my parents that I would never graduate from university, maybe not even go to university. Thanks to my dad who had unlimited amounts of faith in me, I was allowed to go to the secondary school I envisioned myself at.

I started secondary school on the lowest level (4 years VMBO) with not a lot of faith in myself. I managed to fight my way through and got to higher general secondary school (2 years HAVO). When I graduated I knew what I wanted to do, help people, something that was central in my life. However, I was not sure how to. I got accepted at the HAN (University in Nijmegen), with creative therapy, a mixture of psychology and art. After finding out that this education was too creative for me, I decided to quit without any certificate. Sitting at home was not for me, so as soon as I quit the study I started to work at a retail shop, however, this was not even slightly challenging. I had to continue what I started, so I made my second choice, leisure management at NHTV. After the first week of classes I was sure, this was what I wanted to do! Not so much the organization of parties, but the social side, the impacts leisure and leisure choices can have on peoples life, the more 'serious' side of leisure. After obtaining my degree I could not be happier. But I wanted more, I wanted to know why do people what they do and what makes us happy? I enrolled for the pre-master and master Leisure Studies at NHTV, and a whole new world opened to me. I have learned so many interesting and .. things in the last two years. Thanks to this program, I have been privileged to meet a great variety of inspiring and wonderful individuals, and accomplish things, I never thought I could myself.

Doing the count, this indeed means I managed to spend 14 years of my life from the start of secondary school to this right moment. In the Netherlands, the quickest way to get to this point is 9 years.. Let's say I gained a lot of experience through this 5 extra years (honestly – summer course in USA, internship at the Oxfordshire sports partnership, final thesis at the Battle of Britain Memorial in Folkestone, presented bachelor thesis at the World Leisure Conference in Alabama, internship at Mulier Instituut, presenting this master thesis at the at the World Leisure Conference in South Africa, and so on). I have no regrets.

The start of this thesis was not easy (including the 5 hours of travel time). Writing my thesis on poverty has been rewarding but yet very challenging, it made me reflect many times on my own situation, which makes me feel very fortunate. Also to read and write about a topic as life satisfaction made me think about how satisfied I am with life, and what I could do (sport participation?!).

I could not have done this with the trust, support and encouragement of a variety of people. A few words of special thanks to: Adriaan van Liempt, my 'stand-in' supervisor who I have known for a few years now, who introduced me to statistics and has made me develop a passion for the subject. Bertine Bargeman, who has been there the past two years as both academic as personal support, and Kirsten Stam, who understands and shares my passion of 'playing' with datasets until late night. Thanks to everyone for believing in me, even at moments when I did not believe in myself. Not only during the thesis period but also the years before that. Also Jan-Willem van der Roest, for overloading me with new ideas and positive thoughts, and motivating me when others did not. Thank you for giving me the opportunity and freedom to execute this research, and always being ready to help.

I would like to thank the unlimited support of my mum and dad, who have always encouraged me to challenge myself and not let others tell me something is too difficult or too ambitious. I could not have achieved what I achieved today without you. Also my friends, who I bothered with my enthusiasm for this thesis way too much – thank you for coping with me.

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Lizzy Klijs 15<sup>th</sup> of August, 2016

# Contents

| ABSTRACT  | 8  |
|---|----|
| 1 INTRODUCTION  | 9  |
| 1.1 RELEVANCE   | 11 |
| 1.2 OUTLINE   | 12 |
| 2 THEORETICAL FRAMEWORK   | 13 |
| 2.1 MEASURING POVERTY   | 13 |
| 2.2 DEFINING SPORT PARTICIPATION  | 14 |
| 2.3 SUBJECTIVE WELL-BEING EXPLAINED   | 14 |
| 2.3.2 LIFE SATISFACTION   | 15 |
| 2.4 THE RELATIONSHIP OF POVERTY AND WELL-BEING  | 16 |
| 2.5 THE RELATIONSHIP OF SPORT AND WELL-BEING  | 17 |
| 2.6 THE MEDIATING ROLE OF SOCIAL EXCLUSION IN THE RELATIONSHIP BETWEEN SPORT AND WELL-BEING | 18 |
| 2.6.1 INTERPRETATION OF SOCIAL EXCLUSION  | 19 |
| 2.7 THE MEDIATING ROLE OF HEALTH EFFECTS IN THE RELATIONSHIP BETWEEN SPORT AND WELL-BEING   | 20 |
| 2.7.1 OBJECTIVE HEALTH  | 21 |
| 2.7.2 Subjective health   | 22 |
| 2.7.3 Emotional health  | 22 |
| 2.8 CONCLUSION  | 23 |
| 2.9 CONCEPTUAL MODEL / RESEARCH MODEL   | 24 |
| 3 METHODS   | 25 |
| 3.1 MULIER INSTITUUT  | 25 |
| 3.2 DATASET CILS4EU   | 25 |
| 3.3 OPERATIONALIZATION OF INDEPENDENT VARIABLES   | 26 |
| 3.3.1 MEASURING SUBJECTIVE POVERTY  | 26 |
| 3.3.2 MEASURING SPORT PARTICIPATION   | 26 |
| 3.4 OPERATIONALIZATION OF DEPENDENT VARIABLE  | 26 |
| 3.4.1 MEASURING SUBJECTIVE WELL-BEING   | 26 |
| 3.5 MEDIATORS   | 26 |
| 3.5.1 MEASURING SOCIAL EXCLUSION  | 26 |
| 3.5.2 MEASURING OBJECTIVE HEALTH  | 27 |
| 3.5.3 MEASURING PERCEIVED HEALTH  | 28 |
| 3.5.4 Measuring emotional health  | 28 |
| 3.6 Control variables   | 28 |
| 3.7 ANALYTIC STRATEGY   | 28 |
| 3.7.1 Factor analysis well-being  | 29 |
| 3.7.2 Factor analysis social exclusion  | 30 |
| 3.7.3 Factor analysis emotional health  | 30 |
| 3.7.4 Analyzing hypotheses  | 31 |
| 4 RESULTS   | 33 |

| 4.1 DESCRIPTIVE ANALYSIS   | 33 |
|--|----|
| 4.2 BIVARIATE ANALYSIS: CORRELATION  | 34 |
| 4.3 REGRESSION ANALYSIS  | 35 |
| 4.3.1 EXPLAINING WELL-BEING BASED ON POVERTY   | 35 |
| 4.3.2 EXPLAINING SPORT PARTICIPATION BASED ON POVERTY                                | 36 |
| 4.3.3 EXPLAINING WELL-BEING BASED ON SPORT PARTICIPATION                             | 36 |
| 4.4 MEDIATION ANALYSES   | 37 |
| 4.4.1 EXPLAINING WELL-BEING BASED ON POVERTY THROUGH SPORT PARTICIPATION             | 37 |
| 4.4.2 EXPLAINING WELL-BEING BASED ON SPORT PARTICIPATION THROUGH SOCIAL INCLUSION    | 38 |
| 4.4.3 EXPLAINING WELL-BEING BASED ON SPORT PARTICIPATION THROUGH OBJECTIVE HEALTH    | 39 |
| 4.4.4 EXPLAINING WELL-BEING ON BASED ON SPORT PARTICIPATION THROUGH PERCEIVED HEALTH | 41 |
| 4.4.5 EXPLAINING WELL-BEING BASED ON SPORT PARTICIPATION THROUGH EMOTIONAL HEALTH    | 41 |
| 4.5 CONCLUSION   | 42 |
| 5 CONCLUSION   | 45 |
| LIMITATIONS & FUTURE RESEARCH  | 46 |
| BIBLIOGRAPHY   | 49 |
| APPENDICES   | 57 |

| List of figures  | Page |
|--|------|
| Chapter 2 Figure 1 Conceptual model A: Explaining well-being from poverty through sport participation    | 24   |
| Chapter 2 Figure 2 Conceptual model B: Explaining well-being from sport participation through benefits   | 24   |
| Chapter 4 Figure 3 Educational level respondents   | 33   |
| Chapter 4 Figure 4 Frequency of sport participation respondents  | 34   |
| List of tables   |      |
| Chapter 3 Table 1 BMI categories according to the Dutch nutrition center                                 | 27   |
| Chapter 3 Table 2 Computed dummy variables BMI   | 27   |
| Chapter 3 Table 3 Correlations scale well-being  | 29   |
| Chapter 3 Table 4 Factor Analysis well-being   | 29   |
| Chapter 3 Table 5 Correlations scale social exclusion  | 30   |
| Chapter 3 Table 6 Factor Analysis Social Exclusion   | 30   |
| Chapter 3 Table 7 Correlations scale emotional health  | 30   |
| Chapter 3 Table 8 Factor Analysis Emotional Health   | 31   |
| Chapter 4 Table 9 Regression poverty on well-being   | 35   |
| Chapter 4 Table 10 Regression poverty on sport participation   | 36   |
| Chapter 4 Table 11 Regression sport participation on well-being  | 37   |
| Chapter 4 Table 12 Output mediation analysis poverty on well-being through sport participation           | 37   |
| Chapter 4 Table 13 Output mediation analysis sport participation on well-being through social inclusion  | 38   |
| Chapter 4 Table 14 Output logistic regression BMI (underweight)  | 39   |
| Chapter 4 Table 15 Output logistic regression (overweight)   | 39   |
| Chapter 4 Table 16 Output logistic regression (obese)  | 40   |
| Chapter 4 Table 17 Output multiple regression BMI on well-being  | 40   |
| Chapter 4 Table 18 Output total effect sport participation on BMI  | 40   |
| Chapter 4 Table 19 Output mediation analysis sport participation on well-being through subjective health | 41   |
| Chapter 4 Table 20 Output mediation analysis sport participation on well-being through emotional health  | 42   |
| Appendices   |      |
| Table 21 Operationalization variables and descriptive statistics   | 58   |
| Table 22 Descriptive statistics of independent, dependent and control variables                          | 60   |
| Table 23 Bivariate analysis: correlations amongst all variables  | 61   |

# Abstract

In the Netherlands, poverty numbers have stagnated after a rise from 2009 to 2013, with a peak in 2013 when 5.4% of the Dutch population was living in poverty (CBS, 2014), showing the importance of research into the effect of the phenomenon. Poverty has an effect on child outcomes (Brooks-Gunn & Duncan, 1997), and therefore on the future of young people. Empirical studies show people living in poverty experience lower levels of well-being (Bayram, Aytac, Aytac, Sam, & Bilgel, 2012; Knies, 2015; Marmot, 2010; Power, et al., 2007), whereas literature has indicated that income does not correlate with well-being levels (Knies, 2015; Ravallion, 2012). Therefore this thesis approaches poverty in a subjective manner, namely the subjective percept of deprivation; people's self-reported experience of living in poverty situations. Especially for young people this measurement is interesting, reporting how they feel rather than using objective numbers.

Literature indicated that sport participation gives positive effects to everyone (Collins, 2004). However, people living in poverty participate less frequently due to either financial or social barriers (Ewing, Gano-Overway, Branta, & Seefeldt, 2002), which can particularly be a disadvantage to young people that are growing up since poverty has a long-term effect, and can be visible for several generations (CBS, 2014). Additionally, a current decline of sport participation amongst this group is noticeable (Tiessen-Raaphorst, van den Dool, & Vogels, 2014).

There is research available showing participation in a certain sport has a positive effect on wellbeing levels (Iwasaki, Zuzanek, & Mannell, 2001; Yao, 2015), but not into sport participation in general (all types of participation). Also, previous research did not uncover what mediated this relationship. Positive effects of sport participation have been defined in the past, such as social inclusion (Bellani & D'Ambrosio, 2011; Coalter, Allison, & Taylor, 2000; Cozzarelli, Wilkinson, & Tagler, 2001; Kelly L., 2011) and health (CBS, 2009; Wankel & Sefton, 1994). It was not yet discovered if this is the reason of people that sport report higher well-being levels.

This study attempted to empirically demonstrate whether young people living in poverty experienced lower levels of well-being. Moreover, this thesis aimed to explain the assumptions that social exclusion, objective, perceived and emotional health are a positive result from sport participation, and impact levels of well-being. This thesis makes use of the CILS4EU dataset in order to first test whether living in poverty influences well-being, and if sport participation mediates this relationship. Secondly, the dataset is used in order to determine what benefits sport participation possibly brings in order to explain these well-being levels. The dataset consists of young people of the age from twelve to sixteen.

The results show that sport participation can contribute to experienced levels of well-being of young people living in poverty situations in the Netherlands (b=0.12, p=<0.01). Additionally, the assumptions that social inclusion (b= 0.01, p=<0.01), perceived (b=0.04, p=<0.01) and emotional (b=0.05, p=<0.01) health are positive effects of sport participation, which explain the higher levels of well-being of young people that sport more frequently are accepted. Objective health (BMI) does not contribute significantly to this relationship.

In this thesis, a relatively new way of measuring poverty has been explored. It is suggested to individuals to consider to include subjective poverty when measuring poverty, since literature shows a contrasting effect of income on well-being. Also more research into the relationship between sport participation and subjective well-being would be interesting, finding out what other variables could be benefits from sport participation. It would be interesting to see more research into different leisure activities that could explain the relation between sport participation and well-being, such as cultural activities. Lastly, this thesis has approached health in a different manner, namely divided into objective, subjective and emotional health.

This thesis can serve as a mean to support organizations such as the jeugdsportfonds to validate what they are doing and create new partnerships in order to also promote the social side of sport participation.

**Keywords**: Subjective poverty, sport participation, well-being, social inclusion, subjective health, BMI, objective health, emotional health, subjective health.

# **1** Introduction

This chapter defines the problem, addresses the general research question in two-fold, discusses the societal and scientific relevance and gives an outline of this thesis.

It is not surprising that poverty in the Netherlands receives increasing amounts of attention. Currently, the Netherlands is facing the challenge of an increase of people living below poverty margins (Kinderombudsman, 2013; Jeugdsportfonds, 2016; Stichting Kinderarmoede , 2016). To put this into perspective, we can say this is 10.4% of all Dutch households (CBS, 2014). What has to be noted is that poverty in the Netherlands is visible in a different way than in countries as for example South Africa. Nearly all people have a roof overhead, have enough to eat and have access to medical care and education. However, poverty is defined as when there are insufficient funds to achieve the level of minimum consumption set by the Central Bureau of Statistics as 'low income threshold' (CBS, 2015).

Poverty can lead to a variety of unfavorable consequences, regardless of its causes. A range of studies clarify that childhood poverty has lifelong consequences. Children growing up in poor families are more likely to become poor adults (CBS, 2015), are more likely to leave school at early age (Moore, Redd, Burkhauser, Mbawa, & Collins, 2009) and have poorer health due to low or unhealthy nutrition intake (Brown & Pollit, 1996). To put this in perspective, one per cent of children who grew up in wealthy situations become poor young adults. 32 per cent of children living in poverty become poor young adults (Ratcliffe & McKernan, 2010). Poverty can manifest itself in a variety of ways, most visible through the different lifestyles and (leisure) choices one makes (Levermore, 2008), meaning one does not have financial or social power to participate in certain (leisure) activities. Low-income means a limitation of choice, and people miss out on the benefits the activities bring. Therefore we assume that people living in poverty make different leisure choices compared to people who live in plenty. Levermore (2008) as well as Reijersberg and Van der Poel (2014) showed that living in poverty has a negative influence on sport and cultural participation. Not only is it important to study how poverty is visible (e.g. by how many and who are living in poverty), but also about the consequences these people face (e.g. lower health levels as stress (Haushofer & Fehr, 2014). Previous studies have indicated that poverty leads to social exclusion and lower health conditions (Hirsch & Spencer, 2008; Kelly & Bartley, 2010).

Formerly, poverty research generally focused on income at a certain point in time (MacPherson & Silburn , 1998), with definitions similar to "A person is poor in any period if, and only if, her or his access to economic resources is insufficient to acquire enough commodities to meet basic material needs adequately" (Lipton, 1997, p. 127). However, after decades of research, poverty is still an object of discussion. Apart from defining poverty being a challenge, a consensus has emerged among researchers; poverty is complex and multidimensional. Therefore new measurement tools should be considered and applied in researching the concept.

Contemporarily, a more dynamic view on poverty has been introduced, becoming not only objective (e.g. looking at income), but also a subjective phenomenon. This can be seen as "the rationale for examining subjective poverty is that people's own opinions about their financial situation should be given some consideration" (Marks, 2007, p. 25). For this reason, this thesis aims to shed light on the paradox subjective poverty, being the extent people feel excluded from activities compared to their peers.

Another phenomenon that is receiving increasing attention in particularly social science research is well-being. Well-being is for the purpose of this study is conceptualized as life satisfaction, as has been done in previous studies (Edginton, Jordan, DeGraaf, & Edginton, 1995; Veenhoven, 2008). This is due to the cognitive nature of life satisfaction, which is a deliberate decision based on several aspects of life (Frisch, 2000). There is a variety of empirical evidence available showing that young people living in poverty situations report lower levels of well-being (Bayram, Aytac, Aytac, Sam, & Bilgel, 2012; Knies, 2015; Marmot, 2010; Power, et al., 2007). This is due to feelings of being disadvantaged (UN, 2007) or limited means to participate in leisure activity (Bayram, Aytac, Aytac, Sam, & Bilgel, 2012). This study attempts to empirically demonstrate if young people living in poverty situations experience lower well-being levels than their peers.

Another relationship explored in literature is the effect of sport participation on well-being. Previous research (Iwasaki, Zuzanek, & Mannell, 2001; Mock, Wilson, Smale, & Hilbrechtb, 2013; Yao, 2015) indicates there is a positive relationship between the two. However, what elements in sport participation could lead to higher well-being levels has not been uncovered yet. Sport participation has proven to have a variety of (positive) consequences, which can possibly explain higher well-being levels. In several cases sport participation is compared to school, being socially and educationally rewarding since especially young people can experiment with different roles and group interactions (Baar, 2012; Biesta, et al., 2001; Coakley, 2009), which can be perceived as benefits of sport. The qualitative study by Reijersberg & Van der Poel (2014) emphasize the importance of sport participation and highlights the effect on young people's future, namely the skills young people develop during sport (e.g. findings from previous studies such as social responsibility, emotional intelligence, (goal) knowledge and social interests (Brunelle, Danish, & Fazio, 2002). However, the study by Reijersberg & Van der Poel (2014) takes a solution-aimed approach, focusing on sport participation of children in poverty and municipal policies. To build on this literature, this thesis intends to extend the research by Reijersberger & Van der Poel (2014) by examining the effectiveness and consequences of sport participation for young people in poverty situations.

Despite the positive effects of sport, participation numbers are declining amongst young people (Tiessen-Raaphorst, van den Dool, & Vogels, 2014). Simultaneously, governmental subsidies and funding are decreasing (Van der Poel, 2016), directly affecting people in poverty situations (Jeugdsportfonds, 2016). This means people are missing out on the benefits sports can bring. Sport has been widely discussed as inclusive (van den Broek, 2008) and leading to a wide variety of benefits such as social inclusion (Coalter, 2010; Kelly, 2011).

One can conclude on the basis of previous research that although it seems that sport participation is the ultimate means to achieve higher well-being levels, this might not always be the case. Competitive sport participation in particular can result in disunity, creating 'winners' and 'losers', which can also lead to exclusion and loss of enjoyment in sport (Kalmijn & Uunk, 2007).

Participation as well as involvement in leisure activities has a favorable effect on physical and mental health through dimensions such as escapism, passion and engagement (e.g. Caldwell, 2005; Scanlan, Babkes, & Scanlan, 2005; Warburton, Nicol, & Bredin, 2006). The research by Saclan et al. (2005) uses sport participation as a variable, saying sport can even serve as escape or coping tool from ordinary life, being completely engaged in the activity (Scanlan, Babkes, & Scanlan, 2005). For example the research by Steptoe & Butler (1996), who studied sixteen year olds, showing frequent sport participation has a positive effect on emotional health, and emotional health had a positive effect on well-being. More positive health levels will lead to a higher well-being (Wankel & Sefton, 1994).

Therefore, the aim of this thesis is to seek answers to the following research questions:

- 1. To what extent is there a relationship between poverty and well-being of young people in the Netherlands, and to what extent can this relationship be explained through levels of sport participation?
- 2. To what extent is there a relationship between the level of well-being and sport participation, and to what extent can this be explained by their levels of social inclusion and health?

This study firstly examines the relationship between poverty and well-being through sport participation and secondly sport participation and well-being through a variety of consequences using the (longitudinal) data of the Children of Immigrants Longitudinal Survey in four European Countries (CILS4EU) panel. The dataset is unique in its kind. It does not only contain information about young people, but also provides data on the household they live in administered by the parents. This makes it possible to not only look at the response of the children, but also at the household situation. The data is collected amongst a specific, not often researched target group; young people with a mean age of 14 and a low standard deviation. Additionally, this group of young people has different ethnic backgrounds, making it an interesting group to study since often is assumed that poverty more frequently occurs among people with ethnic backgrounds (Kinderombudsman, 2013). This study

makes use of data from 2010.

# **1.1 Relevance**

The child poverty foundation in the Netherlands reports that currently 1 on 8 children lives in poverty (below poverty margin), being 600.000 children living in families living in poverty (Kinderombudsman, 2013; Jeugdsportfonds, 2016; Stichting Kinderarmoede, 2016). The CBS reports in 2015 that 720.000 households (10.1% of Dutch population households) live in protracted poverty under the low-income margin (CBS, 2014). Due to the increase of people living in poverty in the Netherlands, social inequality is becoming a growing problem, and simultaneously governments are decreasing overall (sport) subsidies leading to young people in poverty situations having less access to sporting facilities. However, meanwhile 400 million pounds of United Kingdom government funding is invested over 2013 until 2017 in Sport England, the NGB (National Governing Body) in sports. In the Netherlands these numbers are 115 million in 2015, which was 39 million less than in 2014 (Mulier Instituut, 2015). These numbers show the awareness of the importance of sports. However, it does emphasize the decreasing subsidies, directly affecting people living in poverty, who make use of such subsidies. Poverty does not only affect young people's current well-being, but also their future (Gupta, de Wit, & McKeown, 2007). Young people in the Netherlands living in poverty situations have to deal with a variety of challenges. The group has less development opportunities and prospects (Kinderombudsman, 2013), showing the societal relevance. Additionally, the ethical question Gupta et al. (2007) as well as Putnam (2015) raise is social justice; should not all (young) people have the same opportunities? Treanor (2012) also explains the following about the future for young people living in poverty "these inequalities are evident from preschool children through children during the school years, from entry into the labor market to resources for retirement, from mortality rates in later life, and often on to the next generation" (Treanor, 2012, p. 1).

According to Spaaij (2009), sport is accredited to have the potential to make society more equal (Spaaij, 2009). This is due to the open nature of sports, allowing people to communicate with others and ultimately take on different social roles (instead of being perceived as someone living in poverty) that will lead to the development of certain social skills such as tolerance and respect in a collective setting (Svoboda, 1994).

The scientific relevance lies in the gaps of current literature. Where objective poverty measures provide insights into financial situations, subjective measures give insights of desires of humans. Several studies have indicated that new poverty measurements should be developed (Nándori, 2011; Ravallion, 2012). Also the effect of poverty on well-being levels has been discussed in previous research, but mostly in a qualitative manner. Therefore, this research will contribute in a quantitative manner to verify previous findings.

The research by Reijersberg & Van der Poel (2014) focuses on the effect of poverty on young people's future. This research will build upon this study, and will extend it by using well-being as a measure of young people's life satisfaction. This thesis will therefore also contribute to the existing academic literature on well-being in a subjective manner. Also the role of sport participation in the relation of poverty and well-being has not been researched in the past. Literature on the effect of sport participation on well-being is limited; the focus often lies on the effect of sport participation on social cohesion and social capital (Seippel, 2006). However, well-being also impacts domains as researched in social cohesion and social capital (e.g. when one is satisfied with life, learning can be easier as the research of Veenhoven (2008) indicates). Using well-being is more of a long-term measure, a deliberate review of the individual based on several aspects of life (Veenhoven, 2008).

A handful of researchers tried to uncover the relationship between sport and levels of wellbeing (Iwasaki, Zuzanek, & Mannell, 2001; Mock, Wilson, Smale, & Hilbrechtb, 2013; Yao, 2015), where this study will build on. Furthermore, several studies (Fox, 1999; Mock, Wilson, Smale, & Hilbrechtb, 2013; World Health Organization, 2003) are available considering the influence of sport on positive consequences. However, if these consequences impact levels of well-being or if it is solely sport participation that impacts levels of well-being has not been uncovered yet. This thesis accounts for various mediators that possibly influence the relationship between sport participation and well-being. People living in poverty are more often socially excluded than people in wealthy situations (Berghman , 1995; Eurostat, 1998; Moisio, 2002). As previously mentioned, sport participation leads to social inclusion, which is expected to impact people living in poverty. This study also focuses on subjective, objective and emotional health, how one rates health compared to others, the independent measure of BMI scores and emotional health. As mentioned before, objective measures give insights in facts (e.g. BMI), not being influenced by emotions, opinions or feelings, whereas subjective measures are more open to interpretation based on feelings, emotions and aesthetics. Subjective measures might lead to individuals responding in a socially desired matter. Therefore the decision is made to measure the concept health with a combination of subjective and objective measures. The statement "subjective poverty is an understudied aspect of poverty" (Marks, 2007, p. 25) identifies one of the current gaps in literature.

Also, the Mulier Instituut (2013) highlights that there is limited scientific research available into the social relevance of sports (Mulier Instituut, 2013). An aspect that therefore differentiates this study from others is that this study takes a social approach towards the relationship between poverty, sport and well-being. However, in the past years, research has increasingly been focusing on the relationship between physically active leisure and well-being (Iwasaki, Zuzanek, & Mannell, 2001; Fox, 1999; Yao, 2015). However, the focus of this research is often on a particular sport or certain sport groups, and the exact mechanisms of why sport brings the positive consequences is not always uncovered.

Also this thesis does not solely focus on a certain sport, but on frequency of sport participation. It is expected that well-being is affected differently by the amount of participation. In order to understand the relationship between poverty and well-being through sport participation and the relation of sport participation and well-being through social exclusion and health, a quantitative approach has been taken using data from the CILS4EU panel.

This thesis is commissioned by the Mulier Instituut, a scientific research institute which is introduced more broadly in the methodology chapter. The organization can use this research in order to promote the effects of sport participation in a social context, by showing the effect sport can have for young people in poverty situations, and what effect sport has on well-being. Also, this thesis can be an opportunity for the Mulier Instituut to start partnerships to in the future collaborate on research in this area.

# **1.2 Outline**

Chapter 2 gives an insight into leading studies on the constructs of this thesis. This theoretical section starts with measuring and defining poverty and sport participation for the purpose of this study. The following subchapters consist of insight into the topics of well-being, social exclusion and health effects. The third chapter consists of a discussion on data and analyses used for this study, and concludes with a description of analysis strategy. Chapter four reveals the results of the analyses explained as discussed in chapter three, starting with results of the results of the descriptive analyses followed by the results of the bivariate analyses. Lastly the results of the regression analyses and mediation analyses will be presented answering the research questions. The final chapter answers the general research questions and concludes with discussion and recommendations for future research.

# 2 Theoretical framework

This theoretical framework aims to review leading studies in the field of sport and leisure in order to define explanatory factors of the impact of poverty and sport on well-being. Also to establish a theoretical framework for this thesis, defining key terms leading to a conceptual model.

# 2.1 Measuring Poverty

As mentioned in the introduction, the amount of people living below the poverty margin in the Netherlands is approximately 10% of the total population. This amount stagnated, however in the past this number rose rapidly; from 2008 until 2013 the percentage has averagely increased with a stable 5% annually (CBS, 2014). Poverty in the Netherlands might have stagnated, although, as reports indicate, long-term poverty is rising (CBS, 2009; CBS, 2014), showing that people live in poverty for prolonged amounts of time, leading to poverty being passed on for generations (CBS, 2014).

There are various forms of measuring poverty. One method of measuring poverty is looking at poverty thresholds. The Central Bureau of Statistics (CBS) in the Netherlands revises the poverty threshold annually. The poverty line the CBS draws is  $\leq 1,690$  for a couple with one child in 2013 and  $\leq 1,900$  for a couple with two children. Additionally, for single parent households with one child the poverty threshold is drawn at  $\leq 1,350$  and with two children  $\leq 1,530$  (CBS, 2014). However, this method only shows the results for households with up to two children, however, the CILS4EU dataset also consists of households with more than 2 children.

Equivalent to the CBS method is looking at income poverty, correcting for household composition. This is a more dynamic measurement tool than solely looking at an exact number set by the CBS. However, Ravallion (2012) aims to develop a new poverty measurement in his paper. Ravallion (2012) addresses the 'identification problem', saying not all households are identical. Therefore could be looked at the household income, when the household is earning less than 60 per cent of the median national income threshold of the Netherlands, the household is considered poor (Eurostat, 1998). However, certain weights could be given to household members, and the total household income will be divided by the weights. Chosen is not to discuss objective poverty any further within the frame of this thesis, since the focus lies on young people of fourteen years old, who do not control household finances and are not capable of changing the financial situation. Additionally, research shows that income poverty does not influence ones experienced life satisfaction (Knies, 2015). Therefore is looked at subjective poverty, the self-reported level of feeling excluded from certain (leisure) activities amongst young people.

Subjective poverty can be measured according to a variety of indicators. For example by looking at longitudinal data and for instance observing a sudden decrease of income, implying a change in expenditure pattern, which possibly evokes the feeling of living in poverty. Previous studies have developed a format to examine subjective poverty. The paper by Ravallion (2012) defines a 'social subjective poverty line'. Ravallion (2012) says when people are living below a certain point, people consider themselves poor, and when they are above, people do not. This poverty line is individual, meaning it remains difficult to measure subjective poverty in this manner. The author states that poverty is not only about income, but in western countries more about social participation. For example, if there is enough money to pursue 'basic' leisure activities as sports or playing an instrument. The individual will unconsciously compare the self to others, asking the question 'am I disadvantaged compared to ...?' which can lead to subordinated feelings. Ravallion (2012) emphasizes that poverty should be measured according to new ways, rather than solely looking at income poverty (Ravallion, 2012). The research by Nándori (2011) extends this line of reasoning by comparing objective poverty tools (e.g. income poverty) with subjective poverty tools on the Hungarian system. The paper concludes that absolute and relative poverty threshold levels do not directly influence subjective wellbeing levels of individuals; people living in income poverty situations might make ends meet, and make the best of the situation resulting into being as happy as others (Nándori, 2011). However, income poverty could have an influence on levels of subjective poverty. In turn, the author concludes that subjective poverty does influence well-being. People reporting to live in subjective poverty experience

to be disadvantaged (Nándori, 2011), which Sletten (2010) defines as shame and stigmatization of young people's subjective feelings that are connected to poverty. The author does note that poverty has a high impact on leisure behavior (Sletten, 2010).

Not solely poverty influences young people's leisure behavior. For example neighborhood and family influence young people's sporting behavior. When the parents participate in sport, children are often more inclined to sport due to the exemplary role of the parents (Kay & Spaaij, 2012). Also, young people in poverty situations are influenced by the disposable income of parents, family or guardians. The households' income therefore influences leisure choices such as sporting behavior. However, sport participation can be approached and measured in different ways.

# 2.2 Defining sport participation

Sport can play significant role in the lives of young people growing up. Sport can provide a setting where this group can express oneself through bodily practices, establish social identities and develop emotional closeness or distance from other people (Spaaij, Magee, & Jeanes, 2013).

Formerly, difficulties occurred in terms of measuring sporting behavior due to individual perceptions regarding the concept (Biddle, Bull, & Seheult, 1992). One might consider sporting 'frequent' as sporting once a week, yet another might sport three times a week and perceives that as 'frequent'. Additionally the question; what is sport? can be asked. One might perceive walking as sports, for another sport is solely high impact exercise. Especially amongst young people defining sport might be difficult, since some might perceive gymnastics at school as sport, yet others might not.

For the purpose of this study, sport participation will be defined using a combination of the following definitions: Sport is "all forms of physical activity that contribute to physical fitness, mental well-being and social interaction, such as play, recreation, organized or competitive sport, and indigenous sports and games" (United Nations Inter-Agency Task Force on Sport for Development and Peace, 2003) so therefore sport is the "bodily movements produced by skeletal muscles that results in energy expenditure" (Caspersen, Powell, & Christenson, 1985). Research has indicated that there are different effects and consequences amongst solo and group sports (see e.g. (Gavin, 2004; Seippel, 2006), but this thesis will solely focus on frequency of sport participation.

In conclusion, sport participation can have distinctive dimensions such as solo or group participation. However, for the purpose of this study is chosen to define sports on frequency of participation (either doing sports or going to the gym). However, there are people excluded from sporting privileges. Unfavorable (e.g. financial) situations can lead to poverty and might portray sport being for privileged individuals, which can influence experienced levels of well-being of such individuals.

# 2.3 Subjective well-being explained

The terminology on happiness, life satisfaction and well-being are closely related. Globally, well-being is receiving increasing amounts of attention, which can be observed according to the increase of available literature on the subject. Also, governments and federations increasingly pay attention to the phenomenon. For example, the Organization for Economic Co-operation and Development (OECD) has the mission to improve the well-being of people globally by collecting data on well-being and drawing up reports in order to feedback on plans of ministries and governments. The OECD (2015) defines well-being as followed: "Happiness or subjective well-being can be measured in terms of life satisfaction, the presence of positive experiences and feelings, and the absence of negative experiences and feelings. Such measures, while subjective, are a useful complement to objective data to compare the quality of life across countries" (OECD, 2015, p. 2). This definition shows well-being is of subjective nature, primarily consisting of two components; life satisfaction and happiness.

Diener et al. (2009) reviewed the scientific evidence on subjective well-being, explaining the concept as cognitive and affective evaluations of one's life. In earlier research, Diener (1984) explained subjective well-being as an individual matter (Diener, 1984). The opposite notion of objective well-being deals with economic 'goods', political rights and (political) freedom and social relationships

(Bartram, 2011). Objective well-being measures are often indexes such as the Measure of Domestic Progress (Cobb & Daly, 1989), capturing material conditions that influence well-being. However, sport participation is contains characteristics generating a certain cultural value (Wheatley & Bickerton, 2016), making it impossible to measure the phenomenon and its effects on an objective scale. Therefore, objective well-being will no further be discussed within this thesis. Measuring well-being in a more social manner, in contrast to objective well-being, is more about emotional responses and cognitive judgments. The concept well-being, as also the OECD (2015) reports, is often measured as happiness (Iwasaki, Zuzanek, & Mannell, 2001; Nawijn & Veenhoven, 2011; Sato , Jordan, & Funk, 2014; Veenhoven, 2008) or self-reported (life) satisfaction (Frijters, Haisken-DeNew, & Shields , 2004; Verbakel, 2012; Winkelmann & Winkelmann, 1998).

# 2.3.1 Happiness

The concept happiness can, as well-being, be defined as being of highly subjective nature. Historically, the pursuit of happiness started with great names as Socrates, believing happiness can be obtained by human effort. In contemporary society happiness is often referred to as feelings of joy based on a highly individual self-determined measure, leading to a 'happy' and 'satisfied' life (Cloninger, 2004).

Philosophers considered happiness as the ultimate state of being, a personal assessment of such. In positive psychology, happiness is also referred to as feeling good about the self; "feeling good - enjoying life and wanting that feeling to be maintained" (Layard, 2005, p. 12). The definition captures the affective core of happiness and wanting to preserve such, including the person's lived experiences. The research by Veenhoven (2008) shows that happiness is of emotional nature, mainly consisting of feelings and momentary recordings, explanatory for levels of well-being (when one feels happier, might be more satisfied with life). Previous research found that "40% of variance in happiness is attributable to intentional activity" (Nawijn & Veenhoven, 2011, p. 39). Meaning 40% of the difference in the data can be explained through a deliberate choice of activity, meaning freedom of choice ('leisure') is an important contributor to feeling happy. As the study by Nawijn and Veenhoven (2011) also indicates, happiness is highly correlated with life satisfaction, especially satisfaction with health (Nawijn & Veenhoven, 2011). Where the nature of happiness is a momentary recording, life satisfaction is а long-term of well-being (Diener, 2009). measure

# 2.3.2 Life satisfaction

Life satisfaction is a complex concept and sometimes used interchangeably with happiness, which is more of an affective nature. Life satisfaction can be defined as the evaluation of life. The study by Dolcanir et al. (2012) examines well-being in a tourism context, explaining that factors as school, friends and leisure are important indicators of a positive subjective well-being. Dolcanir et al. (2012) say this is due to the nature similar to tourism: being away from home, which also applies to sport participation, often being an out-of-house activity. When people perform out-of-house activities they have more spontaneous social contacts, which are explanatory for higher reported levels of well-being (Dolnicar, Yanamandram, & Cliff, 2012).

The research by Veenhoven (2008) shows that the concept life satisfaction is of more cognitive nature, a deliberate decision based on several aspects of life (e.g. satisfaction with social contacts or cognitive performances) indicating that life satisfaction is a long-term measure. Life satisfaction for this study is perceived as "an individual's subjective evaluations of the degree to which his or her most important needs, goals, and wishes have been fulfilled" (Frisch, 2000, p. 220). This definition shows that life satisfaction does not solely consists of momentary recordings, but being an evaluation by the individual. However, the definition by Neal et al. (1999) shows that life satisfaction is functionally related to satisfaction with all of life's domains and subdomains" (Neal, Sirgy, & Uysal, 1999, p. 154). That definition conveys a more durable quality than the definition of 'happiness', explaining that life satisfaction is a concept that should be measured across different domains. One could question then how subjective well-being could be measured.

The New Philanthropy Capital (NPC) is a charity organization in the United Kingdom directing funding to social welfare bodies. The NPC developed a validated measurement scale in order to measure subjective well-being. The scale is established on the basis of qualitative research where the target group (young people from 11-16 years old) reported that, amongst other variables, satisfaction with life, friends and school lead to higher well-being. These results were followed up with various quantitative studies and a well-being scale has been developed. The scale consists of subdomains that Neal et al. (1999) reported upon, namely life satisfaction, satisfaction with friends, family and school (NPC, 2012).

Despite well-being being a long-term measurement, the concept is influenced by a variety of independent factors. Cohen (2006) found that education makes a large contribution to experienced levels of well-being. The author states that the higher the education, the more intelligent people are, the higher the well-being. Education does not only increase academic learning, but also influences social, emotional and ethical competencies (Cohen, 2006). However, despite the many discussions and counter arguments considering this statement, claiming education does not necessarily have a positive effect on well-being (Sabates & Hammond, 2008). This could be related to the famous quote by Albert Einstein 'the more I learn, the more I realize how much I do not know', learning involves discovery, and that discovery invites new questions, and so on. This shows that education and well-being have an interesting relationship.

In conclusion one can say that in well-being literature most frequently occurring concepts are happiness and life satisfaction. However, what must be noted is that there is a high correlation between the two. Based on the previous discussed literature, this study will focus on life satisfaction since the concept is more consistent across the life course. Also literature indicates that in order to measure different domains of life satisfaction one should look at being satisfied with education, life, home friends and leisure, what according to research are important indicators of the concept (Kalter, et al., 2015; NPC, 2012). This section now turns to the specific relationship between poverty and well-being followed by the relationship between sport participation and well-being.

# 2.4 The relationship of poverty and well-being

The study by Power et al. (2007) shows that people living in poverty situations experience lower levels of well-being than people that live in wealthy situations (Power, et al., 2007). Marmot (2010) comes to the same conclusion in reviewing contemporary society, emphasizing that inequality of income levels correlate with well-being levels (Marmot, 2010). However, the research by Knies (2015) aswell as Bayram et al. (2012) show a contradictory effect, income poverty has no relation to life satisfaction nor well-being, it is more about how young people feel regarding poverty (Knies, 2015). This statement indicates that subjective poverty would be a better indicator of well-being than objective poverty.

Bayram et al. (2012) say the negative effects of poverty are interrelated, one problem hardly occurs individually (Bayram, Aytac, Aytac, Sam, & Bilgel, 2012). Poverty has a negative influence on (objective) health. People living in poverty have less financial power leading to the consumption of low-priced nutrition (Brown & Pollit, 1996). Nutrition can play a role in explaining the negative effects of poverty. It is proven that people living in poverty spend less money on food, having a negative effect on health conditions. The highest obesity rates occur amongst population groups with the highest poverty rates (Drewnowski & Specter, 2004). Cheaper food often contains more added sugars and fats in order to preserve them longer, which make the food cheaper. Despite this research was executed in the United States, the fact remains that people in poverty consume less healthy nutrition. Also people living in poverty experience higher stress levels, being worried about the financially or socially deprived situation (Power, et al., 2007; Marmot, 2010). This can result in people living in poverty having lower health levels, which can be indicators of lower well-being levels.

Worldwide, poverty occurs most frequent amongst women (Chant, 2006), which hypothesizes that women would experience lower well-being levels. The overrepresentation of Dutch women living with long-term 'low-income' manifests strongest in the age group from 20 to 44 years old (CBS, 2015). Children growing up in poverty have a high risk to find oneself in a similar situation, as twenty per cent of the children who grew up in a household in poverty in 1990, lived in poverty situations themselves

in 2015 (CBS, 2015). This indicates that both age and gender might be influential factors on the relationship of poverty and well-being. The negative effects of poverty lead to the next hypothesis:

#### H1 Young people that do not experience to live in poverty experience higher well-being levels.

The study by Bayram et al. (2012) does not only show that the relationship between poverty and wellbeing is negative, but also that this can be explained due to this group participating less often in leisure activities. Sletten (2010) explains that poverty leads to less participation in leisure activities, not only due to financial means, but because of shame or stigmatization. People might not want to be seen in public places, and will mostly spend time in the neighborhood with peers (Sletten, 2010).

Playing sports in a competitive environment contributes to learning to deal with the negative aspects of life, creating a certain kind of 'mental toughness', being emotionally more stable (Roberts & Pascuzzi, 1979). This especially applies to young people living in poverty, who possibly have to deal with such negative and unfair situations on a daily basis. Furthermore, parents of young people living in poverty often have poor health conditions and behaviors (e.g. smoking and/or drinking during pregnancy), having negative impacts on children's health, affecting future well-being (Hirsch & Spencer, 2008; Kelly & Bartley, 2010). However, frequent sport participation is proven to have positive effects in terms of physical, psychological and social benefits (Mock, Wilson, Smale, & Hilbrechtb, 2013). These positive effects could possibly counter negative poverty conditions.

Young people in poverty live in 'poor' households that might not have the financial means to provide for sport participation (UN, 2007). When young people feel as missing out on activities, it is expected that they participate less in sports due to for example financial reasons. Sport participation is proven to bring positive effects (Collins, Sport, physical activity and social exclusion, 2004). However people living in poverty situations participate less frequently (Ewing, Gano-Overway, Branta, & Seefeldt, 2002). Therefore we expect that the association between poverty and well-being may be mediated, in part, by sport participation.

# H2 Young people that do not experience to live in poverty participate more frequent in sports and therefore experience higher well-being levels.

This thesis only looks at sport participation as a leisure activity. The negative effects poverty bring seem to be positive effects from sport participation. For example, people living in poverty experience lower levels of social inclusion (Berghman , 1995; Eurostat, 1998; Moisio, 2002). Whereas sport is proven to trigger feelings of higher social inclusion levels (Kalmijn & Uunk, 2007). The same applies to the relationship between poverty and health, and the opposing relationship between sport participation and health, which will be discussed later in this theoretical framework.

# 2.5 The relationship of sport and well-being

Leisure is a complex human need. It is not solely free time, but a product of personal perception, being pleasurable, enjoyable and satisfying (Kelly & Bartley, 2010). Leisure experiences have both social and cultural nature (Iwasaki & Mannell, 2000). Participation and engagement form leisure experiences. Positive leisure experiences can be generated from 'togetherness', involving group or team activities (Wheatley & Bickerton, 2016). This may be particularly relevant to participation in sports. This thesis focusses on sport participation as a leisure activity, since sport is more than a game of winning or losing. Sport can be perceived in a social manner, possibly being a mean to generate higher levels of well-being.

Earlier studies on well-being have indicated that sport makes a significant contribution to explaining distinctive levels of well-being (Fox, 1999). For example, the research by Yao (2015), that looked at the psychological and physical impact of tai chi and GCW (dance) on well-being. In sport, especially respect and punctuality are important positive effects. When one is respectful to others, others will more likely respond in respectful ways (Yao, 2015). However, the research focuses on

martial arts, where respect and punctuality are the foundation. This could mean the explanatory factors might not be applicable for overall sport participation, but could solely be relevant for material arts.

The quantitative study by Iwasaki et al. (2001) focused on sport participation through the frequency of participation in physically active leisure as a whole. Iwasaki et al. (2001) found a positive correlation between participation and well-being (b=0.06, p=<0.05). This relation is relatively small, but present. Mock et al. (2013) state "substantial evidence suggests that physically active leisure can enhance physical health and psychological well-being" (Mock, Wilson, Smale, & Hilbrechtb, 2013, p. 288), indicating sport participation can lead to a variety of benefits, especially physical health which will be discussed later.

Yao (2015) showed that background variables as income and age were significant determinants of sport participation as well as an influence on well-being. He shows the higher the income the more frequent the individual engages in sport participation. The study by Mock et al. (2013) uncovers the relation between physically active leisure and well-being amongst a diversity of racial groups (Mock, Wilson, Smale, & Hilbrechtb, 2013), finding ethnic backgrounds have effect on sport participation. This means age and nationality might be an explanatory factor for higher or lower well-being.

Also the United Nations recognizes the role of sports in explaining well-being, stating physical activity can lead to higher levels of well-being (United Nations Inter-Agency Task Force on Sport for Development and Peace, 2003). Nawijn and Veenhoven (2011) show a positive correlation between sport participation and life satisfaction in their study (r=0.12\*\*). Also Edginton et al. (1995) show a positive correlation between leisure and life satisfaction, using sport as a separate variable as leisure activity. However, the previous discussed studies did not fully explain what it is in sport participation leading to these higher levels of well-being. This leads to the following research question:

# H3 Young people that participate more frequently in sports have a higher well-being compared to those who participate less frequently.

As explained, a common form of measuring poverty is studying people's income. However, poverty can affect other areas people might be or feel disadvantaged in (Whelan, Layte, & Maitre, 2002) and can lead to social exclusion (Sen A., 2000; Silver, 2007).

# 2.6 The mediating role of social exclusion in the relationship between sport and well-being

Expected is that there are a variety of explanatory factors on why sport participation influences wellbeing. One of these factors is social exclusion. The term social exclusion is used increasingly as well in social sciences as in governmental policies. However, a universal definition or operationalization is not present (Moisio, 2002). In current literature there is a contrast in the perception of social exclusion as a negative effect of poverty. Authors argue that there is a minimalistic difference between poverty and social exclusion (Somerville, 1998; Bhalla & Lapeyre, 1997; Nolan & Whelan, 1996), whereas others argue that there are fundamental differences between the concepts (Room, 1995; Berghman , 1995; Vrooman & Snel, 1999; Saraceno, 2001; Todman, 2004; Poggi, 2007). Despite the differences, Millar (2007) explains there are similarities in current literature on the perception of social exclusion, not solely income or material wise, but also processes where individuals or groups become excluded from society. Indicators of social exclusion amongst young people can for example be the experience of not belonging to a group (Millar, 2007). As previous discussed literature sections have indicated, poverty will be expected to have a certain influence social exclusion (Eurostat, 1998; Millar, 2007). This study will treat poverty and social exclusion as different concepts.

Berghman (1995), Moisio (2002) and Eurostat (1998) have found a correlation between income and social exclusion. Meaning the lower the income, the more socially excluded one is, where social exclusion is measured on the basis of a sum of contacts (Berghman , 1995; Eurostat, 1998; Moisio, 2002). The research by Berghman (1995) explains this is due to access problems that lead to becoming excluded from many activities with a variety of indicators (e.g. reported reasons such as social exclusion and discrimination). When one cannot participate in certain activities (e.g. sport) due to for example financial restrictions, the person will experience higher levels of exclusion.

The Dutch Central Bureau of Statistics published a report in 2009 where a measurement tool for social exclusion was developed. The model shows risk factors as indicators of social exclusion, which is divided into influential and non-influential factors. Also the scale represents characteristics of social exclusion. Poverty is one of the main indicators of social exclusion (CBS, 2009). The report explains that people living in poverty participate less in out-of-house leisure activities, which leads to less social contact, which in a way links in with the previous mentioned research of Sletten (2010), who says people living in poverty undertake more activities with peers in the neighborhood (Sletten, 2010).

A number of studies have presented results suggesting the role of sport in inclusion in relation to building social capital and social cohesion. Fred Coalter is a scientist that focuses on the more social role of sport. Coalter et al. (2000) state that sport can lead to community development and social inclusion due to the open and inclusive nature of sport. Due to this nature, formal social boundaries should fade, leading to a blend of people from different socioeconomic groups and lower levels of social exclusion (Coalter, Allison, & Taylor, 2000), meaning people from all different ethnic backgrounds, income levels and ages can come together. Coalter (2010) also argues that feelings of social exclusion rise from the inability to have access to sports (Coalter, 2010). When one does not have financial or social power to participate, feelings of exclusion will be higher. In more recent research, Kelly (2011) recognizes the role of sport leading to social inclusion, and takes a more financial perspective, exploring that insufficient finances reinforce the feeling of exclusion described by Coalter (Kelly, 2011). This means that living in poverty can lead to not participating in sports, which can lead to social exclusion.

In society, several stereotypes have emerged considering poverty. These stereotypes include people living in poverty being lazy, living unhealthy lifestyles and cognitively underdeveloped/lack of intelligence contrasting to the hard-working, healthy and well educated wealthy class, fostering stereotypical beliefs of people in poverty being lazy and unmotivated (Cozzarelli, Wilkinson, & Tagler, 2001). Such stereotyping can lead to the previously mentioned isolation of people living in poverty, 'forcing' them to primarily undertake activities with peers. This type of stereotyping can lead to discriminatory behavior, which can then lead to social exclusion. Also stereotyping can lead to prejudices that emerge amongst (young) people, in the worst case leading to overall exclusion of people living in poverty (avoiding people in poverty). This can influence experienced levels of wellbeing (Bellani & D'Ambrosio, 2011). Therefore expected is that people who participate less in sports experience lower levels of social inclusion. Due to the wide variety of definitions of social exclusions, the following paragraphs are dedicated to the interpretation of social exclusion for the purpose this thesis.

# 2.6.1 Interpretation of social exclusion

Social interaction and social norms play a central part in social exclusion. Social norms are the rules or regulations a group lives by. In psychology, social norms are referred to as social reference frames through values, customs, stereotypes, and conventions (Sherif, 1966). Therefore one can say that social norms are certain patterns or behavior that applies to a certain group, community or culture. People deviating from current social norms are exposed to informal social sanctions (e.g. being insulted, bullied or teased) and experience feelings of social exclusion (Kalmijn & Uunk, 2007),

The research by Tiessen-Raaphorst (2008) looks at deviating behavior in sports, as a result from not obeying the social norm. The research identifies the 'victimized' sport participant, a person that is victim of e.g. threats, abuse or discrimination (Tiessen-Raaphorst, 2008). The conclusion of the research was that there is relatively little undesirable behavior in sports compared to other social sectors (e.g. shopping street, going out), however, this study does not show why sport has this effect and other sectors do not. Furthermore, the dissertation by Baar (2012) shows a link between exclusion and discrimination in sports, which can eventually lead to aggression (from the viewpoint of the informants; coaches and teachers). When one is not treated equally, this can lead to anger, which can

lead to aggression (Baar, 2012). The dissertation goes into depth about anti-bullying programs using sports to reduce conflicts amongst students. The research indicates that gossiping, discrimination and aggression are important indicators of social exclusion. Such social processes evoke feelings of not belonging in a certain (sport) group and ultimately, feelings of not fitting in society (Baar, 2012). Such feelings of exclusion can influence well-being levels (Bellani & D'Ambrosio, 2011).

A dimension of subjective well-being is the mechanism of "the tendency to see ourselves through the eyes of others" (Veenhoven, 2008, p. 3), explaining that we are more positive and satisfied with life when other people 'accept' us, in other words, when we are socially included. Also, Veenhoven (2008) states that people experience higher subjective well-being levels when one is accepted by others (e.g. not being teased or laughed at). Veenhoven (2008) also notes that social participation (e.g. sporting with others) creates social capital (networks and relations among people belonging to a certain group), leading to higher subjective well-being. Explanatory factors for this relationship are feelings of immaterial kinds of support as information, emotional backing and behavioral connection. This immaterial support can be gained through family ties and friendships.

Gasparini and Talleu (2010) focus more on the contrast between inclusion and exclusion in sport. The researchers explain that sport has such inclusive aspects due to the motivation for participation being voluntary, participants have chosen for a certain sport. However, due to variety of individual performances, issues as discrimination, bullying and teasing emerge and can lead to exclusion. However, this only counts for highly competitive sports and athletes (Gasparini & Talleu, 2010). What must be noted here is that sport does not solely have positive outcomes. Especially competitive sport can reinforce the social exclusion process. Apart from the disunity in sports, sport always knows 'winners' and 'losers'.

One can conclude on the basis of previous research that although it seems that sport participation is the ultimate means to achieve higher well-being level, this might not always be the case. Competitive sport participation in particular can possibly result in less enjoyment in sport and exclusion. When one deviates from social norms, people experience feelings of social exclusion (Kalmijn & Uunk, 2007), which could reduce subjective well-being. One can presume that obeying social norms therefore often leads to social inclusion and therefore a higher subjective well-being. Considering this line of argumentation, it is expected that young people living in poverty participate less in sport than young people living in wealthy situations, which leads to more social exclusion, influencing the levels of well-being.

Given the different presented views on defining social exclusion, for the purpose of this study the concept needs a combined definition. Therefore the following definition is established: 'Social exclusion is the process of an individual not having access to resources as social participation which all people in society are expected to have access to. Indicators of social exclusion amongst young people can therefore be; being scared, bullied or teased'. The hypothesis belonging to this definition is:

H4 Young people that more frequently participate in sports experience higher well-being levels because participating in sports leads to higher levels of social inclusion which explains the higher well-being levels.

Measuring social exclusion focuses on the social side of sport participation. However, health is also a largely discussed benefit from sport participation, which will be discussed in the next sub-chapter.

# 2.7 The mediating role of health effects in the relationship between sport and well-being

Health can be referred to a persons mental or physical condition. The current definition of health by the world health organization is as followed: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 1948, p. 100), which will be used as prior definition of this research. The definition demonstrates that health is

more than the state of being free from disease or injury, but also about physical, mental and social contented state. The social part of this definition has been discussed in the topic 'social exclusion'.

The study by Wankel and Sefton (1994) shows the relationship between sport participation and well-being through the health effects sport gives. The researchers made a distinction between social (e.g. socialization and community integration) and psychological (e.g. reduction of depression and anxiety) benefits of sport participation. The mechanism behind this is the free choice of activity, which makes people feel empowered (Wankel & Sefton, 1994).

Additionally, frequent sport participation leads to a healthier BMI, meaning people have on average the healthy length/weight balance (Voedingscentrum, 2015), whereas people living in poverty report lower health levels (CBS, 2009). Sport participation can amplify health; "... active living provides many health benefits including a reduced risk of cancer, diabetes, heart disease and osteoporosis, and an enhanced feeling of well-being" (Federal, Provincial and Territorial Advisory Committee on Population Health, 1999, p. 115). Young people living in poverty are expected to have less access to sports (financially and socially) and therefore have a less healthy BMI and experience lower levels of subjective and emotional health.

## 2.7.1 Objective health

An objective manner of looking at health is Body Mass Index (BMI). BMI is a general measure determining the relative body composition represented in four categories; underweight, normal weight, overweight and obese. BMI is influenced by dietary/nutrition patterns and physical exercise. Coakley (2001) says that sport participation leads to a variety of external rewards, with the focus on objective health. Objective health might not be the motivator to participate in sports, but is an important outcome (Coakley , 2001).

Sport participation, as being part of physical leisure activities, is a manner where one can focus on the body in a healthy context, which can be as well gaining weight or losing weight (Silverstein, Peterson, & Perdue, 1986). There is a positive correlation between health and Body Mass Index (BMI), a BMI between 18.5 and 24.9 one is considered healthy (Voedingscentrum, 2015). The study of Power et al. (2007) also shows a correlation between health and BMI, when one is classified as 'healthy' on the BMI scale, this person will experience less negative physical functioning as a person with for example overweight or obesity due to the negative health effects (e.g. high blood pressure, heart disease) that are connected to an unhealthy BMI (Power, et al., 2007). Also, a "lack of physical activity is recognized as a significant risk factor for coronary heart disease and other serious health problems" (Federal, Provincial and Territorial Advisory Committee on Population Health, 1999, p. 115).

Cornelisse-Vermaat et al. (2006) look at the negative effect of overweight or obesity leading to cardiovascular disease, coronary heart disease, cancer and diabetes. The research concludes that frequent sport participation leads to a healthier BMI (Cornelisse-Vermaat et al., 2006), nutrition and frequent exercise leads to weight loss.

The link to poverty here is that especially young people in poverty have worse BMI than young people living in wealthy situations due to socioeconomic status of the parents (Treanor , 2012), when the parents live in unhealthy situations, young people are also living in such unfavorable situations (e.g. eating cheap and/or unhealthy food due to financial means).

Expected is when one has a healthy BMI, one will experience higher levels of well-being. This assumption is tested because the research by Cornelisse-Vermaat et al. (2006) indicates BMI is an objective measure and indicator of one living a healthy life (Cornelisse-Vermaat, Antonides, Van Ophem, & Van den Brink, 2006).

H5 Young people that more frequently participate in sports experience higher well-being levels because more frequent sport participation leads to higher levels of objective health (BMI) leading to higher well-being.

Apart from measuring health according to an objective tool (looking at BMI), subjective health is also an important aspect to measure, giving insights in how one perceives personal health.

# 2.7.2 Subjective health

The research by Hunt et al. (2008) emphasizes the importance of new measurement tools of measuring health rather than traditional indicators such as BMI (Hunt & McEwen, 2008). The concept subjective health refers to the evaluation of personal health status, and could lead to new insights in health.

The research by Cornelisse-Vermaat et al. (2006) measures subjective health by comparing the individual's health to others of the same age and social group. Perceived/subjective health comes into being by a person evaluating the self, a combination of perception and observation (Sen A., 2002). A combination of seeing oneself through the mirror and through the eyes of others. Perceived health refers to individual health perception, either by the person, or how the individual thinks is perceived through the eyes of others.

Veenhoven (2008) agrees that it is important for people how they are perceived by others, maybe even more important than they perceive themselves. This makes a subjective health measure extremely relevant. For the purpose of this study is decided to look at how one perceives personal health compared to others.

Participating in sports means you are working on your health, which contributes to the desired health of the individual, leading to people being more satisfied with their health than others who do not exercise (Penedo & Dahn, 2005).

# H6 Young people that participate in sport more frequently experience higher well-being levels, because sport participation leads to higher levels of subjective health leading to higher well-being.

Subjective health (see ourselves through others) measures how we perceive our own health, but does not take into account emotions.

# 2.7.3 Emotional health

As briefly discussed in section 2.7, sport can contribute to physical and psychological health effects. Young people living in poverty situations are more likely experiencing lower mental health in the future/adulthood (Power, et al., 2007; Marmot, 2010), experiencing levels of stress from young age. The study by Iwasaki et al. (2001) has shown that a more frequent participation in physical active leisure results in a better (physical) health (b=0.27, p=<0.05), and can therefore have a positive influence for young people living in poverty situations.

The previous discussed study by Iwasaki et al. (2001) showed that physical active leisure contributes to well-being, and reduces experienced levels of stress and depression, however the researchers note ".., there has been little empirical evidence presented to help explain the mechanisms by which physically active leisure contributes to stress-coping and/or good health, particularly mental health" (Iwasaki, Zuzanek, & Mannell, 2001, p. 214). The researchers note that solely physical active leisure alone cannot compensate stress completely. One of the explanatory factors Iwasaki et al. (2001) give in another study is the motivation to participate in physical active leisure is freely chosen and therefore gives a feeling of personal control, which leads to less feelings of stress (Iwasaki & Mannell, 2000).

Nawijn & Veenhoven (2011) show that leisure activity correlates highly with health. The freedom of choice contributes to less negative emotions but to feelings of happiness (Nawijn & Veenhoven, 2011), which is a momentary recording and is therefore not interpreted as well-being for the purpose of this study.

The study by Khan et al (2012) reveals the relationship between sport and health showing that repetitive repertory cardio affects health positively. The study explains when one sports, problems and stress are often put aside (Khan, et al., 2012), pointing to the escapism dimension. In escapism individuals tend to seek relief and distraction from unpleasant realities through entertaining or engaging activities, which is assumed to lead to higher subjective well-being (Stander, 2016).

Svaboda (1994) uncovered the positive relationship between emotional health and well-being, saying "strong evidence ... on the positive effects of physical activities on self-concept, self-esteem, anxiety, depression, tension and stress, self- confidence, energy, mood, efficiency and well-being" (Svoboda, 1994, p. 15), showing that all variables correlate highly, meaning emotions have an influence on well-being.

The research by Steptoe & Butler (1996), as briefly discussed this thesis' introduction, looks at the effect of sport participation on emotions and well-being, using stress, sleeping levels, levels of anger, feelings of depression and anxiety (and more) as indicators. Causality could not be determined in the study. However, academic evidence is consistent with the study findings, that sport participation has a positive effect on emotional health (Steptoe & Butler, 1996).

The work of Penedo & Dahn (2005) evaluated the relationship between sport participation, mental health and quality of life, the standard of health, comfort and happiness. Participants that engaged in frequent participation reported to be satisfied with the desired health effects (Penedo & Dahn, 2005). Additionally, people participating in sports that display more desirable mental health outcomes report higher levels of life satisfaction. This study aims to extends these findings by using well-being as a measure.

What should be noted is that sport participation should be measured according to frequency, when one only sports once a year effects on emotional health and well-being will be lower than when one participates weekly (Khan, et al., 2012). The more one participates in physically active leisure the better one's mental health, when one does not participate in physical active leisure the person is not experiencing the discharge sport can give (Mock, Wilson, Smale, & Hilbrechtb, 2013).

H7 Young people that more frequently participate in sports experience higher well-being levels because sport participation leads to higher levels of emotional health leading to a higher well-being.

In conclusion, sports can give a variety of health benefits. An important side note is that the relationship does not indicate that when you sport you do not experience stress. Frequent participation is necessary in order to maintain positive levels of (emotional) health (Iwasaki & Mannell, 2000).

# **2.8 Conclusion**

Poverty numbers in the Netherlands have stagnated (CBS, 2014). However, it is important to consider the negative effect of poverty on young people, and what influence this can have on (future) wellbeing. The phenomenon well-being is conceptualized as life satisfaction for the purpose of this study. Life satisfaction is a deliberate consideration of the individual based on several aspects in life, being a long-term well-being measure.

Young people that live in poverty participate less frequent in sports (Bayram, Aytac, Aytac, Sam, & Bilgel, 2012; Sletten, 2010), yet sport brings positive benefits.

This theoretical framework has looked at the social role of sport in society aside from the economic or political benefits sports might bring. Therefore, sport participation is researched on the individual level. Leading studies have indicated that benefits of sport participation, such as social inclusion and health effects, can be explanatory factors for higher levels of well-being. This leads to the overall conceptual model that will be used for this thesis.

# 2.9 Conceptual model / research model

The literature findings have led to the following conceptual model in two-fold. The first model focuses on the different effects of young people living in poverty situations versus the effects on young people in wealthy situations.



Figure 1 Conceptual model A: Explaining well-being from poverty through sport participation

The model that follows logically is explanatory to what it is in sport participation leading to these distinctive levels of well-being.



Figure 2 Conceptual model B: Explaining well-being from sport participation through benefits (social inclusion, BMI, subjective health, emotional health)

# 3 Methods

This chapter elaborates on the quantitative approach of analyzing the data in order to answer the presented hypotheses in the theoretical framework. This quantitative strategy is chosen due to the available literature surrounding the subjects of the key concepts poverty, sport participation and wellbeing. The advantages of using a quantitative study is that it can be used as verification and validation of previous findings (in for example previous qualitative and/or quantitative studies described in the theoretical framework). Due to the large amount of previous literature on the subject, this quantitative approach has been chosen and will add to existing literature by using numerical data in a more objective manner than qualitative research. This approach fits the hypotheses best because often qualitative literature is available on the studied relations. However, the actual quantitative 'verification' of these studies is often absent. Also, poverty remains difficult to define, and the working mechanisms are complex. Using quantitative research allows it to reduce and restructure a complex problem into a number of variables through operationalization. It also allows us to look at relationships between variables, since we want to identify the consequences of poverty and sport participation. Quantitative data allows us to study these relationships in highly controlled circumstances, allowing to draw representative conclusions for the population. One of the organizations that carries out research in the field of sports is the Mulier Instituut.

# **3.1 Mulier Instituut**

The commissioner of this research is the Mulier Instituut, an independent national operating organization that focuses on scientific sport research on a qualitative as well as quantitative basis. The main goal of the organization is to promote and distribute the knowledge of social science and policy effectiveness in the area of sport. The intention of this organization is present the findings of this quantitative study together with the findings of a qualitative study parallel to this study to the Jeugdsportfonds in order to explore the importance of sports and investigate opportunities to support young people in poverty. The Jeugdsportfonds is an organization in the Netherlands creating sporting opportunities for young people (from four until eighteen years old) that are not able to participate due to financial reasons. The Jeugdsportfonds links in with the societal goals of this study, and has been visited and consulted throughout the thesis period.

# 3.2 Dataset CILS4EU

To answer the research questions, data is used from the CILS4EU (Children of Immigrants Longitudinal Study in four European countries) panel, administered by the new Opportunities for Research Funding Co-operation Agency in Europe (NORFACE Research Programme on Migration); a panel study which was conducted in four European countries, namely Germany, The Netherlands, Sweden and England. The questionnaires have been distributed each year from 2010 to 2013, and therefore the dataset consists of three waves. The first wave consists of adolescents (14 years old), parents and schoolteachers. The second and third wave consists of adolescents in-school and in-home. The data of the first wave was collected over 2010-2011, the second wave data over 2011-2012, and the third/last wave was collected in 2012-2013. The sample consists of children with and without immigrant background. The dataset provides information on intergenerational assimilation, cognitive development and sociometric information (e.g. friendship and family life). Additionally, it provides information on participation in leisure activities and satisfaction with life. During the first wave, the parents of the students were also interviewed in order to obtain background information. Due to this matter and the fact that the first wave contains most respondents, it is chosen to only work with the data of the first wave.

# 3.3 Operationalization of independent variables

Through operationalization the key concepts that arose from the literature are turned into measurable variables, the independent variables are poverty for the first research question and sport participation for the second. An operationalization table similar to the work of Schlesinger and Nagel (2016) can be found as appendix, table 21 (Schlesinger & Nagel, 2016). This table gives an overview of all concepts discussed including descriptive statistics. For all variables the missing values are recoded into system missings.

# 3.3.1 Measuring subjective poverty

As discussed in the literature review, for the purpose of this study, poverty is defined as subjective poverty. Leading studies have used subjective poverty as a variable in determining if one lives in poverty (e.g. Power et al. (2007); Marmot (2010). Apart form the existing literature and various uses, subjective poverty is also chosen due to the fact that young people might not be aware of the parents financial situation. Young people might 'feel' like living in poverty which influences their levels of wellbeing, but might not live below the poverty threshold the government defined. Question 91 from the questionnaire is used to measure subjective poverty, "How often do you miss out on activities your friends do because you can't afford it" with answer categories 1= "always", 2= "often", 3= "sometimes" and 4 = "never". The lower one scores on this scale, the more one experiences living in subjective poverty situations.

# 3.3.2 Measuring sport participation

As can be concluded from the theoretical section, sport can be viewed as important for an individuals' well-being. One of the reasons for such is that sports provides a certain way to 'escape' daily life and fulfills a variety of psychological needs. The independent variable sport participation will be measured in sport participation by the following question; *Q97.3: how often do you do sports/go to the gym?* measured on a five-point scale which has been reversed for the purpose of this study, becoming: 1= 'never', 2= 'less often', 3= 'once or several times a month', 4= 'once or several times a week' and 5= 'every day', meaning the higher one scores on this variable, the more often this respondent participates in sports and/or going to the gym.

# **3.4 Operationalization of dependent variable**

# 3.4.1 Measuring subjective well-being

The concept subjective well-being is operationalized as life satisfaction as discussed in the literature review. This thesis considers overall (life satisfaction as a whole – measure of general happiness) and domain (home, leisure, school, friends and leisure) satisfaction. Questions about life satisfaction have been used in previous studies as determents of well-being (Frijters, Haisken-DeNew, & Shields , 2004; Verbakel, 2012; Winkelmann & Winkelmann, 1998). A new scale is created using a factor analysis on question 51 "On a scale of 1 to 10 where 1 is very unsatisfied and 10 is very satisfied, how satisfied are you ...?", with the indicators ".. with life in general", ".. with school in general", ".. with home", ".. with your friends" and lastly ".. with your leisure time". This factor analysis is followed up by a reliability analysis in order to determine if the scale can be used.

# **3.5 Mediators**

# 3.5.1 Measuring social exclusion

Measuring social exclusion might be considered more difficult to measure than income poverty and sport participation. Millar (2007) concludes is that social inclusion is often measured in terms of material wealth (e.g. material resources or income) or a measure of social relations (being in touch with family or club membership). Operationalizing this matter have caused difficulties in the past since measuring social exclusion indicators have been highly dependent on availability of datasets rather

than theory or conceptual considerations (Millar, 2007). Social inclusion as a benefit of sports can possibly contribute to well-being since feeling included and having social contact can lead to a higher life satisfaction (Yao, 2015). For this study, measuring social exclusion is dependent on the interpretation and available data in the CILS4EU dataset. As literature indicates, social exclusion could be measured through feelings of being scared, bullied or teased (Baar, 2012; Gasparini & Talleu, 2010; Tiessen-Raaphorst, Weinig over de schreef, 2008). On the basis of literature, social inclusion is conceptualized by question 54: *How often have the following things happened in the last month?* with the answer categories *scared*, *bullied* and *teased*. The answer categories are a continuous four-point scale which have been reversed constructing dummies with answer categories: 1 = 'every day', 2 = 'once or several times a week', 3 = 'less often' and 4 = 'never'). The higher one scores on this variable, the less socially excluded one is.

## 3.5.2 Measuring objective health

The concept of objective health is operationalized as Body Mass Index, using questions 58 about height and question 59 about weight, using metric measures, and the following formula will be used:  $BMI = \frac{Weight}{Height^2}$ . The outcomes were then classified into multi-categorical dummy variables corresponding with the following categories:

| Table 21 BMI categories according to the Dutch nutrition center (Voedingscentrum, |
|---|
|---|

| BMI Categories: |             |  |  |
|-----------------|-------------|--|--|
| Underweight     | < 18.5      |  |  |
| Normal weight   | 18.5 – 24.9 |  |  |
| Overweight      | 25 – 29.9   |  |  |
| Obesity         | >30         |  |  |

Length has been converted to meters through the variable height divided by 100. Then the formula used in order to compute the BMI:  $\frac{Weight}{Length^2}$ . Since PROCESS only allows a mediator that is continuous, the program has to be 'misled' in order to estimate a model with a multicategorical mediator. Therefore Process is ran k-1 times, where k is the number of level of the mediator (four in this case, underweight, normal weight, overweight and obesity) minus one. For the categories, three different dummy variables have been created according to recode (D1= underweight, D2= Overweight and D3= Obesity), using normal weight as the reference or also called baseline category. This means that the dummy variables will be compared to the baseline category, normal weight.

#### Table 22 Computed dummy variables BMI

|               | D1 | D2 | D3 |
|---------------|----|----|----|
| Underweight   | 1  | 0  | 0  |
| Normal weight | 0  | 0  | 0  |
| Overweight    | 0  | 1  | 0  |
| Obesity       | 0  | 0  | 1  |

Since Hayes (2013) claims that it is unable to program SPSS that allows a categorical mediator, this method is not used. However, Baron & Kenny (1986) have created an alterative manner in order to perform the mediation analysis by running a set of regression analyses. In this model X is the independent variable, M is the mediator and Y is the dependent variable. Therefore X= sport

participation, Y= well-being and M= BMI. First, a logistic regression analysis is done from X on M (which includes the three previously described dummies). Three logistic regressions are done in order to predict categorical outcomes (BMI) from a continuous predictor (sport participation). These dummies all refer to the baseline category (normal weight). The second performed analysis is M on Y, which is done according to a multiple regression analysis, using the three dummy variables as predictor variables. Thirdly, the effect of X on Y is calculated, and will be referred to as the 'total effect. Lastly, both X and M are put into a multiple regression analysis with Y as dependent variable, calculating the 'direct effect'. M again includes the three dummies. When the direct effect is smaller than the total effect, one can conclude that mediation takes place (Baron & Kenny, 1986).

# 3.5.3 Measuring perceived health

Perceived health is operationalized as how the respondent rates one's health compared to peers. For measuring the concept (perceived) health the question "*How good is your health compared to others of your age*" used. The answer categories of this likert scale are reversed, representing 1 = 'very bad', 2 = 'bad', 3 = 'good', 4 = 'very good'. This means the higher one scores on this variable, the better one perceives personal health compared to others.

# 3.5.4 Measuring emotional health

Emotional health is an important measure as a result of sport, since previous research has indicated that sports has an 'escapism' dimension, fulfilling a variety of psychological needs. For the purpose of this study, emotional health will be measured according to question 53; "How often are each of these statements true", "... I feel very worried", "I get angry easily", "I feel anxious", "I feel depressed", "I feel worthless" and "I act without thinking", measured on a four-point scale (1= "often true", 2= "sometimes true", 3= "rarely true", 4= "never true"). The higher one scores on this scale, the better one's emotional health.

# **3.6 Control variables**

Controls are potential and cofounding variables that need to be confound for, but do not thrive theory. These control variables do not test for any mediation between the control and dependent variable.

In this study is controlled for the possible spurious effects of gender (question 1 where 1= "male" and 2= "female"), nationality (question 5 where 1= "Only Dutch", 2= "Dutch and other nationality" and 3= "Only other nationality") and level of education (question 18nl where 1= "brugklas", 2= "vmbo-b/vmbo-k/vmbo-mbo2", 3= "vmbo-g/vmbo-t", 4= "havo" and 5= "vwo/es/ib"). A dummy variable is created for age, subtracting the respondents' birth year from the surveyed year. The decision is made to control for these variables on the basis of the study by the CBS (2009), stating these background variables are important when one wants to say something about poverty measurements (CBS, 2009). Additionally, for answering the second research question, the variable subjective poverty is included as control variable in the mediation analysis.

# **3.7 Analytic strategy**

The following statistical analyses have been executed in order to answer specific questions and to test the expected relations (hypotheses).

Firstly, a bivariate correlation matrix has been performed across all variables in order to determine if the multicollinearity problem exists. In order to control for multicollinearity, When high correlations were observed, the variables were put in a regression analysis and the VIF and tolerance values were looked at in order to determine if the multicollinearity existed.

Validity is assured by the CILS4EU data collectors. Secondly, factor analyses were performed on the constructs social inclusion, emotional health and well-being. A Cronbach's Alpha ( $\alpha$ ) is conducted to estimate the consistency of the constructs. In order to assure reliability,  $\alpha$  needs to be higher than 0.7 (Cortina, 1993). Items have been deleted accordingly. As a result of the output, factor analyses will be ran, which will be discussed now.

## 3.7.1 Factor analysis well-being

In order to run a factor analysis on the five sub-dimensions of well-being, first a correlation analysis have been done in order to determine if the problem of multicollinearity exists. The following table presents all correlations between the variables considering well-being.

Table 23 Correlations scale well-being

| Variables | Life  | School | Home   | Friends |
|-----------|-------|--------|--------|---------|
| School    | .51** |        |        |         |
| Home      | .71** | .41**  |        |         |
| Friends   | .49** | .29**  | .43**  |         |
| Leisure   | .46** | .32**  | 0.40** | 0.48**  |

Note: \*\* p < 0.01; \* p < 0.05.

What can be observed from the table is that home and life satisfaction are very highly correlated (r=0.71, p=<0.01), meaning when one is satisfied with the home situation, one will also be highly satisfied with life and vice versa. This finding is conventional, the target group spends a lot of time after school at home, meaning life satisfaction depends a lot on the home situation. This reflects the literature discussed on poverty, expecting that when one lives in a household (home) where poverty occurs, one will be less satisfied with life. Additionally, what can be observed is that satisfaction with school and life are highly correlated and significant (r=0.51, p=<0.01). This finding is also not surprising, since the respondents spent a lot of time in school. However, no variables are highly correlated, therefore the factor analysis can be performed. In order to run the factor analysis, first a cronbach's alpha was ran ( $\alpha$ =0.798) on the five variables satisfaction with life, school, home, friends and leisure. No items were deleted. The factor analysis is executed and explains 56.41% of the total variance in the data. One component was extracted, which represents well-being. Since only one component was extracted, the results of the principal component matrix are used, presented in the table below.

| Variables      | Well-being | % Variance | Eigenvalues |  |
|----------------|------------|------------|-------------|--|
| Life general   | 0.86       | 56.41      | 2.82        |  |
| School general | 0.66       | 15.72      | 0.79        |  |
| Home           | 0.81       | 12.25      | 0.61        |  |
| Friends        | 0.71       | 10.07      | 0.50        |  |
| Leisure        | 0.70       | 5.56       | 0.28        |  |

#### Table 24 Factor Analysis well-being

Note: \*\* p < 0.01; \* p < 0.05.

This new variable means that the higher one scores on this factor, the higher the experienced level of subjective well-being.

#### 3.7.2 Factor analysis social exclusion

In table 5, the correlation matrix that has been ran on the different variables of social exclusion (namely scared, teased and bullied) is presented.

| Variables                      | Scared | Teased |
|--------------------------------|--------|--------|
| Teased                         | .43**  |        |
| Bullied                        | .51**  | .67**  |
| Note: ** p < 0.01; * p < 0.05. | .51    | .07    |

We can see that being teased and bullied are positively correlated (r=0.67, p=>0.01). This can be through respondents interpreting being teased in the same way as being bullied. The interpretation of such variables is individual. The interaction of teasing can become bullying, often when teasing occurs repeatedly. We can also see that being bullied correlates stronger with feelings of being scared than being teased. This can be due to when being bullied the person gets upset or hurt by the interaction, yet teasing can be less hurtful. Multicollinearity does not exist, since no variables are highly correlated. The reliability analysis resulted in  $\alpha$ =0.758 and no items were deleted. The factor analysis explains 68.3% of the total variance in the data and one component was extracted, representing social inclusion. Since only one component was extracted, the results of the principal component matrix are used.

#### Table 26 Factor Analysis Social Exclusion

| Variables | Social inclusion | % Variance | Eigenvalues |  |
|-----------|------------------|------------|-------------|--|
| Scared    | 0.77             | 68.26      | 2.05        |  |
| Teased    | 0.84             | 19.65      | 0.59        |  |
| Bullied   | 0.87             | 12.09      | 0.36        |  |

Note: \*\* p < 0.01; \* p <0.05.

The higher one scores on this factor, the more socially included you are.

## 3.7.3 Factor analysis emotional health

Lastly, a factor analysis is ran on the different variables that are expected to represent the dimension emotional health, representing the variables being worried, angry, anxious, depressed and act without thinking. The correlation matrix can be found below.

| Variables | Worried | Angry   | Anxious | Depressed | Worthless |
|-----------|---------|---------|---------|-----------|-----------|
|           |         |         |         |           |           |
|           |         |         |         |           |           |
| Angry     | 26**    |         |         |           |           |
| Aligiy    | .20     |         |         |           |           |
| A         | 47**    | 21**    |         |           |           |
| Anxious   | .47     | .21     |         |           |           |
|           |         | 0 = * * |         |           |           |
| Depressed | .41**   | .25**   | .50**   |           |           |
|           |         |         |         |           |           |
| Worthless | .37**   | .19**   | 0.46**  | 0.61**    |           |

Table 27 Correlations scale emotional health

| Act without thinking           | .21 | .34 | .12 | .13 | .15 |  |
|--------------------------------|-----|-----|-----|-----|-----|--|
| Note: ** p < 0.01; * p < 0.05. |     |     |     |     |     |  |

The results do not show any remarkable correlations, when one has negative feelings such as being worried, angry, anxious, depressed or worthless, the feelings are strengthened by each other. Only act without thinking does not correlate significantly with the other variables. Before running a factor analysis on the subject emotional health, a cronbach's alpha is ran ( $\alpha$ =0.73). On the basis of this knowledge, 'I often act without thinking' is excluded from the scale leading to an increase of the reliability ( $\alpha$ =0.746).The factor analysis now explains 51% of the total variance in the data. One component was extracted, and this new scale represents 'emotional health'. Since only one component was extracted, the results of the principal component matrix are used.

| Variables | Emotional<br>health | % Variance | Eigenvalues |
|-----------|---------------------|------------|-------------|
| Worried   | 0.71                | 51.05      | 2.55        |
| Angry     | 0.46                | 17.66      | 0.88        |
| Anxious   | 0.76                | 13.48      | 0.67        |
| Depressed | 0.81                | 10.18      | 0.51        |
| Worthless | 0.77                | 7.64       | 0.38        |

**Table 28 Factor Analysis Emotional Health** 

Note: \*\* p < 0.01; \* p < 0.05.

The higher one scores on this new factor, the better the emotional health. Meaning the respondent experiences less feelings of being worried, angry, anxious, depressed and worthless).

## 3.7.4 Analyzing hypotheses

To explore an answer to the first hypothesis, predicting levels of well-being from living in poverty, a regression analysis will be performed. The independent variable is poverty and the dependent variable well-being, controlling for possible spurious effects of the variables described in paragraph 3.5. Expected is that the more one feels as living in subjective poverty the lower well-being levels one reports and vice versa.

To answer the second hypothesis, a mediation analysis is performed using the software plugin 'PROCESS' for SPSS by Andrew F. Hayes (Hayes, 2013), version 2.15. This software will be used for all mediation analyses in this thesis, except the hypothesis on BMI (chapter 3.4.2 goes into depth about this analysis). Expected is when one lives in poverty there will be lower levels of sport participation explaining lower levels of well-being. The mediation plugin applies the following analytical techniques. The analysis runs three separate regression analyses. In order to explain this, the relationship of figure 1 is explained here. 1) Predict well-being from poverty (direct effect - c); 2) Predict sport participation from poverty (a); 3) Predict well-being from sport participation and poverty simultaneously. The regression coefficient for poverty gives c', the one for sport participation gives b. The Sobel test will be taken into account for all mediation analyses, when this is significant the indirect effect is significant. Mediation takes place when the effect of c' is smaller than c. In order to control for age, gender, education and nationality, the identified background variables are added to the model as covariates.

In order to predict levels of well-being from sport participation (hypothesis three), another regression analysis is performed, with as the dependent variable sport participation and the independent variable well-being. This analysis has been run on the whole population. Expected is that

when one participates in sports, this has a positive impact on experienced levels of well-being. Subjective poverty is added to the previous discussed control variables.

Hypothesis four until seven are separate mediation analysis determining what it is in sport participation that could explain higher well-being levels. The mediator variables are social inclusion, subjective health and emotional health. All analyses first predict the direct effect of well-being from sport participation and are followed by the effect of the mediation from the independent variable (sport participation). Lastly, levels of well-being are predicted from the mediator and the independent variable. Background variables are controlled for in all analyses.

The following chapter will report on the results of the analyses discussed in this methodology chapter.

# 4 Results

In this chapter the most relevant findings are presented and reported upon. First the chapter starts with a descriptive analysis into frequencies. Secondly, the bivariate analyses are presented, namely correlations amongst the main variables. Thirdly, the regression analyses are presented, being the underlying foundation for the mediation analyses. Then the mediation analyses are presented followed by a conclusion of the findings chapter, elaborating on all findings.

# 4.1 Descriptive Analysis

In table 22 in the appendix, the number of valid cases, the mean and standard deviation of the independent, dependent and control variables are presented for all respondents. Also the minimum and maximum possible answers are reported upon.

What can be seen is that the sample consists of 12.5% of respondents with immigrant background. The Dutch Bureau of Statistics reports that 20.2% of the Dutch population has an immigrant background in 2010, the surveyed year (CBS, 2010). This has an influence on the representativeness of the study. The sample consists of fewer immigrants than the actual population.

What might also seem surprising at first are the highly self-reported average levels of wellbeing, with a grand mean<sup>1</sup> of 7.96. However, the EOCD reports in their 'better life index' that in the Netherlands people evaluate life satisfaction with an average of 7.3 on a ten-point scale (OECD, 2015). This corresponds with the well-being levels found in this study, indicating that the result is less exceptional as it might seem at first. High average well-being levels could also be due to the age group that is questioned, who might be satisfied with life overall.

What is essential to note is that all respondents are in secondary school; the largest group will be enrolled to the third year according to the Dutch law on compulsory schooling. The educational level is divided as followed:



#### Figure 3 Educational level respondents (n= 4363)

The largest response group attends vmbo-g/vmbo-t education, lower secondary vocational schooling. Comparing these findings to the national Dutch statistics we can observe that in the third grade of secondary education, 22% of the students study vwo/es/ib, 24.4% havo and 53.6% vmbo (Ministerie van Onderwijs, Cultuur en Wetenschap, 2014). These statistics are similar to the division of educational level of the respondents of this study, meaning the age of the respondents of the sample is representative for the Dutch population. The next step is to look into the frequency of sport

<sup>&</sup>lt;sup>1</sup> The grand mean is the mean of several subsamples with the same number of answer categories in the scale.

#### participation of the students.



Figure 4 Frequency of sport participation respondents (n=4289)

As can be noticed, the largest group participates once or several times a week (n=2621). This response might be influenced due to all respondents being of school age. In secondary school Dutch students are obliged to practice two hours of gymnastics a week in school hours. However, not all students might consider gymnastics in school as sports, leading to a variety of interpretation possibilities amongst respondents. However, it is about self-reported levels of sport participation, so the interpretation is of individual nature.

# 4.2 Bivariate analysis: Correlation

The correlations among the independent as well as dependent variables are presented in table 23 in the appendix. The results of this analysis show no signs of multicollinearity. From the correlation table, it becomes clear that the correlations between subjective poverty and subjective well-being, as well as the correlations between sport participation and subjective well-being are significant and positive. This means it can be assumed that the less people feel as living in subjective poverty, the higher the levels of well-being (r=0.21, p=0.000), and the more people sport, the higher their subjective well-being (r=0.11, p=0.000). This confirms the findings of the literature review. Furthermore, poverty and the mediator sport participation are also correlated significantly (r=0.08, p=0.00), the less people feel like living in poverty, the higher the sport participation. Therefore it is expected to find a significant relationship between these variables conducting the mediation analyses. However, whether this causal effect is present in the regression analyses depends highly on the effects of other included variables.

As literature indicated, income does not significantly influence feelings of subjective poverty or vice versa. One might experience living in poverty (subjective), however, might not live below poverty margins (objective). In previous studies that measure objective poverty is often not controlled for household size, which is important to determine what monthly expenses a family has accordingly. Therefore it could be interesting to research objective and subjective poverty simultaneously.

Surprisingly, education is not significantly correlated with well-being (r= -0.03, p= 0.07), meaning there is no direct relationship between the two. However, literature is available that claims education is an important predictor of subjective well-being levels (Cohen, 2006). This could possibly be explained that amongst this target group (mostly 14-year olds) education is not perceived the same as the respondents of the previous study (which were either adults or young professionals). When the respondents would be given the same question in later stages in life, result possibly differ. One can also argue that education does not influence well-being levels,. Independent of the educational level, people can still be satisfied with life.

Overall, no variables are highly correlated, meaning that during conducting the regression analyses the variables do not measure the same constructs, and multicollinearity is not a problem. What must be noted is that correlation does not imply causality. However, the theoretical section implies that poverty effects well-being, therefore this relationship is assumed.

# **4.3 Regression analysis**

The first step of the analysis is conducted according to hierarchical multiple regressions. Firstly, the independent variable poverty is used and secondly the regressions on sport participation are executed. Dummy variables were constructed as explained in the methodology chapter. For all tests the independent dummies are entered in step one, followed by background variables in step two.

4.3.1 Explaining well-being based on poverty In order to verify if levels of well-being can be predicted from subjective poverty, a multiple regression analysis is performed. The analysis showed that a model with subjective poverty accounted for significantly more variance in well-being ( $R^2 = 0.04$ ) than a model without any predictors ( $F_{1,}$  $_{4232}$ =191.888, p=0.000). The regression coefficient for poverty (b=0.34) is positive and significantly different from zero ( $t_{4233}$ =13.852, p=0.000), which indicates when one does not feel like living in poverty, experienced levels of well-being are higher. This confirms previous literature on the relationship of poverty on well-being (Bayram, Aytac, Aytac, Sam, & Bilgel, 2012; Knies, 2015; Marmot, 2010; Power, et al., 2007).

|                    | b     | SE B | β     | р    |
|--------------------|-------|------|-------|------|
| Constant           | 0.19  | 0.38 |       | 0.62 |
| Subjective poverty | 0.34  | 0.03 | 0.21  | 0.00 |
| Age                | -0.08 | 0.02 | -0.05 | 0.00 |
| Education          | -0.06 | 0.01 | -0.07 | 0.00 |
| Gender             | -0.02 | 0.01 | -0.03 | 0.02 |
| Nationality        | -0.01 | 0.02 | -0.02 | 0.33 |

Table 29 Regression poverty on well-being

Note: dependent variable: well-being

We can see here that the constant, also known as the intercept, is not significant (b=0.19, p=0.62), meaning if all predictors have values of zero, the predicted value will not significantly differ from zero. Using multiple predictors in a regression often leads to an insignificant constant, it is very unlikely that all predictors can realistically be set to zero (Field, 2012). Therefore this value is not further interpreted.

Literature indicated that sport participation has potential to lead to higher well-being levels (Collins, 2004), however, this is not empirically proven. Having said that, h3 aimed to find out if young people that participate more frequent in sports experience higher well-being levels.

The results of the regression analysis accept hypothesis three, when one participates in sports more frequently, the higher the subjective well-being (b=0.118, p=<0.01). This finding is also relatively new, since most literature focuses on the effect of sport participation on social capital (Seippel, 2006). This study showed that young people participate more frequently in sport, they experience higher levels of satisfaction with life, school, friends, family, home and leisure.

What can be seen is that age significantly influences well-being (b= -0.08, p=<0.01), meaning the younger one is, the higher the well-being.

Gender shows a small effect (b=-0.02, p=0.02), meaning being female results in slightly lower levels of well-being. Lastly, nationality does not significantly influence experienced levels of well-being.

What is interesting to note is that education significantly adds to the outcome, although this result was not found in the correlation analysis. This could be explained due to the fact that a correlation coefficient solely measures the linear dependence between education and well-being. Correlation does not control for the fact that other variables might be involved in the relationship.

The relationship is education (b=-0.06, p=<0.01) is remarkable, indicating the higher the education the lower the well-being. The finding contradicts previous findings in the United States (Cohen, 2006). An explanation for this could be that the United States is a republic with a different schooling system. Also supporting literature regarding education and well-being is previously discussed (Sabates & Hammond, 2008), which could be explained according to the previous discussed quote by Albert Einstein "the more I learn the less I know", finding a positive relationship between education and well-being.

4.3.2 Explaining sport participation based on poverty The second regression analysis examines whether there is a relation between poverty and sport participation. The analysis showed that a model with subjective poverty accounted for significantly more variance in well-being ( $R^2 = 0.01$ ) than a model without any predictors ( $F_{1,4248} = 24.242$ , p=<0.01). The regression coefficient for poverty (b=0.13) is positive and significantly different from zero (t4249=4.924, p=0.000), which indicates when one does not feel like living in poverty, one will participate in sport more often.

|   | b                             | SE B                         | β                             | р                            |
|---|-------------------------------|------------------------------|-------------------------------|------------------------------|
| Constant                                  | 4.02                          | 0.57                         |                               | 0.00                         |
| Objective poverty                         | 0.01                          | 0.04                         | 0.01                          | 0.73                         |
| Age                                       | -0.05                         | 0.04                         | -0.03                         | 0.18                         |
| Education                                 | 0.11                          | 0.02                         | 0.12                          | 0.00                         |
| Gender                                    | 0.01                          | 0.01                         | 0.02                          | 0.39                         |
| Nationality                               | 0.00                          | 0.00                         | 0.02                          | 0.45                         |
| Age<br>Education<br>Gender<br>Nationality | -0.05<br>0.11<br>0.01<br>0.00 | 0.04<br>0.02<br>0.01<br>0.00 | -0.03<br>0.12<br>0.02<br>0.02 | 0.18<br>0.00<br>0.39<br>0.45 |

Table 30 Regression poverty on sport participation

Note: dependent variable: sport participation

What can be observed is that only education is positive and a significant predictor of sport participation. This means the higher educated one is, the more frequent this person will participate in sports. This could be due to lower educated groups have less access to sport. This can include a lack of physical activity in schools or limited opportunities to play sports in secondary school. Also the social stigma could be the reason, if one is lower educated, one might be (or feel) discriminated on the basis of income or social contacts (Baar, 2012). The other control variables are not significant, and do not contribute towards the relationship. Surprisingly, objective poverty does not contribute to the relationship of poverty on sport participation. Theory suggested that income does not influence wellbeing, but literature did indicate that income could influence participation in sports. This means the results show that it is possible that people reporting to live in subjective poverty, do not live in objective (income) poverty.

4.3.3 Explaining well-being based on sport participation In order to verify if levels of well-being can be predicted from sport participation, a multiple regression analysis is performed. The analysis showed that a model with sport participation accounted for significantly more variance in well-being ( $R^2 = 0.013$ ) than a model without any predictors ( $F_{1,4217}$ =56.767, p=0.000). The regression coefficient for sport participation (b=0.118) is positive and significantly different from zero ( $t_{4218}$ =7.534, p=0.000), which indicates when one participates more frequently in sports, experienced levels of well-being will be higher.

|                     | b     | SE B | β     | р    |
|---------------------|-------|------|-------|------|
| Constant            | 0.97  | 0.38 |       | 0.01 |
| Sport participation | 0.12  | 0.02 | 0.12  | 0.00 |
| Age                 | -0.08 | 0.02 | -0.05 | 0.00 |
| Education           | -0.06 | 0.02 | -0.06 | 0.00 |
| Gender              | -0.02 | 0.01 | -0.03 | 0.03 |
| Nationality         | -0.01 | 0.01 | -0.02 | 0.29 |

Table 31 Regression sport participation on well-being

Note: dependent variable: well-being

Age (b=-0.08, p=<0.01), education (b=-0.06, p=<0.01) and gender (b= -0.02, p=<0.05) contribute significantly to predicting levels of well-being in the relationship between sport participation and well-being.

# 4.4 Mediation analyses

The following section is dedicated to the mediation analyses that have been executed using the SPSS plugin PROCESS by Andrew Hayes (version 2.15) according to the explanation in the methodology.

4.4.1 Explaining well-being based on poverty through sport participation In order to determine if the relationship between subjective poverty and well-being can be 'explained' due to the presence of sport participation (mediator), a mediation analysis is performed.

There was a significant indirect effect of subjective poverty on well-being through sport participation, b = 0.0120, BCa CI [0.0045, 0.0212]. This represents a relatively small effect,  $\kappa$ 2 = 0.0125, 95% BCa CI [0.0040, 0.0128].

|                  | Coeff | SE   | Т     | Р    |
|------------------|-------|------|-------|------|
| Age              | -0.08 | 0.02 | -3.31 | 0.00 |
| Education        | 0.06  | 0.02 | -4.27 | 0.00 |
| Gender           | -0.02 | 0.01 | -2.25 | 0.02 |
| Nationality      | -0.00 | 0.01 | 27    | 0.79 |
| Social exclusion | 0.07  | 0.01 | 4.70  | 0.00 |
| Emotional health | 0.38  | 0.01 | 25.40 | 0.00 |
| Perceived health | 0.15  | 0.02 | 9.20  | 0.00 |

Table 32 Output mediation analysis poverty on well-being through sport participation

Note: The Sobel test is significant (p=0.001)

The background variables age and education are significant, but with a negative beta. This means that age and education contribute significantly to predicting levels of well-being in the relationship between poverty and well-being.

What additionally can be seen here, is that social exclusion, emotional health and perceived health are significant with positive beta values. This means that people who experience living in poverty are possibly missing out on these 'benefits', and people who do not report on such are socially more included, report higher levels of emotional and perceived health which leads contributes to explaining the higher well-being levels this group reports. Since previous discussed literature indicates that these concepts are positive benefits of sport participation, these indicators are added in the next set of tests as mediators with the aim to explain the relationship between sport participation and wellbeing.

As found in previous studies, poverty situations influences lifestyles and leisure behavior (Ewing, Gano-Overway, Branta, & Seefeldt, 2002; Levermore, 2008; Reijgersberg & Van der Poel, 2014). Living in poverty can mean not possessing the financial means to facilitate for sport participation (Ewing, Gano-Overway, Branta, & Seefeldt, 2002). Additionally, poverty affects nutrition (Drewnowski & Specter, 2004). People living in poverty spend less money on food, and low-cost food contains a great deal of added sugars and added fats (in order to preserve the food longer) compared to more expensive healthy food. This leads to lower energy levels and the food only satisfying for short amounts of time. This low-level energy can have a negative effect on the willingness and motivation to participate in sports (Ewing, Gano-Overway, Branta, & Seefeldt, 2002).

The results also show that the expected benefits of sport participation (social exclusion, emotional and perceived health) are more positive when one does not feel as living in poverty situations, which emphasizes the need of a leisure activity that provides people living in poverty that give positive benefits.

The next mediation analyses belong to the relationship of sport participation on well-being through the expected benefits sport participation gives (social inclusion, objective health, perceived health and emotional health).

4.4.2 Explaining well-being based on sport participation through social inclusion In order to determine if the relationship between sport participation and well-being can be explained due to the presence of social inclusion, a mediation analysis is performed.

There was a significant indirect effect of sport participation on well-being through social inclusion, b = 0.0126, BCa CI [0.0063, 0.0207]. This represents a relatively small effect,  $\kappa$ 2 = 0.0075, 95% BCa CI [0.0044, 0.0209].

|                    | Coeff | SE   | Т     | Р    |
|--------------------|-------|------|-------|------|
| Age                | -0.07 | 0.02 | -2.96 | 0.00 |
| Education          | -0.07 | 0.01 | -5.06 | 0.00 |
| Gender             | -0.02 | 0.01 | -2.18 | 0.03 |
| Nationality        | -0.01 | 0.00 | -0.15 | 0.88 |
| Subjective poverty | 0.32  | 0.02 | 12.91 | 0.00 |

Table 33 Output mediation analysis sport participation on well-being through social inclusion

Note: The Sobel test is significant (p=<0.01)

Age, education and poverty are significant control variables in the relationship between sport participation and well-being through social inclusion. The strongest effect is subjective poverty (b=0.32, p=<0.01). As expected, people living in poverty miss out on sport participation because of

social or financial reasons, and will therefore experience lower levels of social inclusion as a benefit of sport participation. This then leads to lower well-being levels.

4.4.3 Explaining well-being based on sport participation through objective health In order to determine if the relationship between sport participation and well-being can partly be explained through a mediator variable (BMI), first a set of three logistic regressions is performed since the mediator is mutlicategorical. The category 'healthy weight' is used as the baseline category. The model with healthy versus underweight is significantly better than the null model (b=-1.13, p=<0.01), however, the effect size is relatively small since the variance lays between 0.2% and 0.3%. Lastly, if one participates in sports more frequently, the odds of having being healthy compared to being underweight are 1.12 times higher than participating less.

|                     | b                       | 95% CI for odds ratio |          |       |
|---------------------|-------------------------|-----------------------|----------|-------|
| Included            |                         | Lower                 | Odds (B) | Upper |
| Constant            | -1.54**<br>[1.04, 1.20] |                       |          |       |
| Sport Participation | 0.11*                   | 1.04                  | 1.12     | 1.20  |

Table 34 Output logistic regression BMI (underweight)

Note: Independent: Sport participation; dependent: Healthy vs. underweight Note: R2= 0.002 (Cox & Schnell); 0.003 (Nagelkerke) Note:  $\chi^2$ = 8.49\*\* Note: \*\* p < 0.01; \* p<0.05

The model with healthy versus overweight is significantly better than the null model (b=-2.98, p=<0.01), but the effect size is relatively small (estimated between 0.2% and 0.7%). If one participates in sports more frequently, the odds of having being healthy compared to being overweight are 0.81 times higher than participating less.

#### Table 35 Output logistic regression (overweight)

|                     | b                       | 95% CI for odds ratio |          |       |
|---------------------|-------------------------|-----------------------|----------|-------|
| Included            |                         | Lower                 | Odds (B) | Upper |
| Constant            | -2.22**<br>[0.71, 0.93] |                       |          |       |
| Sport Participation | -0.21**                 | 0.71                  | 0.81     | 0.93  |

Note: Independent: Sport participation; dependent: Healthy vs. overweight Note: R2= 0.002 (Cox & Schnell); 0.007 (Nagelkerke)

Note: χ2= 9.300\*\*

Note: \*\* p < 0.01; \* p<0.05

The model including healthy versus obesity is significantly better than the null model (b=-4.71, p=<0.01). Also here the effect size is relatively small (between 0% and 0.05%), explaining only little variance in the data.

If one participates in sports more frequently, the odds of having being healthy compared to obese are 0.81 times higher than participating less.

#### Table 36 Output logistic regression (obese)

|                     | b                       | 95% CI for odds ratio |          |       |
|---------------------|-------------------------|-----------------------|----------|-------|
| Included            |                         | Lower                 | Odds (B) | Upper |
| Constant            | -3.94**<br>[0.61, 1.08] |                       |          |       |
| Sport Participation | -0.21                   | 0.61                  | 0.81     | 1.08  |

Note: Independent: Sport participation; dependent: Healthy vs. obesity Note: R<sup>2</sup>= 0.000 (Cox & Schnell); 0.005 (Nagelkerke)

Note:  $\chi^2 = 1.878$ 

Note: \*\* p < 0.01; \* p<0.05

One can conclude that all three dummies are significantly related to the reference group (healthy weight), meaning sport participation leads to a healthy weight.

Secondly, a multiple regression analysis is executed in order to determine the effect of the mediator (BMI) on well-being. None of the tests were significant.

#### Table 37 Output multiple regression BMI on well-being

|                        | b     | SE B | β     | р    |
|------------------------|-------|------|-------|------|
| Constant               | -0.01 | 0.02 |       | 0.62 |
| Healthy vs underweight | 0.04  | 0.04 | 0.02  | 0.33 |
| Healthy vs overweight  | 0.03  | 0.07 | 0.01  | 0.68 |
| Healthy vs obesity     | -0.10 | 0.16 | -0.01 | 0.53 |

Note: dependent variable: well-being  $\frac{2}{2}$  a set

Note:  $\chi^2 = 0.00$ 

Thirdly, the 'total effect' is calculated, meaning sport participation on well-being. As we have seen in the previous analyses, this effect is significant and positive, when one participates in sports more frequently, the higher the level of well-being (b= 0.12, p=<0.01).

Lastly, the 'direct effect' is calculated of sport participation and BMI (D1, D2, D3) on well-being. Only sport participation significantly predicts levels of well-being (b=0.12, p=<0.01).

#### Table 38 Output total effect sport participation and BMI

|                        | В     | SE B | β    | р    |
|------------------------|-------|------|------|------|
| Constant               | -0.45 |      |      | 0.00 |
| Sport participation    | 0.12  | 0.02 | 0.12 | 0.00 |
| Healthy vs underweight | 0.02  | 0.04 | 0.01 | 0.56 |
| Healthy vs overweight  | 0.04  | 0.07 | 0.01 | 0.54 |
| Healthy vs obesity     | 0.07  | 0.16 | 0.01 | 0.65 |
|                        |       |      |      |      |

Note: dependent variable: well-being

Note:  $\chi^2 = 0.013$ 

Now we can conclude that the direct effect (b=-0.445, p=<0.01) is larger than the total effect (b= 0.117, p=<0.01), which means mediation does not take place according to the Baron & Kenny

(1986) method. However, definite statements about significance are subjected to this rule of thumb, we are unable to calculate an overall significance. Literature showed a contradictory effect (Coakley J., 2001; Voedingscentrum, 2015). However, the respondents had a certain age group, which might be less sensitive for overweight or obesity due to the frequent in-school gymnastic participation. This can also be seen in the descriptive statistics, where 66.6% of the respondents report normal weight and 27% report underweight.

4.4.4 Explaining well-being on based on sport participation through perceived health In order to determine if the relationship between sport participation and well-being can be explained through perceived health, a mediation analysis is performed. There was a significant indirect effect of sport participation on well-being through perceived health, b=0.0418, BCa CI [0.0324, 0.0528]. This represents a relatively small effect, k2= 0.0418, 95% BCa CI [0.0324, 0.0523]. This relation could be explained according to previous findings indicating sport participation leads to better mental and physical health (Khan, et al., 2012; Penedo & Dahn, 2005; Steptoe & Butler, 1996).

|                    |       |      | _     |      |
|--------------------|-------|------|-------|------|
|                    | Coeff | SE   | T     | Р    |
| Age                | -0.07 | 0.02 | -2.78 | 0.01 |
| Education          | -0.07 | 0.01 | -4.71 | 0.00 |
| Gender             | -0.01 | 0.01 | -1.96 | 0.05 |
| Nationality        | -0.01 | 0.00 | -0.69 | 0.49 |
| Subjective poverty | 0.28  | 0.02 | 11.67 | 0.00 |

Table 39 Output mediation analysis sport participation on well-being through subjective health

Note: The sobel test is significant (p=0.000).

Remarkable is that except nationality (b=-0.01, p=0.49) all background variables significantly contribute to the mediating relationship between sport participation and well-being through subjective health. When we look at the effect of nationality in the relationship, we can say that a different (non-Dutch in this case) nationality does not influence the relation. This could be due to the previously mentioned 'open' nature of sports, where all different ethnic groups come together and are more equal than they often are in society (Coalter, Allison, & Taylor, 2000). Poverty is the strongest predictor influencing the mediating relationship (b=0.28, p=<0.01). This could be explained through literature suggesting that income poverty possibly influences subjective poverty (Nándori, 2011). This shows that young people living in poverty participate less frequent in sports, experiencing a lower subjective health which leads to lower well-being. For hypothesis six is looked at subjective health as a benefit of sport participation, and if that can explain the higher experienced well-being levels.

4.4.5 Explaining well-being based on sport participation through emotional health

In order to determine if the relationship between sport participation and well-being can be explained due to emotional health, a mediation analysis is performed. There was a significant indirect effect of sport participation on well-being through emotional health, b=0.0491, BCa CI [0.0311, 0.0655]. This represents a relatively small effect, k2= 0.0516, 95% BCa CI [0.0343, 0.0686]. Literature indicated that sports participation has an escapism dimension, leading to less negative feelings and emotions (Penedo & Dahn, 2005), which can be explanatory for these findings.

|                    | Coeff | SE   | Т     | Р    |
|--------------------|-------|------|-------|------|
| Age                | -0.07 | 0.02 | -2.89 | 0.00 |
| Education          | -0.07 | 0.02 | -5.02 | 0.00 |
| Gender             | -0.02 | 0.01 | -2.18 | 0.03 |
| Nationality        | -0.00 | 0.00 | -0.15 | 0.88 |
| Subjective poverty | 0.32  | 0.02 | 12.97 | 0.00 |

Table 40 Output mediation analysis sport participation on well-being through emotional health

Note: The sobel test is significant (p=0.000).

What can be observed is that all background variables are significant except for nationality (b=-0.00, p=0.88). Especially poverty is an important and strong contributor (b=0.32, p=<0.01) since concluded from the literature review was that poverty influences this relationship. Poverty is proven to have negative influence on emotional health, indicating that depression, stress occurs more frequent amongst this group (Marmot, 2010; Power, et al., 2007). This is due to also young people often worrying about the financial or social situation of the parents or guardians.

# **4.5 Conclusion**

This sub-chapter wraps up the findings and provides a summary of the results and answers to the hypotheses.

The first two hypotheses determine the effect of poverty on well-being and what role sport participation can play in this relationship. Literature indicated that there is a negative relation between subjective poverty and subjective well-being (Bayram, Aytac, Aytac, Sam, & Bilgel, 2012; Knies, 2015; Marmot, 2010; Power, et al., 2007). Previous studies have indicated that people living in poverty situations are often left out of (leisure) activities (Levermore, 2008; Reijgersberg & Van der Poel, 2014).

The first regression analysis supported the literature, the lower levels of subjective poverty the respondents report, the higher experienced levels of well-being (b=0.34, p=<0.01). This finding is very interesting, but not very renewing.

Age is a significant control variable. However, since the target group is very specific with a low standard deviation, this could be studied at further amongst different age groups. Within this study we can say that for people between 13 and 17 years old, the younger one is the higher the well-being (b= -0.08, p=<0.01). Another relationship is education (b=-0.06, p=<0.01), indicating the higher the education the lower the well-being. The finding contradicts previous findings in the United States (Cohen, 2006). An explanation for this could be that the United States is a republic with a different school system. Also supporting literature regarding education and well-being is previously discussed (Sabates & Hammond, 2008), which could be explained according to the previous discussed quote by Albert Einstein "the more I learn the less I know"., finding a positive relationship between education and well-being. We can conclude that H1 can be supported, meaning that when young people feel like living in poverty, they experience lower well-being levels than young people not feeling that they are missing out on certain activities. The research by Ewing et al. (2002) assumes that sport participation could be one of the leisure activities people in poverty do not participate in (Ewing, Gano-Overway, Branta, & Seefeldt, 2002)

The relationship of poverty and well-being is not only significant, also the indirect effect of the mediation analysis of poverty on sport participation is significant (b=0.121, p=<0.01). Meaning the less young people feel that as living in poverty, the more they participate in sports, influencing the levels of well-being positively. As found in previous studies, poverty situations influences lifestyles and leisure behavior (Ewing, Gano-Overway, Branta, & Seefeldt, 2002; Levermore, 2008; Reijgersberg & Van der Poel, 2014). Living in poverty can mean not possessing the financial means to facilitate for sport participation (Ewing, Gano-Overway, Branta, & Seefeldt, 2002). Additionally, poverty affects nutrition

(Drewnowski & Specter, 2004). People living in poverty spend less money on food, and low-cost food contains a great deal of added sugars and added fats (in order to preserve the food longer) compared to more expensive, 'healthy' food. This leads to lower energy levels and the food only satisfying for short amounts of time. This low-level energy can have a negative effect on the willingness and motivation to participate in sports (Ewing, Gano-Overway, Branta, & Seefeldt, 2002). H2 can be supported and is a more interesting finding than H1. This finding shows that people in poverty participate less in sports, leading to lower well-being. This is a relatively new finding, especially measured in this quantitative manner with a specifically aged target group. Young people that experience to live in poverty report lower levels of well-being, and young experiencing lower levels of subjective poverty participate more frequently in sports than their peers, leading to higher levels of well-being.

Literature indicated that sport participation has the potential to lead to higher well-being levels (Collins, 2004), however, this was not empirically proven. Having said that, hypothesis three aimed to uncover if young people that participate more frequent in sports experience higher well-being levels.

The results of the regression analysis accept hypothesis three, the more frequent the respondent participates in sports, the higher the subjective well-being (b=0.118, p=<0.01). This finding is also relatively new, since most literature focuses on the effect of sport participation on social capital (Seippel, 2006). This study showed that young people participate more frequently in sport, they experience higher levels of satisfaction with life, school, friends, family, home and leisure.

But what is it in sport participation that leads to these higher well-being levels? The remaining four hypotheses aim to determine the effect of sport participation on levels of well-being through the benefits sport brings. Literature on poverty has shown that poverty has a negative effect on social exclusion (Berghman , 1995; Eurostat, 1998; Moisio, 2002), whereas sport participation has proven to stimulate social inclusion (Veenhoven, 2008). Literature has indicated that there is a need for research on the effect of poverty on sport, and sport on social exclusion (Collins & Kay, 2014), making this relationship interesting to study.

The mediation analysis showed a significant positive effect adding social exclusion as an explanatory variable to the analysis of sport participation on well-being (b= 0.0126, p= <0.01). The more that young people participate in sports, the more socially included they feel and therefore experience higher levels of well-being. The fourth hypothesis can also be supported. Objective poverty (b=0.32, p=<0.01) is a significant background variable, meaning income has an influence on this relationship.

Health is often discussed as a negatively affected by poverty (Hirsch & Spencer, 2008; Kelly & Bartley, 2010). Family has a high influence on the child's behavior and health through lifestyles (e.g. sporting, smoking or violent behavior), which strongly links in with the socioeconomic status of the parents (Treanor, 2012). Sport is expected to contribute positively to health and therefore well-being. The last three hypotheses are therefore considering health. The fifth hypothesis looks at the relationship of sport participation on well-being through objective health

First a logistic regression was performed of sport participation on BMI due to the dependent variable being multicategorical, with healthy weight as the reference category. This effect was partly significant (underweight and overweight were, obesity was not). This can be due to the small number of respondents belonging to the obesity category. Next, a multiple regression was performed to see if BMI could predict levels of well-being. Thirdly, the total effect of sport participation on well-being was looked at again (b= 0.12, p=<0.01), and was compared to the direct effect (sport participation and all three BMI dummy variables on well-being), showing that the direct effect is significant (b=-0.445, p=<0.01) and stronger than the total effect, which indicates mediation does not take place. Hypothesis five has therefore been rejected. Literature showed a contradictory effect (Coakley J. , 2001; Voedingscentrum, 2015). However, the respondents had a certain age group, which might be less sensitive for overweight or obesity due to the frequent in-school gymnastic participation. This can also be seen in the descriptive statistics, where 66.6% of the respondents report normal weight and 27% report underweight.

Poverty also has also been proven to have a negative influence on subjective health (Hunt & McEwen, 2008; Veenhoven, 2008). For hypothesis six is looked at subjective health as a benefit of sport participation, and if that can explain the higher experienced well-being levels. We can see there is a positive significant effect, sport participation leads to a higher evaluation of personal health status compared to others, leading to higher levels of well-being (b=0.04, p=<0.01). This could be since sport participation leads to better mental and physical health (Khan, et al., 2012; Penedo & Dahn, 2005; Steptoe & Butler, 1996), which could explain the matter of subjective health.

The last hypothesis demonstrated the effect of sport participation on well-being through levels of emotional health. Poverty is proven to have negative influence on emotional health, indicating that depression, stress occurs more frequent amongst this group (Marmot, 2010; Power, et al., 2007). The variable emotional health was measured through a factor analysis on the variables of feeling worried, angry, anxious, depressed and worthless. The higher one scores on this new variable, the less of such feelings are experienced. The mediation analysis showed that emotional health can partly explain the relationship between sport participation and well-being (b=0.05, p=<0.01), meaning the more one participates in sports, the lower levels one experiences of being worried, angry, anxious, depressed or worthless, which explains the higher experienced levels of well-being. Literature indicated that sports participation has an escapism dimension, leading to less negative feelings and emotions (Penedo & Dahn, 2005), which can be explanatory for these findings.

A priori findings were expected, meaning no differences from literature to findings. This has been partly true, six out of seven hypotheses have been accepted.

# 5 Conclusion

This thesis has focused on the question to what extent sport participation mediates the relationship between subjective poverty and well-being. Secondly, it has questioned to what extent the benefits of sport participation mediate the relationship between sport participation and well-being. These questions have been answered using a large-scale dataset on children of the age group thirteen until seventeen. The results show that the relationship between subjective poverty and well-being can partly be explained through sport participation. The relatively positive relationship between subjective poverty and well-being has been found in previous studies (Bayram, Aytac, Aytac, Sam, & Bilgel, 2012; Knies, 2015; Marmot, 2010; Power, et al., 2007). The less one feels to live in poverty, the higher the well-being. This is presumably the case because people living in subjective poverty are more often excluded of leisure activities such as sport and cultural participation than people not living in poverty (Levermore, 2008; Reijgersberg & Van der Poel, 2014). Moreover, the results suggest the demographic variables age education and gender influence the relationship between subjective poverty and wellbeing.

The second set of analyses show that the relationship between sport participation and wellbeing can partly be explained by a variety of benefits sport participation can bring. Earlier research highlighted the positive relationship between sport participation and well-being (Collins, 2004). However, the explanatory factors for this relationship were not uncovered in previous literature. The positive effect of sport participation on social inclusion and health has been discussed before as well. However, these discussions did not confirm to influence the relationship between sport participation and well-being. This thesis has proven that the more socially included one is because of sport participation, the higher one's well-being is. When young people participate in sports, fewer feelings of being scared, bullied or teased occur. This could be explained through the inclusive dimension of sport, often being an out-of-house leisure activity, which leads to more social contacts (CBS, 2009). Coalter et al. (2000) explain these social contacts emerge because through sports social boundaries fade; i.e. socioeconomic backgrounds are less important during participation. Also Wheatley & Bickerton (2016) defined this matter with the value of 'togetherness', when people do or achieve things together, and feel like а group, they feel more included. Also, the more positive an individual scores on perceived health as a result from sport participation, the higher the well-being. The research by Veenhoven (2008) had indicated that how one compares the self by others is sometimes more important than how one perceives the self. Sport participation often promotes a healthy lifestyle (Penedo & Dahn, 2005), which can lead to an individual rating personal health higher compared to others. Finally, this thesis has proven emotional health is an exploratory factor. This can be explained because sport participation has an escapism dimension (Stander, 2016). However, previous literature has uncovered that the motivation for participation should be chosen freely, meaning this is a precondition of the escapism dimension. This gives feelings of being in control, leading to less feelings of stress (Iwasaki & Mannell, 2000).

This leads to answering the central questions of this research. Young people living in poverty participate less frequently in sports, which explains lower levels of well-being. This can be due to access problems (either financial or social). As explained in the introduction, sport participation has positive benefits for everyone. This thesis has proven when young people participate in sport more frequent, the more benefits (social inclusion and health) are experienced which influence the self-reported well-being levels. This can be explained through the out-of house (CBS, 2009) and escapism dimension (Stander, 2016) of sports.

Zooming out, we can conclude that sport can help young people living in poverty situations. This thesis contributed to our understanding of what effect sport can have for young people in poverty. In the Netherlands, organizations as the Jeugdsportfonds aim to create opportunities for young people who are not able to join a sports club. Therefore, this thesis can be used for such organizations in order to get awareness and support for their activities. Scientifically, this thesis has contributed to knowledge

on the relationship between poverty and well-being and sport participation and well-being. Furthermore, this research has demonstrated that sport participation can make a difference for young due to the benefits brings. people in poverty situations, sport participation Considering practical implications for the commissioner, the Mulier Instituut should strengthen partnerships with the Jeugdsportfonds. Executing qualitative research in the future together could result in more insights into the meaning of sport for young people in poverty. For example, by using ethnographic research for this specific (and sensitive) group (young people in poverty). The meaning of sports for this group can be researched more in-depth. Open endedquestions can lead to different results than a closed questionnaire. However, this thesis has given insights for a structure for this qualitative research. This research has highlighted the importance of sports for young people, but qualitative research gives the opportunity to the respondent to answer questions more freely. Questions such as 'What does sport mean for you?', 'What did you learn or benefit from sporting?' and 'Did something change through sporting?' would be very interesting interview questions that emerged from writing this thesis. Ethnographic research with people living in poverty has been done in the past (Collins & Mayer, 2006). However, the research is often done amongst parents and not on the young people themselves. Also the relationship of poverty on wellbeing through the benefits of sport participation has not been researched before. This conclusion now takes a turn towards the limitations of this study and opportunities for future research.

# **Limitations & Future research**

Throughout this thesis, a variety of limitations and opportunities for future research can be identified. As also stated in the introduction, new measurement tools should be explored in order to 'measure' poverty. A variety of researchers (Knies, 2015; Ravallion, 2012) have indicated that formal poverty measures (e.g. income) are not the only determents of poverty. This thesis has contributed to this matter by perceiving poverty on а subjective matter. Objective/income poverty was only briefly discussed within this thesis as a background variable. Literature indicated a relationship between objective and subjective poverty. Using subjective poverty as an indicator of poverty has been done in previous research (Nándori, 2011; Ravallion, 2012). However, it would be interesting to see if income poverty has an influence on well-being. Literature has indicated that measuring poverty remains a difficult issue. Therefore, we also have to take into account that young people might not answer the question 'how often do you miss out on activities because you can not afford it' completely honest. This might be due to social pressure and the sensitivity of the question. It might therefore be interesting to research the psychological processes of the phenomenon. However, due to the limitations of the CILS4EU dataset, this was not possible. This research has built on the measurement tool developed by Ravallion (2012), who defined a 'social subjective poverty line'. This research has showed that young people that feel they live in poverty by experience comparing the self to others lower well-being levels. Furthermore, this thesis looks as sport as a mediator variable, whereas other (leisure) activities could have a positive or negative influence on this relationship between poverty and well-being levels. Leisure activities such as cultural participation would also be interesting to research using the same methodology. Also cultural participation is expected to increase levels of well-being (Levermore, 2008; Reijgersberg & Van der Poel, 2014). This could increase the explanatory power of the analyses. The same applies to the relationship of sport participation on well-being. This thesis only focused on social inclusion, objective, perceived and emotional health as positive benefits from sport participation. However, future research could look into other benefits that sport participation give. For example, sport participation is proven to have a positive effect on cognitive development (Felfe, Lechner, & Steinmayr, well-being levels? 2011), but what does this mean for Measuring well-being is a more long-term measurement than happiness. However, it would

remain interesting to see if respondents report different well-being levels at different times. Therefore, looking at longitudinal data would contribute to the validity of the outcome and conclusions of this research. Also cross-comparing international data would give interesting results. People living in the Netherlands report high levels of well-being compared to other countries (OECD, 2015), does this mean sport participation numbers in such countries are lower? This thesis could then contribute to highlighting the importance of sport participation and its influence on levels of well-being. Additionally, analyzing longitudinal data could tackle the problem of causation, which is inherent in mediation analyses.

This research was executed amongst secondary school children, which has an influence on selfreported sporting behavior (considering all secondary school students have gymnastics for two hours a week). Due to these numbers being self-reported, one might consider school gymnastics as sports, yet others might not. Another reason why the answer category of sport frequency is rated so high could be due to the reason of societally desirable answers. One might state to participate once or twice a week since this answer is more socially accepted than once or twice a month. This could possibly be due to the media displaying small sized models and emphasizing the importance of healthy exercise and nutrition. This especially affects young people that are more sensitive for such images and advertisements.

Another limitation of this study is related to the definition of sport participation; which is done through self-reported frequencies. As discussed in the literature review, Biddle et al. (1992) suggest that respondents perceive sport participation individually, and possibly different from one another (Biddle, Bull, & Seheult, 1992). If this is the case, results might be biased for non-sporting respondents. However, a number of studies presented results that the more frequent one participates in sports, the higher the well-being (Iwasaki, Zuzanek, & Mannell, 2001; Mock, Wilson, Smale, & Hilbrechtb, 2013; Yao, 2015), meaning it is solely on how often one sports, which does not matter that individuals perceive sporting differently. Future research is needed on this issue. The benefits of working with an age group with a low standard deviation is that conclusions are specifically aimed at this group. However, when this group ages, the results possibly change. Therefore, it would be interesting to look at other age groups at different stages in life in order to enhance the conclusions.

Despite the fact that this thesis identified a variety of limitations, this thesis also added various new insights. For example, on the relationship between poverty and well-being, and its relation to sport participation. Often studies have highlighted the negative effects of poverty on young people, but not what could possibly counteract these effects. Another significant contribution is measuring health in a variety of ways (subjective, objective and emotional), previous research often focuses on solely one of the varieties. Often is assumed that people living in poverty experience lower levels of health, which negatively influences the well-being levels, but never extend such assumptions or findings with possible 'solutions', as this thesis has proven sport participation could support towards making that

To conclude, this thesis has shown the importance of sport participation in general as well as for young people in poverty situations. Despite some limitations of this thesis, various new insights are obtained. Contemporarily, national budget cutbacks on the area of sports are made, especially club contributions have increased (Van der Poel, 2016). This is a trend the commissioner (Mulier Instituut) can play into. Policy makers who aim at stimulating equality of society focusing on poverty are advised to encourage sport participation. If policy makers want young people to participate in sports more, it would help to dedicate funding towards organizations or local governments in order to stimulate sports. When such local governments and organizations see the importance of sports for young people in poverty, this might stimulate a feeling of moral duty. Activities of the Jeugdsportfonds can be

strengthened by research into the role of sports for young people, as this thesis did. This thesis can therefore be considered as a contribution to as well theory as practice.

# Bibliography

- Baar, P. (2012). Peer Aggression and Victimization in Dutch Sports Clubs and Primary Schools of 9 to 13 Year-Old Students. Utrecht: Utrecht University.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Bartram, D. (2011). Elements of a Sociological Contribution to Happiness Studies: Social Context, Unintended Consequences, and Discourses. University of Leicester, Department of Sociology, Leicester.
- Bayram, N., Aytac, S., Aytac, M., Sam, N., & Bilgel, N. (2012). Poverty, Social Exclusion, and Life Satisfaction: A Study From Turkey. *Journal of Poverty*, *16*(4), 375-391.
- Bellani, L., & D'Ambrosio, C. (2011). Deprivation, Social Exclusion and Subjective Well-Being. Social Indicators Research, 104(1), 67-86.
- Berghman , J. (1995). Social Exclusion in Europe: Policy Context and Analytical Framework. In G. Room. Bristol: Policy Press.
- Bhalla, A., & Lapeyre, F. (1997). Social exclusion: Towards an Analytical and Operational Framework. *Development and Change, 28*(3), 413-433.
- Biddle, S. J., Bull, S. J., & Seheult, C. L. (1992). Ethical and Professional Issues in Contemporary British Sport Psychology. *Sport Psychologist*, *6*(1), 66-76.
- Biesta, G. J., Stams, G. J., Dirks, E., Rutten, E. A., Veugelers, W., & Schuengel, C. (2001). Does sport make a difference? An exploration of the impact of sport on the social integration of young people. In J. Steenbergen, P. de Knop, & A. H. Elling, *Values and norms in sport* (pp. 95-113). Oxford: Meyer & Meyer Sport.
- Brooks-Gunn, J., & Duncan, G. J. (1997). The Effects of Poverty on Children. *Children and Poverty,* 7(2), 55-71.
- Brown, L., & Pollit, E. (1996, February). Malnutrition, Poverty and Intellectual Development. *Scientific American*, 38-42.
- Brunelle, J., Danish, S. J., & Fazio, R. (2002). The impact of a sport-based community service project on adolescent volunteers prosocial values. *Manuscript*.
- Caspersen, C. J., Powell, K. E., & Christenson, G. M. (1985). Physical Activity, Exercise, and Physical Fitness: Definitions and Distinctions for Health-Related Research. *Public health reports*, *100*(2), 126–131.
- CBS. (2009). Social Exclusion: A Measurement Instrument (Sociale Uitsluiting: Een Meetinstrument). Den Haag: CBS (Central Bureau of Statistics, Netherlands).
- CBS. (2010). Bevolking; generatie, geslacht, leeftijd en herkomstgroepering. Retrieved from Centraal Bureau voor de Statistiek: http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=37325&D1=0&D2=a&D3= 0&D4=0&D5=0-4&D6=l&HD=110629-1412&HDR=G5,T,G3,G2,G4&STB=G1

- CBS. (2014, December 18). Armoedessignalement 2014: Armoede in 2013 toegenomen, maar piek lijkt bereikt. Retrieved February 1, 2016, from Sociaal en Cultureel Planbureau, Centraal Bureau voor de Statistiek: http://www.cbs.nl/NR/rdonlyres/12342017-E9B1-4C03-9E99-53B7967149B1/0/pb14n086.pdf
- CBS. (2015). De oververtegenwoordiging van vrouwen in de bevolking met (langdurig) een laag inkomen manifesteert zich het sterkst in de leeftijdsgroepen 20–44 jaar. Centraal Bureau voor de Statitstiek, Den Haag. 9-30: Centraal Bureau voor de Statistiek.
- Chant, S. (2006). Re-thinking the "Feminization of Poverty" in relation to aggregate gender indices. *Journal of Human Development and Capabilities*, 201-220.
- Cloninger, R. C. (2004). A Brief Philosophy of Well-Being. In *Feeling Good: The Science of Well-Being* (1 ed.). New York: Oxford University Press.
- Coakley, J. (2001). Sports in society: Issues and controversies. Boston, McGraw Hill.
- Coakley, J. J. (2009). Sports in society: Issues & controversies (10 ed.). Boston: McGraw Hill.
- Coalter. (2010). Sport-for-development. Going beyond the boundary. Sport in Society: cultures, commerce, media, politics, 13, 1374-1391.
- Coalter, F., Allison, M., & Taylor, J. (2000). *The Role of Sport in Regenerating Deprived Areas.* University of Edinburgh, The Scottish executive central research unit. Edinburgh: Crown.
- Cobb, J., & Daly, H. (1989). For the common good: redirecting the economy toward community, the environment and a sustainable future. Boston: Beacon Press.
- Cohen, J. (2006, July). Social, Emotional, Ethical, and Academic Education: Creating a Climate for Learning, Participation in Democracy, and Well-Being. *Harvard Educational Review*, *76*(2), 201-237.
- Collins, J., & Mayer, V. (2006). Mothers' Family Networks and Livelihood in the Context of Child Support Enforcement Policy.
- Collins, M. (2004). Sport, physical activity and social exclusion. 22(8), 727-740.
- Collins, M., & Kay, T. (2014). Sport and Social Exclusion. London: Routledge.
- Cornelisse-Vermaat, J. R., Antonides, G., Van Ophem, J. A., & Van den Brink, H. M. (2006). Body Mass Index, Perceived Health and Structural Relationships. *Social Indicators Research*, *79*, 143-158.
- Cortina, J. M. (1993). What Is Coefficient Alpha? An Examination of Theory and Applications. *Journal* of Applied Psychology, 78(1), 98-104.
- Cozzarelli, C., Wilkinson, A. V., & Tagler, M. J. (2001). Attitudes Toward the Poor and Attributions for Poverty. *Journal of Social Issues*, *57*(2), 207-227.
- Diener, E. (1984). Subjective Well-Being. Psychological Bulletin, 95(3), 542-575.
- Dolnicar, S., Yanamandram, V., & Cliff, K. (2012). The contribution of vacations to quality of life. Annals of Tourism Research(39), 59–83.
- Drewnowski, A., & Specter, S. (2004). Poverty and obesity: the role of energy density and energy costs. *The American Journal of Clinical Nutrition*, 79(1), 6-16.

- Edginton, C., Jordan, D., DeGraaf, D., & Edginton, S. (1995). *Leisure and life satisfaction*. Madison: Brown & Benchmark.
- Eurostat. (1998). *Recommendations on social exclusion and poverty statistics*. (Office for official Publications of the European Communities) Retrieved January 19, 2016, from http://www1.ibge.gov.br/poverty/pdf/eurostat1.pd
- Ewing, M. E., Gano-Overway, L. A., Branta, C. F., & Seefeldt, V. D. (2002). The role of sports in youth development. In M. Gatz, M. A. Messner, & S. J. Ball-Rokeach, *Paradoxes of youth and sport* (pp. 31-48). New York: State University of New York Press.
- Federal, Provincial and Territorial Advisory Committee on Population Health. (1999). *Toward a Healthy Future: Second Report on the Health of Canadians.* Ottawa: Health Canada.
- Felfe, C., Lechner, M., & Steinmayr, A. (2011). Sports and Child Development. *Institute for the Study* of Labor.
- Field, A. (2012). Linear Models: Looking for Bias. *Discovering statistics*, 1-17. Retrieved from www.discoveringstatistics.com
- Fox, K. R. (1999). The influence of physical activity on mental well-being. *Public Health Nutrition,* 2(3a), 411-418.
- Frijters, P., Haisken-DeNew, J. P., & Shields , M. A. (2004). Money does matter! Evidence from increas- ing real income and life satisfaction in East Germany following reunification. . *he American Economic Review*, 94(3), 730-740.
- Frisch, M. B. (2000). Improving mental and physical health care through quality of life therapy and assessment. In E. Diener, & D. R. Rahtz, Advance in quality of life theory and research (pp. 207-241). Dordrecht, Netherlands: Routledge.
- Gasparini, W., & Talleu, C. (2010). *Sport and discrimination in Europe*. Strasbourg: Council of Europe Publishing.
- Gavin, J. (2004). Pairing Personality With Activity. The Physician and Sportsmedicine, 32(12), 17-24.
- Gupta, R.-S., de Wit, M. L., & McKeown, D. (2007). The impact of poverty on the current and future health status of children. *Paediatr Child Health*, *12*(8), 667-672.
- Haushofer, J., & Fehr, E. (2014). On the psychology of poverty. Science(344), 862-867.
- Hayes, A. F. (2013). Introduction to Mediation, Moderation and Conditional Process Analysis: A regression based approach. New York: The Guildford Press.
- Hirsch, D., & Spencer, N. (2008). Unhealthy lives: Intergenerational links between child poverty and poor health in the UK. *Poverty E.C.*
- Hunt, S. M., & McEwen, J. (2008). The development of a subjective health indicator. *Sociology of Health & Illness, 2*(3), 231–246.
- Iwasaki, Y., Zuzanek, J., & Mannell, R. (2001). The Effects of Physically Active Leisure on Stress-Health Relationships. *Canadian Journal Public Health*, 214 - 218.
- Iwasaki, Y., & Mannell, R. C. (2000). Hierarchical dimensions of leisure stress coping. *Leisure Sciences,* 22, 163-81.

- Jeugdsportfonds. (2016). Sport Opportunities for Children (Sportkansen voor kinderen). Retrieved January 19, 2016, from Jeugdsportfonds: http://www.jeugdsportfonds.nl/
- Kalmijn, M., & Uunk, W. (2007). egional value differences in Europe and the social consequences of divorce: a test of the stigmatization hypothesis. *Social Science Research*, *36*(2), 447 468.
- Kalter, F., Heath, A., Hewstone, M., Jonsson, J. O., Kalmijn, M., Kogan, I., & Tubergen, F. v. (2015).
  Children of Immigrants Longitudinal Survey in Four European Countries (CILS4EU. ZA5353.
  Cologne: GESIS Data Archive.
- Kay, T., & Spaaij, R. (2012, February). The mediating effects of family on sport in international development contexts. INTERNATIONAL REVIEW FOR THE SOCIOLOGY OF SPORT, 47(1), 77-94.
- Kelly, L. (2011). 'Social inclusion' through sports-based interventions? *Criticalsocial policy*, 31, 126-150.
- Kelly, Y., & Bartley, M. (2010). Parental and child health. In K. Hansen, H. Joshi, & S. Dex, *Children of the 21st Century: the first five years*. Bristol: The Policy Press.
- Khan, K. M., Thompson, A. M., Blair, S. N., Sallis, J. F., Powell, K. E., Bull, F. C., & Bauman, A. E. (2012). Sport and exercise as contributors to the health of nations. *380*, 59-64.
- Kinderombudsman. (2013). Children in Poverty in the Netherlands (Kinderen in Armoede in Nederland). Verwey-Jonker Instituut .
- Knies, G. (2015). Life Satisfaction and Material Well-being of Children in the UK. Understanding Society.
- Layard, R. (2005). Happiness: lessons from a new science. New York: Penguin press.
- Levermore, R. (2008). Sport: a new engine of development? *Progress in Development Studies, 8*(2), 183-190.
- Lipton, M. (1997). Poverty Are the Holes in the Consensus? World Development, 25(7), 1003-1006.
- MacPherson , S., & Silburn , R. (1998). The meaning and measurement of poverty. In J. Dixon, & D. Maracov , *Poverty. A persistent global reality* (pp. 1-16). London: Routledge.
- Marks, G. N. (2007). Income poverty, subjective poverty and financial stress. 29, 25-48.
- Marmot, M. (2010). *Fair Society, Healthy Lives*. Retrieved January 8, 2016, from The Marmot Review: http://www.marmotreview.org/
- Millar, J. (2007). Social Exclusion and Social Policy Research: Defining Exclusion. In D. Abrams, J. Christian, & D. Gordon, *Multidisciplinary Handbook of Social Exclusion Research*. Great Britain: John Wiley & Sons. Ltd.
- Ministerie van Onderwijs, Cultuur en Wetenschap. (2014). *Kerncijfers 2009 2013, onderwijs, cultuur en wetenschap.* Ministerie van Onderwijs, Cultuur en Wetenschap.
- Mock, S. E., Wilson, W. A., Smale, B., & Hilbrechtb, M. (2013). The association of physically active leisure with well-being among diverse racial groups. *Leisure/Loisir*, *37*(3), 287–301.

- Moisio, P. (2002). The nature of social exclusion: Spiral of precariousness of statistical category. In R. Muffels, P. Tsakloglou, & D. Mayes, *Social exclusion in European welfare states* (pp. 170-178). Cheltenham: Edward Elgar.
- Moore, K. A., Redd, Z., Burkhauser, M., Mbawa, K., & Collins, A. (2009). *Children in poverty: Trends, consequences, and policy options*. Retrieved May 4, 2016, from Childtrends: http://www.childtrends.org/Files//Child\_Trends-2009\_04\_07\_RB\_ChildreninPoverty.pdf
- Mulier Instituut. (2013). *Maatschappelijke betekenis van sport*. Retrieved February 2013, 18, from Mulier Instituut: http://www.mulierinstituut.nl/projecten/meerjarenprogramma/maatschappelijkebetekenis-van- sport.html
- Mulier Instituut. (2015, 10 30). Gemeenten geven bijna € 1,2 miljard uit aan sport. Retrieved 7 22, 2016, from Mulier Instituut: http://www.mulierinstituut.nl/actueel/nieuws/gemeenten-geven-bijna-e-12-miljard-uit-aan-sport/
- Nándori, E. S. (2011). Subjective Poverty and Its Relation to Objective Poverty Concepts in Hungary. Social Indicators Research, 102(3), 537-556.
- Nawijn, J., & Veenhoven, R. (2011). The effect of leisure activities on life satisfaction. *The Human Pursuit of Well-Being: A Cultural Approach*, 39-53.
- Neal, J. D., Sirgy, M. J., & Uysal, M. (1999). The role of satisfaction with leisure travel-tourism services and experience in satisfaction with leisure life and overall life. *Journal of Business Research*, 44(1), 153-164.
- Nolan, B., & Whelan, C. (1996). Resources, Deprivation and Poverty. Oxford: Oxford University Press.
- NPC. (2012). New Philanthropy Capital's Well-being Measure. Retrieved January 3, 2016, from http://www.well-beingmeasure.com/media/35455/about\_npc\_s\_wellbeing\_measure\_2012.pdf
- OECD. (2015). OECD Better Life Index. Retrieved January 25, 2016, from What matters most to: http://www.oecdbetterlifeindex.org/responses/#NLD
- Penedo, F. J., & Dahn, J. R. (2005, March). Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Current Opinion in Psychiatry*, 18(2), 189-193.
- Poggi, A. (2007). Does Persistence of Social Exclusion exist in Spain? *Journal of Economic Inequality*, 5(1), 53-72.
- Power, C., Atherton, K., Strachan, D. P., Shepherd, P., Fuller, E., Davis, A., . . . Stansfeld, S. (2007). Lifecourse influences on health in British adults: effects of socio-economic position in childhood and adulthood. *International Journal of Epidemiology*, 36, 532–539.
- Ratcliffe, C., & McKernan, S. M. (2010, June). *Childhood poverty persistence: Facts and consequences*. Washington: The Urban Institute.
- Ravallion, M. (2012, February). Poor, or Just Feeling Poor? On Using Subjective Data in Measuring Poverty. *Policy Research*.
- Reijgersberg, N., & Van der Poel, H. (2014). Sport Participation of Children in Poverty (Sportdeelname van Kinderen in Armoede). Mulier Instituut. Utrecht: Mulier Instituut.

- Roberts, G. C., & Pascuzzi, D. (1979). Causal Attributions in Sport: Some Theoretical Implications. Journal of Sport Psychology, 1, 203-211.
- Room, G. (1995). Poverty in Europe. Competing Paradigms of Analysis. *Policy and Politics, 23*(2), 103-113.
- Sabates, R., & Hammond, C. (2008). The Impact of Lifelong Learning on Happiness and Well-being. 3-22.
- Saraceno, C. (2001). Social exclusion, Cultural Roots and Diversities of a Popular Concept. *Social* exclusion and children. 3 4 May. Columbia: Columbia University.
- Sato , M., Jordan, J. S., & Funk, D. C. (2014, May 14). The Role of Physically Active Leisure for Enhancing Quality of Life. *Leisure Sciences: An Interdisciplinary Journal*, 36(3), 293-313.
- Scanlan, T. K., Babkes, M. L., & Scanlan, L. A. (2005). Participation in Sport: A Developmental Glimpse at Emotion. In J. L. Mahoney, R. W. Larson, & J. S. Eccles, Organized Activities as Contexts of Development (pp. 275-309). London: Routledge.
- Schlesinger, T., & Nagel, S. (2016). Individual and contextual determinants of stable volunteering in sport clubs. *International Review for the Sociology of Sport*, 1-21.
- Seippel, Ø. (2006). Sport and Social Capital . ACTA SOCIOLOGICA, 49(2), 169-183.
- Sen, A. (2000). Social exclusion: concept, application and scrutiny. Social Development Papers No. 1.
- Sen, A. (2002). Health: perception versus observation. BMJ, 324(7342), 860-861.
- Sherif, M. (1966). The psychology of social norms. Oxford, England: Harper Torchbooks.
- Silver, H. (2007). The process of social exclusion: the dynamics of an evolving concept. *CPRC Working Paper 95*.
- Silverstein, B., Peterson, B., & Perdue, L. (1986). Some correlates of the thin standard of bodily attractiveness for women. *International Journal of Eating Disorders*, *5*(5), 895-905.
- Sletten, M. A. (2010, April 21). Social costs of poverty; leisure time socializing and the subjective experience of social isolation among 13–16-year-old Norwegians. *Journal of Youth Studies*, 291-315.
- Somerville, P. (1998). Explanations of Social Exclusion: Where does housing fit in? *Housing studies*, 13(6), 761-780.
- Spaaij, R. (2009). The social impact of sport: diversities, complexities and contexts. *Sport in Society*(12), 1109-1117.
- Spaaij, R., Magee, J., & Jeanes, R. (2013, June). Urban Youth, Worklessness and Sport: A Comparison of Sports-based Employability Programmes in Rotterdam and Stoke-on- Trent. Urban Studies at 50, 50(8), 1608-1624.
- Stander, F. W. (2016). Escapism motive for sport consumption as a predictor of meaning in life. *Journal of Psychology*, 26(2), 113-118.
- Steptoe, A. S., & Butler, N. (1996, June 29). Sports participation and emotional wellbeing in adolescents. *Lancet*, *347*(9018), 1789-1792.

- Stichting Kinderarmoede . (2016, January 18). Foundation Child Poverty Help Children Help in the Netherlands (Stichting Kinderarmoede – help kinderen helpen in Nederland). Retrieved from Stichting Kinderarmoede: http://www.stichting-kinderarmoede.nl/
- Svoboda, B. (1994). *Sport and Physical Activity as a Socialisation Environment: Scientific Review Part* 1. Council of Europe, Committee for the Development of Sport (CDDS).

Tiessen-Raaphorst, A. (2008). Weinig over de schreef. Sociaal Cultureel Planbureau, Den Haag.

- Tiessen-Raaphorst, A., van den Dool, R., & Vogels, R. (2014). *Uitstappers en doorzetters; de persoonlijke en sociale context van sportdeelname en tijdsbesteding aan sport.* Sociaal Cultureel Planbureau. Den Haag: Sociaal Cultureel Planbureau.
- Todman, L. C. (2004). Reflections on Social Exclusion. University of Milano.
- Treanor , M. C. (2012). *Impacts of poverty on children and young people*. Edinburgh: Scottish Child Care and Protection Network.
- UN. (2007, March). UN General Assembly adopts powerful definition of child poverty share tools bar START. Retrieved March 29, 2016, from Unicef: http://www.unicef.org/media/media\_38003.html
- United Nations Inter-Agency Task Force on Sport for Development and Peace. (2003). Sport for Development and Peace: Towards Achieving the Millennium Development Goals. United Nations. Report. Retrieved from http://www.un.org/wcm/webdav/site/sport/shared/sport/pdfs/Reports/2003\_interagency\_r eport\_ENGLISH.pdf
- van den Broek, A. (2008). Vrijetijdsbesteding als bron van binding in Multi-etnisch Nederland? In P. Schnabel, R. Bijl, & J. de Hart, *Betrekkelijke betrokkenheid. Studies in sociale cohesie, sociaal en cultureel rapport 2008* (pp. 341-361). Den Haag: SCP.
- Van der Poel, H. (2016). Effecten van bezuinigen op sport. Sportexpert.
- Veenhoven, R. (2008). Sociological Theories of Subjective Well-Being. *The Science of Subjective Wellbeing: A tribute to Ed Diener,* 44-61.
- Verbakel, E. (2012). Subjective well-being by partnership status and its dependence on the normative climate . *European Journal of Population , 28*(2), 205-232.
- Voedingscentrum. (2015). *Heb ik een gezond gewicht?* Retrieved January 18, 2016, from Voedingscentrum, BMI: http://www.voedingscentrum.nl/nl/mijn-gewicht/heb-ik-eengezond-gewicht.aspx
- Vrooman, J., & Snel, E. (1999). Looking for the truly poor (Op zoek naar de "echte armen"). In G.
  Engbersen, J. C. Vrooman, & E. Snel, Armoede en verzorgingsstaat: vierde jaarrapport armoede en sociale uitsluiting (pp. 15-47). Amsterdam: Amsterdam University Press.
- Wankel, L. M., & Sefton, J. M. (1994). Physical activity and other lifestyle behaviors. *Physical Activity, Fitness and Health*, 530-554.
- Wheatley, D., & Bickerton, C. (2016, February 29). Subjective well-being and engagement in arts, culture and sport. *Springerlink*, 1-26.

- Whelan, C. T., Layte, R., & Maitre, B. (2002). Multiple deprivation and persistent poverty in the European Union. *Journal of European Social Policy*, *12*(2), 91–105.
- Winkelmann, L., & Winkelmann, R. (1998). Why are the unemployed so unhappy? Evidence from panel data. *Economica*, 65(257), 1 15.
- World Health Organization. (1948). Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference., 2, p. 100. New York.
- World Health Organization. (2003). *Health and Development Through Physical Activity and Sport.* World Health Organization. Geneva: World Health Organization.
- Yao, Y. (2015). Leisure and life satisfaction among Tai Chi and public square dance participants in Hong Kong. Sociology. Lingnan: Lingnan University.

# Appendices

#### Table 21 Operationalization variables and descriptive statistics

| Variable                  | Operationalization  | Descriptive statistics  |
|---------------------------|---|---|
| Subjective poverty        | 1= I do miss out frequently Always = 0.7%; Often = 4.2%; Sometime |   |
|                           | 4 = I do not miss out   | 63.1%   |
| Sport participation       | 1= Never  | Never = 4%; Less often = 10.1%; Once or several times a month       |
|                           | 5= Every day  | = 7.2%; Once or several times a week = 61.5%; Every day =           |
|                           |   | 17.2%   |
| Subjective well-being     |   | Dummy from factor analysis; the higher one scores the higher        |
|                           |   | one rates life as a whole   |
| Satisfaction with life    | 1= Very unsatisfied   | Very unsatisfied = 0.3%; 2 = 0.3%; 3 = 0.6%; 4 = 0.8%; Neutral      |
|                           | 10= Very satisfied  | = 2.4%  |
|                           |   | 6 = 6.1%; 7 = 17.9%; 8 = 37.2%; 9 = 20.2%; Very satisfied           |
|                           |   | =14.2%  |
| Satisfaction with school  | 1= Very unsatisfied   | Very unsatisfied = 1.2%; 2 = 0.7%; 3 = 1.9%; 4 = 3.1%; Neutral=     |
|                           | 10= Very satisfied  | 7.4%;   |
|                           |   | 6 = 18.5%; 7 = 32.1%; 8 = 23.3%; 9 = 8.0%; Very satisfied = 3.7%    |
| Satisfaction with home    | 1= Very unsatisfied   | Very unsatisfied = 0.5%; 2 = 0.6%; 3 = 0.8%; 4 =1.5% ; Neutral      |
|                           | 10= Very satisfied  | = 3.1%;   |
|                           |   | 6 = 5.9%; 7 = 13.9%; 8 = 24.2%; 9 = 26.5%; Very satisfied =         |
|                           |   | 23.0%   |
| Satisfaction with friends | 1= Very unsatisfied   | Very unsatisfied = 0.5%; 2 = 0.2%; 3 = 0.2%; 4 = 0.4%; Neutral      |
|                           | 10= Very satisfied  | = 1%; 6 = 2.5%; 7 = 9.6%; 8 = 25.1%; 9 = 33.2%; Very satisfied      |
|                           |   | = 27.3%   |
| Satisfaction with leisure | 1= Very unsatisfied   | Very unsatisfied = 0.7%; 2 = 0.4%; 3 = 0.9%; 4 = 1.3%; Neutral      |
|                           | 10= Very satisfied  | = 2.8%; 6 = 7.0%; 7 = 15.7%; 8 = 26.2%; 9 = 24.0%; Very             |
|                           |   | satisfied = 21.0%   |
|                           |   |   |
| Social exclusion          |   | Dummy from factor analysis: the higher one scores the higher        |
|                           |   | one feels socially included   |
| Scared                    | 1 = Every day   | ,<br>Every day = 0.6%; Less or several times a week = 2.2%: Less    |
|                           | 4 = Never   | often = 15.6%; Never = 81.6%  |
| Teased                    | 1 = Every day   | Every day = $1.3\%$ ; Less or several times a week = $7.0\%$ : Less |
|                           | 4 = Never   | often = 24.8%; Never = 66.9%  |
| Bullied                   | 1 = Every day   | Every day = 1.0%; Less or several times a week = 2.9%; Less         |
|                           | 4 = Never   | often = 11.6%; Never =84.5%   |

| Objective health     | Dummy 1: underweight             | Underweight = 27%; Normal weight = 66.6%; Overweight =                              |  |  |  |
|----------------------|----------------------------------|---|--|--|--|
|                      | Dummy 2: healthy                 | 5.3%; Obese = 1%  |  |  |  |
|                      | Dummy 3: overweight              |   |  |  |  |
|                      | Dummy 4: obese                   |   |  |  |  |
| Perceived health     | 1= Very bad                      | Very bad = 0.3%; Bad = 5.3%; Same = 28.1%; Good = 41.5%;                            |  |  |  |
|                      | 5= Very good                     | Very good = 24.8%   |  |  |  |
| Emotional health     |                                  | Dummy from factor analysis; the higher one scores the higher one's emotional health |  |  |  |
| Feel worried         | 1 = Often true                   | Often true = 15.8%; Sometimes true = 44.3; Rarely true =                            |  |  |  |
|                      | 4= Never true                    | 32.5%; Never true = 7.4%;   |  |  |  |
| Feel angry           | 1 = Often true                   | Often true = 10.4%; Sometimes true = 33.7%; Rarely true =                           |  |  |  |
|                      | 4= Never true                    | 41.8%; Never true = 14.0%   |  |  |  |
| Feel anxious         | 1 = Often true                   | Often true = 3.6%; Sometimes true = 15.4%; Rarely true =                            |  |  |  |
|                      | 4= Never true                    | 43.6%;  |  |  |  |
|                      |                                  | Never true = 37.4%;   |  |  |  |
| Feel depressed       | 1 = Often true                   | Often true = 2.9%; Sometimes true = 15.9%; Rarely true =                            |  |  |  |
|                      | 4= Never true                    | 43.6%;  |  |  |  |
|                      |                                  | Never true = 37.6%  |  |  |  |
| Feel worthless       | 1 = Often true                   | Often true = 2.5%; Sometimes true = 10.7%; Rarely true =                            |  |  |  |
|                      | 4= Never true                    | 29.9%;  |  |  |  |
|                      |                                  | Never true =57%   |  |  |  |
| Act without thinking | 1 = Often true                   | Often true = 11.4%; Sometimes true = 36%; Rarely true =                             |  |  |  |
|                      | 4= Never true                    | 34.5%; Never true = 18%   |  |  |  |
| Background Variables |                                  |   |  |  |  |
| Gender               | 1 = Male                         | Male = 49.1%; Female = 50.8%  |  |  |  |
|                      | 2 = Female                       |   |  |  |  |
| Age                  | Birth year – Survey year         | M = 14; SD = 0.65   |  |  |  |
| Education            | 1= "brugklas"                    | Brugklas = 0.8%; Vmbo-b/vmbo-k/vmbo-mbo2 = 26.4%;                                   |  |  |  |
|                      | 2= "vmbo-b/vmbo-k/vmbo-mbo2"     | Vmbo-g/vmbo-t = 34.1%;  |  |  |  |
|                      | 3= "vmbo-g/vmbo-t"               |   |  |  |  |
|                      | 4= "havo"                        |   |  |  |  |
|                      | 5= "vwo/es/ib                    |   |  |  |  |
| Nationality          | 1= "Only Dutch"                  | Only Dutch =87.5%; Dutch and other nationality = 9.2%; Only                         |  |  |  |
|                      | 2= "Dutch and other nationality" | other nationality = 3.3%;   |  |  |  |
|                      | 3= "Only other nationality"      |   |  |  |  |

|                          | Ν    | Min | Max | Mean | SD   |
|--------------------------|------|-----|-----|------|------|
| Independent              |      |     |     |      |      |
| Subjective Poverty       | 4273 | 1   | 4   | 3.59 | 0.61 |
| Sport participation      | 4259 | 1   | 5   | 3.78 | 0.98 |
| Dependent                |      |     |     |      |      |
| Social inclusion         |      |     |     |      |      |
| Scared                   | 4339 | 1   | 4   | 3.78 | 0.50 |
| Teased                   | 4340 | 1   | 4   | 3.57 | 0.68 |
| Bullied                  | 4339 | 1   | 4   | 3.80 | 0.53 |
| Health effects           |      |     |     |      |      |
| BMI                      | 3951 | 1   | 4   | 1.80 | 0.57 |
| Subjective               | 4331 | 1   | 5   | 2.15 | 0.87 |
| Emotional                |      |     |     |      |      |
| Worried                  | 4341 | 1   | 4   | 2.32 | 0.83 |
| Angry                    | 4340 | 1   | 4   | 2.49 | 0.86 |
| Anxious                  | 4336 | 1   | 4   | 3.15 | 0.81 |
| Depressed                | 4337 | 1   | 4   | 3.16 | 0.79 |
| Worthless                | 4337 | 1   | 4   | 3.41 | 0.78 |
| Well Being               |      |     |     |      |      |
| Life general             | 4327 | 1   | 10  | 8.01 | 1.40 |
| School general           | 4329 | 1   | 10  | 6.89 | 1.60 |
| Ноте                     | 4326 | 1   | 10  | 8.21 | 1.64 |
| Friends                  | 4324 | 1   | 10  | 8.63 | 1.31 |
| Leisure time             | 4323 | 1   | 10  | 8.22 | 1.64 |
| <b>Control Variables</b> |      |     |     |      |      |
| Age                      | 4315 | 13  | 17  | 14   | 0.65 |
| Education                | 4363 | 1   | 5   | 3.29 | 1.07 |
| Gender                   | 4363 | 1   | 2   | 1.41 | 3.07 |
| Nationality              | 4363 | 0   | 1   | 0.16 | 9.25 |

Table 22 Descriptive statistics of independent, dependent and control variables

#### Table 41 Bivariate analysis: correlations amongst all variables

| Variables                | 1     | 2     | 3     | 4     | 5     | 6     | 7    | 8    | 9    |
|--------------------------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1 Subjective poverty     |       |       |       |       |       |       |      |      |      |
| 2 Sport participation    | .08** |       |       |       |       |       |      |      |      |
| 3 Well-being             | .21** | .12** |       |       |       |       |      |      |      |
| 4 Social exclusion       | .13** | .06** | .20** |       |       |       |      |      |      |
| 5 Objective health (BMI) | 06**  | 06**  | 01    | .01   |       |       |      |      |      |
| 6 Perceived health       | .11** | .18** | .24** | .08** | 12**  |       |      |      |      |
| 7 Emotional health       | .22** | .11** | .45** | .31** | 01    | .24** |      |      |      |
| 8 Age                    | 06**  | 07**  | 05**  | .02   | .16** | 02    | .01  |      |      |
| 9 Income                 | .04   | .01** | .01** | .01   | 02    | .01   | .05* | .03  |      |
| 10 Education             | .12** | .14** | 03    | .05** | 12**  | 01    | 04*  | 24** | 09** |

Note: \*\* *p* < 0.01; \* *p* < 0.05.