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Immigrant life satisfaction in the Netherlands: the roles of volunteering and age

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Abstract

Previous research shows that immigrants are less satisfied with their lives than natives. It also indicates that volunteers are more satisfied than non-volunteers. Nonetheless, in the last decade, very few studies have examined whether volunteering increases the life satisfaction of immigrants in the Netherlands. This research paper aims to address this gap. The relationship between volunteering and life satisfaction is studied using wave 2 of the LISS Core Study module Social Integration and Leisure. As part of this study in 2014 the Immigrant Panel filled in an online questionnaire. Included are 588 first- and second-generation immigrants above the age of 16, who reside in the Netherlands. In this research life satisfaction was analysed and in particular to what extent it is influenced by volunteer work. It also explores whether this relationship differs according to the age of the immigrant. Using linear regression, findings show that the effect of volunteering on life satisfaction is minor among immigrants. There are also no significant life satisfaction differences between volunteers at various ages. While unsignificant, it was revealed that older immigrants who volunteer became more satisfied with their lives while young and middle-aged immigrants become less satisfied with their lives. The results suggest that life satisfaction may be more influenced by other factors such as health, age, and social contacts. It is recommended that in future research the various challenges faced by immigrants are taken into account, as this affects their ability to benefit from volunteer work and increase their life satisfaction.

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1. Introduction

The well-being of immigrants remains an important topic in today's society as the migration rate continues to grow rapidly. Moving for a variety of reasons such as war, work, studying, or family, immigrants are all seeking a happier life (Kushnirovich & Sherman, 2017). In 2001, 133,404 immigrants moved to the Netherlands, this grew to 182,949 in 2014 and by 2021 this number had grown to 250,792 (CBS, 2022b). Consequently, first- and second-generation immigrants currently make up 25,5% of the Dutch population (CBS, 2022a). First-generation immigrants "are born abroad and have at least one parent who is also born abroad" while second-generation immigrants are "born in the Netherlands but have at least one parent who belongs to the first generation" (Alders, 2001, p.2). The immigrants who come from all over the world have a wide variety of backgrounds in education, culture, and language as well as socio-economic status (OECD, n.d.).

As the immigrant population grows in the Netherlands, research on their happiness has also grown. In the World Happiness Report of 2018, researchers found that immigrants evaluated their quality of life as 9% better after having migrated (Helliwel, Layard & Sachs, 2018). Earlier studies indicate immigrants' happiness can be influenced by individual factors such as age or country factors such as government policies, for example (Chu, Shen & Yang, 2018). Immigrants face a wide range of challenges including education, social integration, language barriers, and finding employment which can negatively affect their happiness (OECD, n.d.). Throughout history, it has been argued that the origin of happiness can be found in helping others. Aristotle argued that "true happiness is to be found in the expression of virtue" (Meier & Stutzer, 2008, p.39). Thus, as volunteering by nature means helping others, people can not only contribute to the happiness of others but also to their own. Hence, it is relevant to investigate whether volunteering can truly result in an increase of happiness, and therefore, life satisfaction of immigrants.

In the debate on the life satisfaction of immigrants and volunteering, the focus lies mainly on the type of volunteer work or the comparison of volunteers with non-volunteers. The amount of time spent volunteering or working at multiple organisations is less well researched. Therefore, it is often

not taken into account just how much volunteer work is performed. Certain types of volunteer work are considered to have a more positive impact on the person (Arends & Schmeets, 2020). For example, at their sports club or church. Regardless of the type of volunteer work, volunteering outweighs not volunteering for a person's happiness. In a study by the CBS, they found that 91% of volunteers were happy compared with non-volunteers of which 85% were happy. A similar result was found for life satisfaction, 87,8% of volunteers were satisfied versus 82,2% of non-volunteers (Arends & Schmeets, 2020). As working at one organisation leads to an increase in life satisfaction, it is possible that working more or at multiple organisations could lead to a further increase. Nonetheless, it is not indicated if this effect holds for immigrants.

It is also unclear just how much effect the age of the immigrant influences their life satisfaction following volunteer work. Studies show that the age of the person is indicative of their position in life and social roles and therefore, their ability to benefit from volunteering (Tabassum, Mohan & Smith, 2016). Young people have a wide range of commitments but also still need to establish themselves in the workforce. Middle-aged people have commitments such as families and jobs (Tabassum et al., 2016). Therefore, volunteering could on the one hand increase happiness but on the other hand also create stress among young and middle-aged people. Meanwhile, older people are more likely to be in the stage of life where they are withdrawing from work and social roles and are therefore, more prone to become isolated and unhappy. Research shows that by volunteering older people can compensate for the lack of other life roles (Tabassum et al., 2016). However, again, this effect of the age of the volunteers on life satisfaction does not account for immigrants.

In this study, the focus is on immigrants who are living in the Netherlands. Most studies on immigrants and life satisfaction or volunteering and life satisfaction have been done in the US or other European countries. Often the studies compare natives and immigrants or immigrants in various countries. As the proportion of immigrants in the Netherlands is quite high, as is the demand for volunteer work, the aim of this research is to provide new insight on how volunteering at different ages can affect the life satisfaction of immigrants in the Netherlands. The main research

question is: *"To what extent is volunteering related to the life satisfaction of immigrants in the Netherlands and is this relation moderated by age?"* I shall aim to add to previous studies by examining the factors of volunteering and age together on life satisfaction in model based on immigrants' data. In this research data is used from the LISS Immigrant Panel from 2014, consisting of immigrants aged 16 years and up in the Netherlands.

2. Theoretical framework

2.1. The effect of volunteering on life satisfaction

The life satisfaction of immigrants can be influenced by the benefits gained from volunteering. In evaluating their life satisfaction, people often look at their emotional well-being, which is "the emotional quality of an individual's everyday experience, the frequency and intensity of experiences of joy, stress, sadness, anger and affection that make one's life pleasant or unpleasant" (Arpino & De Valk, 2017, p.4). They also evaluate through their life cognition, which are "the thoughts that people have about their life when they think about it" (Arpino & De Valk, 2017, p.4). It is not about a moment in time but a subjective evaluation of their well-being and happiness over time. Immigrant's life satisfaction is highly influenced by the challenges they face as a result of being an immigrant. Their life satisfaction tends to be lower than natives because according to the need-gratification theory, their needs are met less (De Vroome & Hooghe, 2013). This theory outlines those needs as physiological, safety, love, belonging, esteem and personal growth. Immigrants in are often unable to meet these needs because they do not have the economic, social and community resources required. Migrants struggle to find a job, build up a social network and compare themselves to others to negative effect (De Vroome & Hooghe, 2013). There are also several factors which have a positive influence on how satisfied an immigrant is. Meier and Stutzer (2008) argue that volunteering is one of the factors that increases a person's well-being. Volunteering refers to: "different types of helping behaviors that people undertake of their free will and without being paid to people outside of their household" (Hansen et al., 2018, p.1). People who volunteer and have a migrant background are referred to as immigrant volunteers (Handy & Greenspan, 2009).

The positive effect of volunteering on life satisfaction can be categorised into two main categories. Menchik and Weisbrod (1987) refer to these two categories as intrinsic motivation and extrinsic reward. Intrinsic motivation stems from the satisfaction gained by helping others (Meier & Stutzer, 2008). This can be further separated into three subcategories. First, the person cares about

improving the life of the person they are helping (Meier & Stutzer, 2008). They gain satisfaction from seeing a person be better off as a result of their help. Second, volunteers enjoy performing certain tasks and feeling competent as a result of performing said tasks well. Volunteering can provide an opportunity to do these tasks. Third, certain volunteers enjoy contributing to the greater good, regardless of the outcome (Meier & Stutzer, 2008). Supported by the warm glow theory, through volunteering people gain a good feeling just from doing good for society (Andreoni, 1990). Helping others can give people a sense of meaning and purpose as well as increase their sense of self-worth (Hansen et al., 2018).

Contrary to intrinsic motivations, extrinsic rewards gained from volunteering are about investment and expected benefits (Meier & Stutzer, 2008). This can be separated into two subcategories. First, through volunteering the volunteer can increase their human capital where they grow or maintain their employment skills (Meier & Stutzer, 2008). Aside from learning and practicing skills, volunteering also looks good on a resume. When a person's human capital has depreciated because of job loss, illness or having a child, volunteering can aid in re-entering the work force (Meier & Stutzer, 2008). By increasing their human capital, the volunteer becomes more attractive on the labour market (Menchik & Weisbrod, 1987). Second, volunteering provides an opportunity to increase social capital and gain a wider social network (Meier & Stutzer, 2008; Handy & Greenspan, 2009). Putnam (2000) argued that volunteering allows for chances for an increase in bridges and bonds to the community. As first-generation immigrants' friends and family have been left behind, it is especially important for them to find new social contacts on which they can rely for social support (Arpino & De Valk, 2017; De Vroome & Hooghe, 2013). Immigrants' ability to make social connections is often hindered by language and cultural barriers as well as discrimination (Handy & Greenspan, 2009; De Vroome & Hooghe, 2013). Therefore, immigrants are much more likely to lack social support and experience loneliness which decreases life satisfaction (De Vroome & Hooghe, 2013). Through volunteering, immigrants can meet new people and become part of a network, an essential step to integration and increasing their life satisfaction. Finally, for immigrants there is another

extrinsic reward to volunteering that does not apply to natives, namely cultural capital (Handy & Greenspan, 2009). Immigrants (of the first-generation) have to adjust to the culture in their new country. By performing volunteering work, they come into contact with the native population through which they can learn about their new environment. The ability to understand the culture and social norms of their country of residence is vital to dealing with the stress of being in a new society (Handy & Greenspan, 2009).

Many volunteers are motivated by a combination of intrinsic and extrinsic factors (Meier & Stutzer, 2008). Extrinsically motivated people seek out rewards and obtain satisfaction from possessions (Tatzel, 2002). Intrinsic people, however, view "personal growth, relationships and community spirit as important sources of well-being" (Meier & Stutzer, 2008, p.53). These motivations are not contradictory, it is possible that volunteers enjoy helping others but also the ability to improve their skills. Therefore, it can be hard to separate the motives. Meier and Stutzer (2008) argue that it is difficult to isolate which type of motivation is the most beneficial. Kasser and Ryan (2001), however, did find that those whom are more intrinsically motivated have a higher increase in life satisfaction than those who are primarily extrinsically motivated.

Despite the benefits, volunteers are also faced with several other considerations. By volunteering they are expected to give up a portion of their time without payment. This is time that could be spent with family, working or leisure activities (Hansen et al., 2018; Meier & Stutzer, 2008; Tassembaum et al., 2018). In addition, it also requires physical effort (Meier & Stutzer, 2008). Stuart et al. (2020) argue that when a person spends too much time and effort on volunteering, this can cause a person to become stressed and anxious. However, he also indicates that more volunteering does in general lead to an increase in life satisfaction. Through volunteer work people are not only able to grow personally but also gain confidence in themselves and their skills (Stuart et al., 2020). Volunteering helps to improve their mental health, lower depression and anxiety and hence, their life satisfaction (Hansen et al., 2018).

As a result, the following hypothesis was formulated:

H1: "The more volunteering work immigrants perform, the greater the positive effect on life satisfaction."

2.2. The influence of age

The life satisfaction of immigrants increases when they volunteer, however, the degree of satisfaction is influenced by how old the immigrant is. Earlier research shows that older immigrants are more likely to be influenced by volunteering with regard to their life satisfaction than younger immigrants (Stuart et al., 2020).

During the life course the benefits of volunteering are experienced in different ways. Tabassum et al. (2016) suggest that the positive impact of volunteering on mental wellbeing begins to significantly rise around middle-age (40~) and continues into old age. Arends and Schmeets (2020) found that in the Netherlands between 2013 and 2018 most volunteers fell into the age bracket of 35 to 55 years. Tabassum et al. (2016) attributes the large group of middle-aged volunteers to their family and social roles which promote volunteering. Especially parents are motivated to get involved with their children's school and extracurricular activities (Tabassum et al., 2016). This would suggest they gain intrinsic and extrinsic benefits, as through volunteering they are able to help their children but also gain access to the school network and maintain their skills.

Research shows that older volunteers experience the most benefits from volunteering, also likely due to the large intrinsic and extrinsic benefits. Older volunteers (60+) are much less likely to have to deal with the stress of having to balance work and volunteering obligations (Hansen et al., 2018). As people get older, they withdraw from other roles of their life. Therefore, they have more free time to fill with other activities (Hansen et al., 2018). However, they often also face physical and mental inactivity (Van Willigen, 2000). It is through volunteering that they attempt to find meaning and purpose for their lives again (Hansen et al., 2018). Older people are nonetheless motivated by extrinsic factors, specifically social capital. Having socially withdrawn, by volunteering they are able

to meet new people so they can regain a sense of belonging (Stuart et al., 2020). Another US study reiterates that 60+ year old's gain more satisfaction and mental health benefits from volunteering than middle-aged people (Van Willigen, 2000). Nonetheless, people above 75 are least likely to volunteer (Arends & Schmeets, 2020). This is likely due to the limiting factors such as health brought on by old age.

Younger people are more likely to be solely motivated by the extrinsic rewards and consequently, they are likely to gain less satisfaction from volunteering. After the 75+ year old's, people between 25 and 35 are least likely to volunteer (Arends & Schmeets, 2020). Young people often have wide array of things going on in their lives, and therefore, volunteering is perceived as another obligatory task which adds to their stress (Tabassum et al., 2016). However, alternative studies indicate that young people do, to a certain extent gain satisfaction from volunteering. Lawton et al. (2020) found that younger people gain benefits through an increase of human and social capital. By volunteering they increase their skills, employability, and social connections. This results in an increase in life satisfaction, however, to a lesser degree than intrinsic motivations would.

As a result of the theoretical analysis the following hypothesis was formulated:

H2: "The positive effect of volunteering on the life satisfaction of immigrants is stronger for older immigrants than younger immigrants."

2.3. Control variables

The life satisfaction of immigrants is not only influenced by volunteering but also by several other factors. First, gender impacts life satisfaction. When looking at natives, men have a higher level of life satisfaction than females (Knight & Gunatilaka, 2010). However, male immigrants are less satisfied with their life than female immigrants (Chu, Shen & Yang, 2018). Second, the health of the immigrant highly influences their satisfaction with their life. Having better health is paired with higher satisfaction (Chu, Shen & Yang, 2018; Knight & Gunatilaka, 2010). Third, the number of social contacts a person has influences how connected they feel to others. This in turn affects how satisfied

they are with their lives (Arpino & De Valk, 2017). Having friends to talk to is an important protective factor for life satisfaction. First-generation immigrants specifically have to rebuild their social network and therefore, are likely to feel less embedded in a social network. Second-generation immigrants struggle with socially embedding due to potentially conflicting family and peers (Arpino & De Valk, 2017). Finally, a person's occupation is highly influential on their life. Immigrants are more likely to be unemployed (Arpino & De Valk, 2017). For immigrants, employment is especially important as a job is necessary for an income but also to integrate themselves into society. Hence, unemployed immigrants are less satisfied with their lives (Bartram, 2011).

The various factors that influence the life satisfaction of immigrants are displayed in a research model:

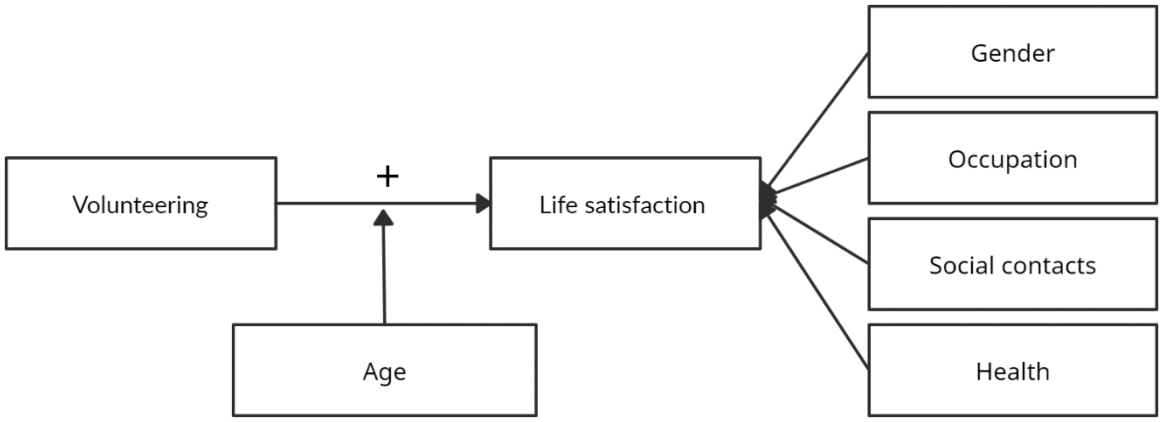

Figure 1. Research model

3. Methodology

3.1. Data

The dataset used in this research paper is that of the LISS Core Study module Social Integration and Leisure. This is a longitudinal study consisting of online questionnaires which was administered to the Immigrant panel twice, first in 2010 and later in 2014. The Immigrant panel includes people with a Dutch and with an immigrant background who are at least 16 years old and registered in the Netherlands (Centerdata, n.d.-b). The research sample was collected by Statistics Netherlands through stratification from the population register. It was stratified by ethnic groups and weighted by household size. Included are first- and second-generation immigrants from non-Western immigrant groups and Western immigrant groups as well as Dutch people (Centerdata, n.d.-b). This was done to ensure that the research sample best represents the population being studied. The Immigrant panel consisted of around 1,600 households making up around 2,400 individuals of which 1,100 households with 1,700 individuals have a migrant background (Centerdata, n.d.-a).

In the dataset is included data from wave 2 in 2014 and background variables for the Immigrant panel. Wave 2 of the questionnaire on social integration and leisure was given to 1748 panel members, of which 1270 panel members responded (Centerdata, 2014). This makes the non-response rate 27.3%, this is quite high possibly due to the large number of questions to be answered which was 469. In the dataset the research sample has 2,227 total respondents, an increase due to the inclusion of the background variables of all Immigrant panel members. This decreases the non-response rate to roughly 7% which is low. There were 675 Dutch and 1,483 total immigrant responses. Several items had a very high non-response including social contacts (45.4%), health (40.1%), life satisfaction (46.9%), and volunteering (42.5%). Social contacts, health and life satisfaction each required an evaluation of their feelings on the personal topics which could have made the questions more difficult to answer. Volunteering was made up of 12 items which were also part of more extensive questions on work and therefore, might have been intimidating or too many

to answer. For the present analysis, the sample has been reduced to immigrants who answered all questions as the focus of this research lies with their experiences. Thus, due to the non-response and immigrant restriction there are now 588 respondents.

3.2. Research design

The recruitment procedure for the Immigrant panel began in 2010 (Centerdata, n.d.-b). Selected persons were asked to participate in a letter which included information on the study and an incentive of 10 euros (Scherpenzeel, 2009). This was later followed up with a phone call or a visit to the home in which the persons were asked to participate in a 10-minute recruitment interview to gather information about their background and accessibility to the internet and a computer. As the questionnaires were in Dutch any households in which the language ability was not sufficient were excluded. Within 2 weeks respondents were given further information on how to login and asked to officially consent to participation in the panel (Scherpenzeel, 2009). The aim was to have different origin groups represented in the panel, and therefore, recruitment efforts of those who were underrepresented post-recruitment interview, but pre-panel registration were intensified (Centerdata, n.d.-b). Recruitment interviewers returned to the households and aided respondents in registering. Finally, to reach households who had not registered for the panel a letter was sent outlining that in addition to the 10-euro gift for participation an iPod would be raffled among new members. This incentive was in addition to the 15 euros per hour they would receive for filling in the questionnaires. Respondents could fill out the questionnaires online and were provided with internet or computers if they did not have access to them themselves (Centerdata, n.d.-b).

The initial questionnaire, filled in by the contact person of the household, consisted of the general characteristics of all participating members of their household (Elshout, 2012). This was filled in upon registering for the panel. This online questionnaire included questions about age, their household situation, occupation, education, subjective evaluations of their health and life, as well as religion (Elshout, 2012).

The data collection for wave 2 took place in 2014 in the Netherlands by asking 1748 members of the Immigrant panel to fill out an internet questionnaire (Centerdata, n.d.-b). In the second wave there were a total of 469 questions asked about topics including leisure time, their networks and work life (Centerdata, 2014). The average amount of time taken to fill out the questionnaire was 10700.39 seconds which equals nearly 3 hours.

3.3. Operationalisation

The dataset was filtered using the variable "herkomstgroep" to ensure that only immigrants were left in the dataset. Therefore, any respondents who answered that they had a Dutch background were removed from the dataset, leaving only first- and second-generation immigrants.

The dependent variable that is tested is *life satisfaction*. The variable is measured through two questions. The first question is "how satisfied are you with the life you lead at the moment?" and could be answered on the scale of 0 to 10 where 0=not at all satisfied and 10=completely satisfied. The second question used to measure life satisfaction is "on the whole, how happy would you say you are?" This could also be answered on the scale of 0 to 10 where 0=totally unhappy and 10=totally happy. Any answers of I don't know for both questions were recoded to system missing. The item scores are added up and the average is taken to create a new scale where 0=completely unsatisfied and 10=completely satisfied (Cronbach's alpha=0.909). This variable is continuous.

The categorical variable *occupation* is measured by asking respondents about their primary occupation. The answer options were: (1) paid employment; (2) works or assists in family business; (3) autonomous professional, freelancer, or self-employed; (4) job seeker following job loss; (5) first-time job seeker; (6) exempted from job seeking following job loss; (7) attends school or is studying; (8) takes care of housekeeping; (9) is a pensioner ([voluntary] early retirement, old age pension scheme); (10) has (partial) work disability; (11) performs unpaid work while retaining unemployment benefit; (12) performs voluntary work; (13) does something else; and (14) is too young to have an

occupation. The variable is recoded to reduce the number of categories to 5. Answer options 1, 2 and 3 together represent paid employment, shown by score 0. Options 4, 5 ,6, 8, 9, 10 and 14 are given score 1 which indicates unemployed. Option 7 becomes 2 which indicates studying. Options 11 and 12 indicate voluntary work and is given the score 3. Finally, option 13 is given the score 4 which represents other. The variable *gender* is already a dummy variable, however, was recoded to where male has the score 0 instead of 1 and female scores 1 instead of 2.

There are several other continuous variables namely, volunteering, age, health and social contacts. *Age* was measured by asking for the age of the household member. Health is measured through the question: "how would you describe your health, generally speaking?" Respondents could answer with (1) poor; (2) moderate; (3) good; (4) very good; and (5) excellent. While this variable would normally be considered ordinal because there are sufficient categories with similar distance it can be considered continuous. The variable *social contacts* is measured through the question: "how satisfied are you with your social contacts?" This could be answered on a scale of 0 to 10, where 0=completely unsatisfied and 10=completely satisfied. Again, answers of I don't know have been recoded to system missing. The variable *volunteering* is measured by asking respondents to indicate for each organisation listed, what applies to them in this moment or over the past 12 months through, specifically if they have performed voluntary work at the organisations. There are twelve organisation categories, some of these items are: (1) a sports club or club for outdoor activities; (2) a cultural association or hobby club; (3) a business, professional or agrarian organization; (8) a religious or church organization; (9) a political party. The other items can be found in appendix 1. Respondents could answer with 0=no and 1=yes. The new variable is recoded by adding the 12 items together and creating a new scale from 0 to 12 where 0 indicates that they have performed no voluntary work and 12 indicates performed voluntary work at all organisations (Cronbach's alpha=0.608).

To measure the moderation effect an interaction is created from the variables volunteering and age. However, first both volunteering and age were centralised to remove the multicollinearity between the two original variables. Volunteering is centralised by taking the variable minus it's

average: 0.3231, and age by taking the variable minus it's average: 48.98. Finally, both centralised variables are taken to create the interaction.

3.4. Analysis plan

To answer the research question and test the hypotheses an analysis plan was created. The primary analysis consists of a linear regression analysis where the dependent variable life satisfaction is predicted from the independent variable volunteering and moderation age. Using a hierarchal analysis, the final model is established. The first model consists of the dependent variable and the independent variable volunteering. In the second model the control variables: gender, occupation, social contacts, and health are added. Based in theoretical analysis, these variables are controlled for their influence on life satisfaction and volunteering using the first and second models. In the third model the moderation age is added. The fourth and final model consists of the dependent variable, the control variables, the independent variable, moderation and the interaction: volunteering and age. It is with this model that the two hypotheses are tested, and a conclusion can be drawn on the influences of volunteering and age.

4. Results

4.1. Descriptive statistics

4.1.1. Univariate analysis

The descriptive statistics of the variables are displayed in table 1. The dependent variable life satisfaction has an average of 7.12 with a standard deviation of 1.58, which is quite large on a scale from 0 to 10. This means that respondents are quite satisfied with their lives. Only 6.6% of respondents indicated that they judged their lives to be less than satisfactory by scoring themselves with a 5 or lower. The independent variable volunteering has a very low average of 0.39 with a small standard deviation of 0.92. This is especially small on a scale of 0 to 12. Respondents, therefore, most often have not performed any volunteering work. Only 23.3% respondents indicated having performed volunteer work.

Table 1: Descriptives of the variables in the analysis: average (standard deviation), minimum and maximum values, and total number of respondents.

Variable	Average (standard deviation) or frequency	Minimum	Maximum	*N* total
Life satisfaction (scale 2 items)	7.13 (1.58)	0	10	588
Volunteering (scale 12 items)	0.39 (0.92)	0	10	588
Age	49.00 (16.57)	16	88	588
Gender (0=male; 1=female)	45.9% male 54.1% female	0	1	588
Occupation	50.5% employed 36.4% unemployed 9.2% studying 2.6% volunteering 1.4% other	0	4	588
Social contacts	6.90 (1.85)	0	10	588
Health	3.06 (0.86)	1	5	588

As indicated in table 1, the moderator age has quite a high average of 50 and standard deviation of 16.57. Most of the respondents are therefore middle aged. The smallest group of respondents are the youngest, as only 21.8% are between 16 and 35, 39% are middle aged between 36 and 55, and 39.9% respondents are between 56 and 88 falling into the older adult category. In the research sample there are more females than males. 54.1% of respondents are females and 45.9% of respondents are male. As seen in table 1, the occupation status of most respondents is employed (50.5%). A second large group of 36.4% is unemployed and the smallest group does something other than working, studying or volunteering (1.4%). The variable social contacts has a high average of 6.9 with a high standard deviation of 1.85. Most respondents are satisfied with the social contacts that they have. Finally, most respondents indicate that they feel that their health is good. Only a small group of 3% feel that they have poor health and only 6% feel that their health is excellent. The full descriptive statistics are displayed in the appendix 2.1.

4.1.2. Bivariate analysis

The associations between the variables are shown in table 2. The strongest and most significant relationship with life satisfaction was found with social contacts (r=0.484; p<0.001). This means that as people are more satisfied with their social contacts, they are also more satisfied with their lives. Life satisfaction is also significantly and positively correlated to health (r=0.331; p<0.001). When people judge their health to be better, they are more likely to be satisfied with their lives. In addition, the relationships between life satisfaction and volunteering (r=0.024; p=0.588), and life satisfaction and age are (r=0.074; p=0.073) weak and insignificant. Therefore, performing more volunteering work or older age does not mean that people are more satisfied with their lives.

As seen in table 2, between age and health there is also a significant negative but not very strong relationship (r=-0.178; p<0.001). This means that as people get older their health worsens. Health is also related to social contacts (r=0.203; p<0.001). People who have better health are also more satisfied with their social contacts. There is also a weak significant relationship between gender

and age (*r*=-0.095; *p*=0.022). This indicates that males in this dataset are older than the females (*t*(586)=2.303; *p*=0.022). The full correlations and relationship explanations can be found in appendix 2.2.

Table 2: Association between variables in the analysis: life satisfaction, volunteering, age, gender, occupation, social contacts and health (n=588)

	1.	2.	3.	4.	5.	6.	7.
1.Life satisfaction	1	-	-	-	-	-	-
2. Volunteering	0.024	1	-	-	-	-	-
3. Age	0.074	0.036	1	-	-	-	-
4. Gender (0=male; 1=female)	-0.037	0.008	-0.095*	1	-	-	-
5. Occupation	0.084	0.148*	0.694**	0.093^{C}	1	-	-
6. Social contacts	0.484**	0.047	0.077	0.065	0.078	1	-
7. Health	0.331**	-0.002	-0.178**	-0.063	0.279**	0.203**	1

…^{C} = Cramer's V
* significant at p<0.05, ** significant at p<0.01 (two-sided)

4.2. Model evaluation and assumption control

The fit of the model is tested using the adjusted R^2, R^2-change, and the F-change. In table 3 it is shown that the R_a^2 of model 4 is 29.4% which is quite high. This means that 29.4% of the variance in life satisfaction can be explained by the independent variables in the model, indicating that the model has quite a good fit. The R^2-change indicates that only in model 2 the R^2 gets better at explaining the variance (R^2-change=0.294). The fit of the model does not get better when the moderator and interaction are included. Finally, the F-change shows that from model 1 to 2 the F-change score increases which means that adding the control variables to the model is a significant improvement (*F*(4,582)=60.761; *p*<0.001). Thus, the fourth model provides little extra information. The more extensive analysis van be found in appendix 2.5.

In addition, the VIF scores are examined for multicollinearity. A high multicollinearity score indicates that there is overlap between the independent variables. As indicated in table 3, all the VIF scores in the final model are below 4 meaning that multicollinearity is not a problem in the model.

Moreover, the final model has also been tested using 4 assumptions. Following the assumption control it was revealed that all assumptions have been violated. The first assumption assumes that all cases are independent. The Immigrant panel includes households which means that some of the respondents will be related to each other, thus, this assumption has been violated. The second assumption on linearity between the dependent variable and the independent variables has also been violated as the residuals are not distributed normally around the mean line. The third assumption of homoscedasticity states that for every value of the independent variables, the dependent variable has the same conditional standard deviation. However, the spread gets smaller as the residual becomes positive, and larger in the middle where most points can be found. This means that assumption three has also violated. The fourth assumption is that the conditional spread of y is normal. As there are substantial deviations in the data this means that this assumption has also been violated. Therefore, any conclusions drawn from the data might be inaccurate.

To control if the fit of the model could be improved, several analyses were performed to identify outliers or influential points. Having identified a pattern of 27 highly influential studentized residuals, above 2 or below -2, an analysis was performed after removing them to look into how these residuals influence the conclusions drawn and how big their effect was. The variance that can be explained in the final model increases by 3.3% (R_a^2=32.7%) but there were no significant changes in the slopes. While assumption four is now met, as three assumptions are still violated, there has not been any just cause found for removing these residuals.

An additional analysis was performed by removing 22 respondents who systematically deviated in several of the outlier analyses. Removing these cases results in occupation (*b*=-0.146, *p*=0.020) and the interaction becoming significant at α<0.05 (*b*=0.015; *p*=0.014). In addition, age is now also significant at α<0.01 (*b*=0.011; *p*<0.001). Thus, removing the outliers means that these

variables now fit better with the data (R_a^2= 31.8%). The final model is also an improvement on the previous model (F(1,559)=6.061; p=0.014; α<0.05). Nonetheless, there was no just cause to remove the outliers. The full assumption and outlier control can be found in appendix 3.

4.3. Multivariate analysis

The four models shown in table 3 are used to examine the hypotheses. The final model reveals that immigrants who volunteer more, consider themselves to be unsatisfied with their life. However, this effect is extremely small and not significant (b=-0.002; p=0.974). Thus, no support has been found for the first hypothesis: it cannot be said that volunteering more leads to an increase in life satisfaction in immigrants.

The effect of volunteering on life satisfaction weakens when controlling for gender, occupation, social contacts and health (model 1: b=0.041; p=0.558 and model 2: b=0.009; p=0.874). This is likely because social contacts and health have a strong effect on the life satisfaction of immigrants (social contacts: b=0.376; p<0.001 and health: b=0.426; p<0.001). Feelings of satisfaction with their social contacts and/or their health, therefore, means that immigrants are also more satisfied with their lives.

In model 3 the relationship between moderator age and life satisfaction is tested. By adding age the effect of the other variables on life satisfaction became stronger or weaker, and in some cases less significant. This indicates that the model becomes worse upon adding age. This is possibly due to age being strongly correlated to occupation, gender and health as seen in table 2. Age also has a small significant effect on the life satisfaction of immigrants (b=0.008; p=0.022). Older immigrants are more satisfied with their lives.

The moderation effect of age on volunteering and life satisfaction is examined in the final model. When tested, the interaction is positive but not significant (b=0.005; p=0.277). This means that for older immigrants the effect of volunteering on life satisfaction is stronger than for younger immigrants but not significantly. Through the examination of high, middle and low scores on age, it is

revealed that different ages cause a change in the effect of volunteering on their life satisfaction. At a young age volunteering has a negative effect on life satisfaction, this effect gets smaller as the immigrant gets older until eventually performing more volunteer work leads to an increase in life satisfaction. The full analysis can be found in appendix 2.6. Nonetheless, the interaction remains not significant and thus, there is no support for hypothesis two that older immigrants get more life satisfaction from volunteering.

Table 3: results of linear regression analysis with life satisfaction as the dependent variable, volunteering as independent and age as moderation variable.

	Model 1		**Model 2**		**Model 3**		**Model 4**		
	B (SE)	P	B (SE)	P	B (SE)	P	B (SE)	P	VIF
Intercept	7. 129** (.065)	<.001	3.359** (.277)	<.001	3.298** (.278)	<.001	3.307** (.278)	<.001	
Volunteering (centred)	.041 (.071)	.558	.009 (.060)	.874	.005 (.060)	.934	-.002 (.060)	.975	1.015
Gender (0=male; 1=female)			-.151 (.111)	.175	-.122 (.111)	.272	-.119 (.111)	.288	1.030
Occupation			-.072 (.066)	.276	-.062 (.066)	.345	-.071 (.066)	.288	1.060
Social contacts			.376** (.030)	<.001	.367** (.031)	<.001	.365** (.031)	<.001	1.081
Health			.426** (.067)	<.001	.459** (.068)	<.001	.462** (.068)	<.001	1.136
Age (centred)					.008* (.003)	.025	.008* (.003)	.018	1.090
Volunteering * age							.005 (.005)	.277	1.051
R_a^2	-.001		.289		.294		.294		
$R^2 change$	.001		.294		.006		.001		
$F - change$	.343	.558	60.761**	<.001	5.024*	.025	1.186	.277	
N	588		588		588		588		

*significant at α<0.05; **significant at α<0.01

5. Conclusion and Discussion

The life satisfaction of immigrants can be influenced in many ways and it has long been argued that through helping others, a person can increase their own happiness (Meier & Stutzer, 2008). As the immigrant flow to the Netherlands continues to increase every year, immigrants (first- and second-generation) now make up a quarter of the Dutch population. Consequently, their life satisfaction is not only important to them but also to the functioning of Dutch society. However, immigrants needs are often not met due to the challenge of creating a life in the Netherlands (OECD, n.d.). It is through volunteering that immigrants can gain access to some of the economic and social resources they need to lead a more satisfied life. In this research the aim was to answer the question: *"To what extent is volunteering related to the life satisfaction of immigrants in the Netherlands and is this relation moderated by age?"* This question was answered using the results from the quantitative research into life satisfaction of immigrants and the combined effect of volunteer work and age.

It was expected that due to the many intrinsic and extrinsic benefits of performing volunteer work that performing any or multiple volunteering activities would lead to a more satisfied life. This led to us to hypothesise that performing more volunteer work would lead to greater life satisfaction for immigrants. However, upon examination of the results, no evidence was found to support that immigrants who are performing more volunteer work are more satisfied with their lives. Immigrants' perception of their lives were more influenced by their health, satisfaction with social contacts and age.

Furthermore, earlier research indicates that at all ages performing volunteer work could lead to a higher life satisfaction. It also suggests that for the younger age groups the effect would be to a lesser degree due to other commitments. Therefore, it was also hypothesised that the positive effect of volunteering on life satisfaction would hold the strongest for older immigrants. The results indicate that older volunteers were the only age group to positively benefit from volunteering. Younger immigrants became less satisfied with their lives as they performed more volunteer work, as

did middle-aged immigrants, however, slightly less. Nevertheless, the change in life satisfaction is miniscule, meaning that any possible changes due to volunteering and age were not significant.

As there was no support found for either of the hypotheses, there are likely other causes for an increase in life satisfaction among immigrants. There are, however, several methodological limitations to this conclusion. This research was performed by looking at whether volunteer work influences life satisfaction. One could also argue that people who are more satisfied with their life are more likely to volunteer. This would indicate that there is simultaneous causality or reversed causality. This threatens the internal validity of the research performed. Moreover, the choice was made to measure not whether a respondent performed volunteer work or not, but the amount of volunteer work performed. This was done by looking at the number of organisations that people worked at in 12 months. It could be a limitation to the research as the amount of volunteer work could be better measured through the number of hours spent volunteering or the frequency that they attend their volunteer work.

The ability to generalise the results to the general population is based on the trustworthiness of the research performed. The explained variance of life satisfaction is quite high at 29.4%, meaning that the final model was a good fit to the data. However, it is important to note that the non-response for volunteering (42.5%), life satisfaction (46.9%), social contacts (45.4%) and health (40.1%) were extremely high. This means that many of the immigrants were unwilling to answer the many questions on whether they performed volunteer work but also more personal questions. In future research the size of the research sample could possibly be increased by reducing the number of questions on volunteer work. As mostly people who did not perform any volunteer work filled in the questionnaire this influences the results as the sample size of volunteers is quite small. Similarly, the questions on life satisfaction, social contacts and health were mostly answered by respondents who indicated feeling positive about the topic. This means that the population is so narrow that it could not be generalised. Furthermore, due to the dependent variable having at least 5 answer options with equal distance, linear regression analysis was chosen. However, the assumption control

showed that the distribution of values were not linear and that the conditional spread was not normal. In addition, the residuals are also not normal. This means that assumptions 2, 3, and 4 have been violated. Assumption 1, that each of the cases is independent, has also been violated as some of the respondents are of the same household. Therefore, the results of the research are not completely trustworthy. Noteworthy is that upon removing the outliers, the fit of the model improves and the interaction becomes significant meaning that should the outliers be removed from the model there would be evidence to support the hypothesis. However, based on the complete final model the result was not significant meaning that the hypotheses were not confirmed. In future research, it would be beneficial to also perform a logistical analysis in addition to the linear analysis to gain as much insight as possible. Nonetheless, this would be limited by the difficulty of reducing life satisfaction to unsatisfied or satisfied, meaning that any nuance is lost.

Hence, it is clear that future research is needed to determine the relationship between volunteering and life satisfaction as well as the effect of age among immigrants in the Netherlands. In contradiction to earlier research which does indicate higher numbers of immigrant volunteers, the Immigrant Panel utilized in this research had a very small group of immigrant volunteers. A result of the inability to generalise to a wider population is that in the future it needs to be examined in a larger research sample. Additionally, it is possible that the inclusion of first- and second-generation skewed the data. First-generation immigrants themselves make the move from one country to another while second-generation immigrants are born in the Netherlands, and therefore, face very different challenges. In the future these could be examined separately or compared. Moreover, there are also several factors which were not included in this research which uniquely affect immigrants such as their country of origin, their culture, and discrimination they might experience which affects their ability to benefit from volunteer work. In future research these factors should be controlled for as it is possible that formal volunteer work is not a part of their culture but rather volunteer work is performed in an informal way through helping family or that discrimination results in immigrant volunteers feeling unwelcome at the place they volunteer. Finally, it is important to note that

previous studies are limited on volunteering and life satisfaction among immigrant populations, especially in the last decade, meaning that the theory is mostly based on whole populations. Due to the various challenges immigrants face it is likely that there will be differences between natives and immigrants. This should be taken into account in future research.

In conclusion, despite earlier indication this research does not support immigrants being more satisfied with their lives when they perform more volunteer work. Moreover, the age of the immigrant volunteer while having some different effects is so minimal that no true conclusion can be drawn on immigrant life satisfaction in the Netherlands.

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#:%7E:text=Bij%20de%20westerse%20migratieachtergrond%20is,leeftijdscategorie%2030%20tot%2040%20jaar

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Appendix

Appendix 1: Operationalisation

For all the descriptive analyses only the complete dataset was used meaning that all respondents had answered all questions.

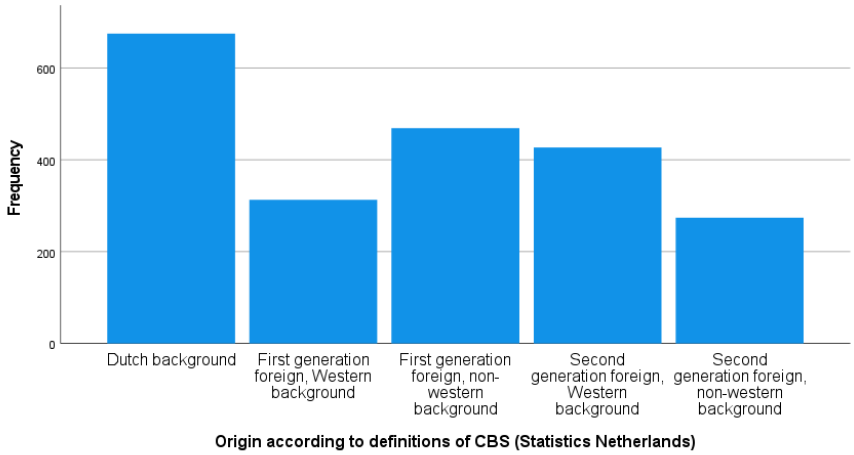
1.1. Filtering dataset for immigrants

The dataset was first filtered using the variable herkomstgroep to ensure that only respondents with a migrant background were included. This variable is measured by looking at the origin according to definitions of CBS (Statistics Netherlands). The variable had the following answer options: (0) Dutch background; (101) First generation, Western background; (102) First generation, non-Western background; (201) Second generation, Western background; (202) Second generation, non-Western background. There were 675 Dutch respondents; 313 First generation, Western background respondents; 469 First generation, non-Western background respondents; and 274 respondents who are Second generation, non-Western background. There were also 69 missing. Any respondents who answered that they had a Dutch background were removed from the dataset. Consequently, 1483 respondents remain in the dataset meaning there were more immigrants than Dutch respondents in the original dataset. Upon removing any respondents who did not answer all questions and to make the complete dataset 588 respondents were left in the dataset of whom all are immigrants.

*Information filter variable before removing missing.
FREQUENCIES VARIABLES=herkomstgroep
 /STATISTICS=RANGE MINIMUM MAXIMUM MEAN MEDIAN
 /BARCHART FREQ
 /ORDER=ANALYSIS.

Origin according to definitions of CBS (Statistics Netherlands)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dutch background	675	30.3	31.3	31.3
	First generation foreign, Western background	313	14.1	14.5	45.8
	First generation foreign, non-western background	469	21.1	21.7	67.5
	Second generation foreign, Western background	427	19.2	19.8	87.3
	Second generation foreign, non-western background	274	12.3	12.7	100.0
	Total	2158	96.9	100.0	
Missing	System	69	3.1		
Total		2227	100.0		



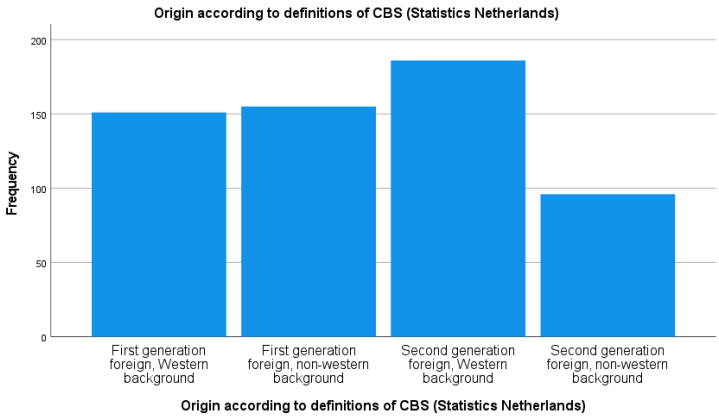

```
*Filter dataset.
USE ALL.
COMPUTE filter_$=(herkomstgroep=101 | herkomstgroep=102 | herkomstgroep=201 |
herkomstgroep=202).
VARIABLE LABELS filter_$ 'herkomstgroep=101 | herkomstgroep=102 | herkomstgroep=201 | '+
    'herkomstgroep=202 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.

FILTER OFF.
USE ALL.
SELECT IF  (NOT(filter_$=0)).
EXECUTE.
```

*After removing Dutch respondents and missing answers.

herkomstgroep Origin according to definitions of CBS (Statistics Netherlands)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	101 First generation foreign, Western background	151	25.7	25.7	25.7
	102 First generation foreign, non-western background	155	26.4	26.4	52.0
	201 Second generation foreign, Western background	186	31.6	31.6	83.7
	202 Second generation foreign, non-western background	96	16.3	16.3	100.0
	Total	588	100.0	100.0	



1.2. Life satisfaction

1.2.1 Original items

The dependent continuous variable that is tested is life satisfaction. The variable is measured through two questions. The first question is “how satisfied are you with the life you lead at the moment?” and could be answered on the scale of 1 to 10 where 0=not at all satisfied and 10=completely satisfied. In the histogram it is evident that the item is skewed to the left with a peak at 7. The mean is 7.21, indicating that most people are quite satisfied with their life. The standard deviation of 1.601 is not very big on the scale of 0 to 10.

The second question used to measure life satisfaction is “on the whole, how happy would you say you are?” This could also be answered on the scale of 0 to 10 where 0=totally unhappy and 10=totally happy. The question is also skewed to the left with two high peaks at 7 and 8. The average is 7.05 with a standard deviation which is again not very big at 1.695. Most people indicate that they are quite happy.

The Cronbach’s alpha for the variables is 0.909 which is very high, this means that the questions can be taken together to create the new variable life satisfaction.

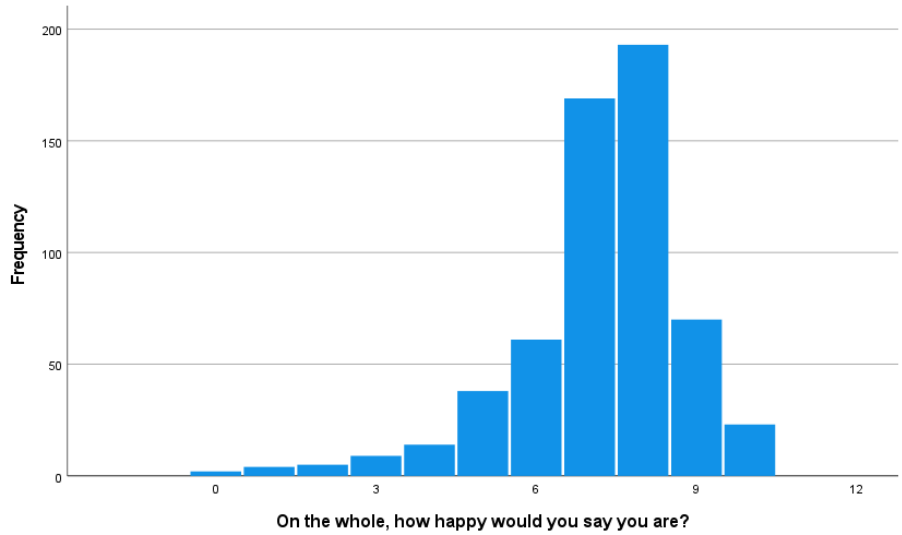
```
*Descriptives items life satisfaction.
FREQUENCIES VARIABLES=ep14b010 ep14b011
 /NTILES=4
 /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS
SEKURT
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

Statistics

		On the whole, how happy would you say you are?	How satisfied are you with the life you lead at the moment?
N	Valid	588	588
	Missing	0	0
Mean		7.21	7.05
Median		7.00	7.00
Std. Deviation		1.601	1.695
Skewness		-1.283	-1.079
Std. Error of Skewness		.101	.101
Kurtosis		2.907	1.989
Std. Error of Kurtosis		.201	.201
Range		10	10
Minimum		0	0
Maximum		10	10
Percentiles	25	7.00	6.00
	50	7.00	7.00
	75	8.00	8.00

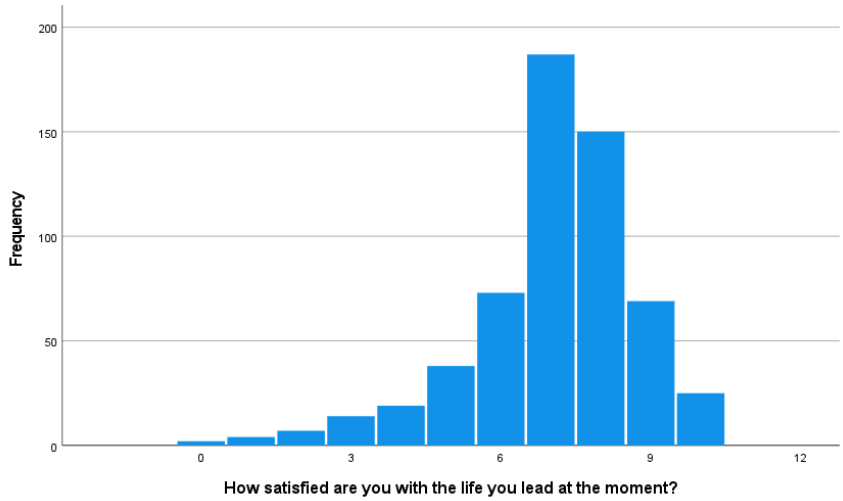
On the whole, how happy would you say you are?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 totally unhappy	2	.3	.3	.3
	1	4	.7	.7	1.0
	2	5	.9	.9	1.9
	3	9	1.5	1.5	3.4
	4	14	2.4	2.4	5.8
	5	38	6.5	6.5	12.2
	6	61	10.4	10.4	22.6
	7	169	28.7	28.7	51.4
	8	193	32.8	32.8	84.2
	9	70	11.9	11.9	96.1
	10 totally happy	23	3.9	3.9	100.0
	Total	588	100.0	100.0	



How satisfied are you with the life you lead at the moment?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 not at all satisfied	2	.3	.3	.3
	1	4	.7	.7	1.0
	2	7	1.2	1.2	2.2
	3	14	2.4	2.4	4.6
	4	19	3.2	3.2	7.8
	5	38	6.5	6.5	14.3
	6	73	12.4	12.4	26.7
	7	187	31.8	31.8	58.5
	8	150	25.5	25.5	84.0
	9	69	11.7	11.7	95.7
	10 completely satisfied	25	4.3	4.3	100.0
	Total	588	100.0	100.0	



*Reliability scale life satisfaction.
RELIABILITY
/VARIABLES=ep14b010 ep14b011
/SCALE('ALL VARIABLES') ALL
/MODEL=ALPHA
/STATISTICS=SCALE CORR COV
/SUMMARY=MEANS VARIANCE COV CORR.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.909	.910	2

1.2.2. Recoding

The item scores are added up and the average is taken to create a new scale where 0=completely unsatisfied and 10=completely satisfied. Answer option: I don't know was recoded to system missing.

*Recoding questions to remove missing.

```
RECODE ep14b010 (999=SYSMIS) (SYSMIS=SYSMIS) (1 thru 10=Copy) INTO M_Happy.
VARIABLE LABELS  M_Happy 'Migrant happy'.
EXECUTE.
RECODE ep14b011 (999=SYSMIS) (SYSMIS=SYSMIS) (1 thru 10=Copy) INTO M_Lifesatisfaction.
VARIABLE LABELS  M_Lifesatisfaction 'Migrant satisfaction with life'.
EXECUTE.

*Recoding life satisfaction.
COMPUTE Life_satisfaction=(M_Happy + M_Lifesatisfaction)/2.
EXECUTE.
```

1.2.3. Final variable

After recoding the variable, it is still left skewed, and little has changed in the descriptives. The average is 7.13 with a standard deviation of 1.579, meaning that on average people are still very satisfied with their lives. Only a small number of respondents gave a score below 5, only 6.6% of respondents. Therefore, very little respondents were unsatisfied with their life. Additionally, only 3.1% of the respondents were completely satisfied.

```
*Descriptives life satisfaction.
FREQUENCIES VARIABLES=Life_satisfaction
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS
SEKURT
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

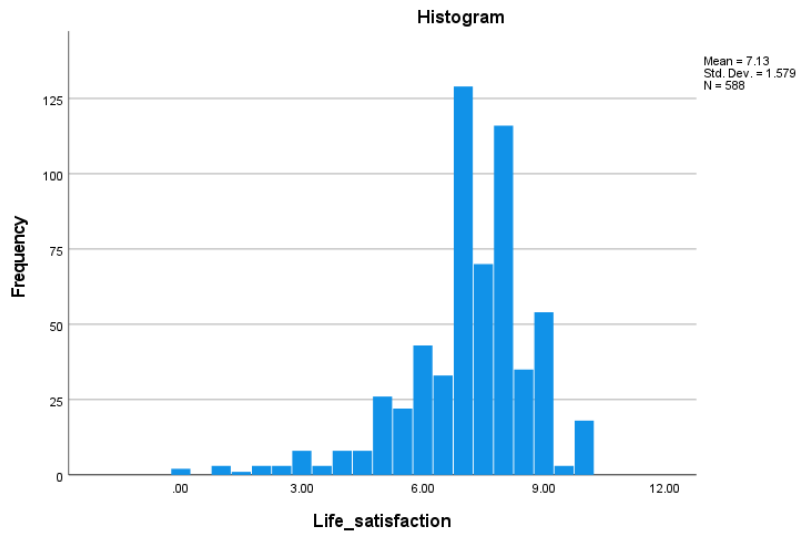
Statistics

Life_satisfaction

N	Valid	588
	Missing	0
Mean		7.1293
Median		7.5000
Std. Deviation		1.57854
Skewness		-1.226
Std. Error of Skewness		.101
Kurtosis		2.747
Std. Error of Kurtosis		.201
Range		10.00
Minimum		.00
Maximum		10.00
Percentiles	25	6.5000
	50	7.5000
	75	8.0000

Life_satisfaction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 Not at all satisfied	2	.3	.3	.3
	1.00	3	.5	.5	.9
	1.50	1	.2	.2	1.0
	2.00	3	.5	.5	1.5
	2.50	3	.5	.5	2.0
	3.00	8	1.4	1.4	3.4
	3.50	3	.5	.5	3.9
	4.00	8	1.4	1.4	5.3
	4.50	8	1.4	1.4	6.6
	5.00	26	4.4	4.4	11.1
	5.50	22	3.7	3.7	14.8
	6.00	43	7.3	7.3	22.1
	6.50	33	5.6	5.6	27.7
	7.00	129	21.9	21.9	49.7
	7.50	70	11.9	11.9	61.6
	8.00	116	19.7	19.7	81.3
	8.50	35	6.0	6.0	87.2
	9.00	54	9.2	9.2	96.4
	9.50	3	.5	.5	96.9
	10.00 Completely satisfied	18	3.1	3.1	100.0
	Total	588	100.0	100.0	



1.3. Volunteering

1.3.1. Original items

The independent continuous variable volunteering is measured by asking respondents to indicate for each organisation listed, what applies to them in this moment or over the past 12 months through, specifically if they have performed voluntary work at the organisations. There are twelve organisation categories, some of these items are: (1) a sports club or club for outdoor activities; (2) a cultural association or hobby club; (3) a trade union; (4) a business, professional or agrarian organization; (5) a consumers' organization or automobile club; (6) an organization for environmental protection, peace organization or animal rights organization; (7) a religious or church organization; (9) a political party; (10) a science, education, teachers' or parents' association; (11) a social society, an association for youth, pensioners/senior citizens, women, or friends' clubs; and (12) other organizations that you can freely join. Respondents could answer with 0=no and 1=yes.

In the case of all variables the majority of respondents indicated that they had not performed the volunteering activity at the organization or association. It is important to note that of the respondents that answered the question between 93.2% up to 99.5% of the respondents answered no. That the majority of respondents have not performed any volunteering in the last 12 months is supported by the median of 0 for all items. Respondents most frequently volunteered for a sports club or club for outdoor activities (5.6%) and organisations not mentioned indicated by other (6.8%). And the least at a consumers' organization or automobile club (0.5%) and a trade union (0.7%).

The Cronbach's alpha of 0.608 is not very high but high enough that the variables can be taken together.

```
*Descriptives items volunteering.
FREQUENCIES VARIABLES=fb14b007 fb14b012 fb14b017 fb14b022 fb14b027 fb14b032 fb14b037
fb14b042 fb14b047
   fb14b052 fb14b057 fb14b062
  /NTILES=4
```

/STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS SEKURT
/HISTOGRAM
/ORDER=ANALYSIS.

Statistics

		fb14b007 a sports club or club for outdoor activities, performed voluntary work	fb14b012 a cultural association or hobby club, performed voluntary work	fb14b017 a trade union, performed voluntary work	fb14b022 a business, professional or agrarian organization, performed voluntary work	fb14b027 a consumers organization or automobile club, performed voluntary work	fb14b032 an organization for humanitarian aid, human rights, minorities or migrants, perf	fb14b037 an organization for environmental protection, peace organization or animal right	fb14b042 a religious or church organization, performed voluntary work	fb14b047 a political party, performed voluntary work	fb14b052 a science, education, teachers or parents association, performed voluntary work	fb14b057 a social society; an association for youth, pensioners/senior citizens, women; o	fb14b062 other organizations that you can freely join, performed voluntary work
N	Valid	588	588	588	588	588	588	588	588	588	588	588	588
	Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean		.06	.05	.01	.01	.01	.04	.02	.05	.01	.03	.04	.07
Median		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Std. Deviation		.230	.217	.082	.109	.071	.198	.136	.217	.116	.181	.194	.252
Skewness		3.867	4.173	12.031	9.024	13.928	4.653	7.123	4.173	8.419	5.155	4.767	3.440
Std. Error of Skewness		.101	.101	.101	.101	.101	.101	.101	.101	.101	.101	.101	.101
Kurtosis		12.998	15.469	143.232	79.698	192.650	19.720	48.899	15.469	69.110	24.655	20.792	9.867
Std. Error of Kurtosis		.201	.201	.201	.201	.201	.201	.201	.201	.201	.201	.201	.201
Range		1	1	1	1	1	1	1	1	1	1	1	1
Minimum		0	0	0	0	0	0	0	0	0	0	0	0
Maximum		1	1	1	1	1	1	1	1	1	1	1	1
Percentiles	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	75	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

fb14b007 a sports club or club for outdoor activities, performed voluntary work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	555	94.4	94.4	94.4
	yes	33	5.6	5.6	100.0
	Total	588	100.0	100.0	

fb14b012 a cultural association or hobby club, performed voluntary work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	559	95.1	95.1	95.1
	yes	29	4.9	4.9	100.0
	Total	588	100.0	100.0	

fb14b017 a trade union, performed voluntary work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	584	99.3	99.3	99.3
	yes	4	.7	.7	100.0
	Total	588	100.0	100.0	

fb14b022 a business, professional or agrarian organization, performed voluntary work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 no	581	98.8	98.8	98.8
	1 yes	7	1.2	1.2	100.0
	Total	588	100.0	100.0	

fb14b027 a consumers organization or automobile club, performed voluntary work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 no	585	99.5	99.5	99.5
	1 yes	3	.5	.5	100.0
	Total	588	100.0	100.0	

fb14b032 an organization for humanitarian aid, human rights, minorities or migrants, perf

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 no	564	95.9	95.9	95.9
	1 yes	24	4.1	4.1	100.0
	Total	588	100.0	100.0	

fb14b037 an organization for environmental protection, peace organization or animal right

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 no	577	98.1	98.1	98.1
	1 yes	11	1.9	1.9	100.0
	Total	588	100.0	100.0	

fb14b042 a religious or church organization, performed voluntary work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 no	559	95.1	95.1	95.1
	1 yes	29	4.9	4.9	100.0
	Total	588	100.0	100.0	

fb14b047 a political party, performed voluntary work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 no	580	98.6	98.6	98.6
	1 yes	8	1.4	1.4	100.0
	Total	588	100.0	100.0	

fb14b052 a science, education, teachers or parents association, performed voluntary work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 no	568	96.6	96.6	96.6
	1 yes	20	3.4	3.4	100.0
	Total	588	100.0	100.0	

fb14b057 a social society; an association for youth, pensioners/senior citizens, women; o

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 no	565	96.1	96.1	96.1
	1 yes	23	3.9	3.9	100.0
	Total	588	100.0	100.0	

fb14b062 other organizations that you can freely join, performed voluntary work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 no	548	93.2	93.2	93.2
	1 yes	40	6.8	6.8	100.0
	Total	588	100.0	100.0	

```
*Reliability scale volunteering.
RELIABILITY
  /VARIABLES=fb14b007 fb14b012 fb14b017 fb14b022 fb14b027 fb14b032 fb14b037 fb14b042
fb14b047 fb14b052 fb14b057 fb14b062
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=CORR ANOVA
  /SUMMARY=MEANS CORR.
```

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.608	.640	12

1.3.2. Recoding and centralisation

Respondents could answer with 0=no and 1=yes. The new variable is recoded by adding the 12 items together and creating a new scale from 0 to 12 where 0 indicates that they have participated in 0 voluntary activities and 12 indicates participated in voluntary activities at all organisations.

In addition, volunteering needs to be centralised by taking the variable minus the average: 0.3929. This was done by first calculating the mean of age.

```
*Recoding volunteering.
COMPUTE
Volunteering=fb14b007+fb14b012+fb14b017+fb14b022+fb14b027+fb14b032+fb14b037+fb14b042+
    fb14b047+fb14b052+fb14b057+ fb14b062.
EXECUTE.

*Average for centralising.
FREQUENCIES VARIABLES=Volunteering
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS
SEKURT
  /HISTOGRAM
  /ORDER=ANALYSIS.

*Centralising volunteering.
MEANS TABLES=Volunteering
  /CELLS=MEAN COUNT STDDEV.
COMPUTE Cvolunteering=volunteering-0.3929.
```

EXECUTE.

1.3.3. Final variable

The variable is extremely right skewed with 76.7% of respondents indicating no volunteering, meaning that the majority of respondents did not perform any volunteer work in the last 12 months. Only 23.3.% respondents indicated having performed volunteer work. 14.6% of respondents performed voluntary work at 1 organisation and 4.3% of respondents worked at 2 organisations and 3.2% at 3. One respondent worked at 10 volunteering organisations. In total 137 respondents indicated having performed any volunteer work in the last 12 months.

```
*Descriptives volunteering.
FREQUENCIES VARIABLES=Volunteering
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS
SEKURT
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

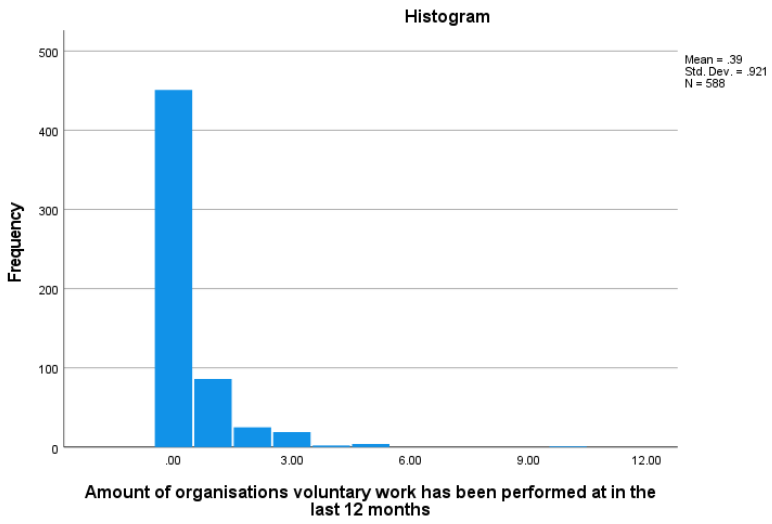
Statistics

Volunteering Amount of organisations v

N	Valid	588
	Missing	0
Mean		.3929
Median		.0000
Std. Deviation		.92131
Skewness		3.944
Std. Error of Skewness		.101
Kurtosis		24.997
Std. Error of Kurtosis		.201
Range		10.00
Minimum		.00
Maximum		10.00
Percentiles	25	.0000
	50	.0000
	75	.0000

Volunteering Amount of organisations voluntary work has been performed at in the last 12 months

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 Performed no voluntary work	451	76.7	76.7	76.7
	1.00	86	14.6	14.6	91.3
	2.00	25	4.3	4.3	95.6
	3.00	19	3.2	3.2	98.8
	4.00	2	.3	.3	99.1
	5.00	4	.7	.7	99.8
	10.00	1	.2	.2	100.0
	Total	588	100.0	100.0	



1.4. Age

1.4.1. Original item and final variable

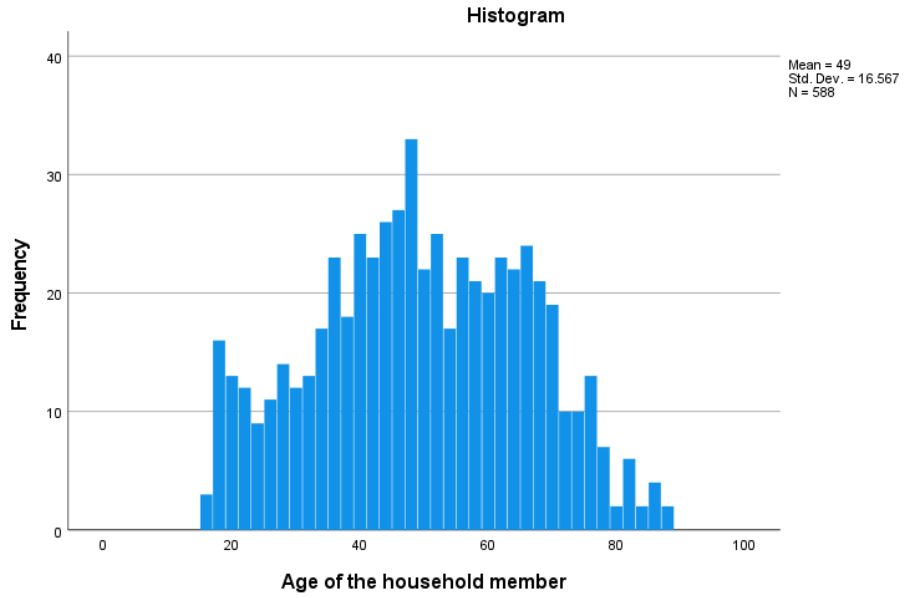
Age was measured by asking for the age of the household member. The mean of age is 49.00 with a standard deviation of 16.567. This standard deviation is quite high. The range of age goes from 16 to 88. The histogram also shows that the peak is near 50 meaning that the most respondents are middle aged. It also shows that there is a small peak just before 20 and near 80. The smallest group of respondents are the youngest, as only 21.8% are between 16 and 35, 39% are middle aged between 36 and 55, and 39.9% respondents are between 56 and 88 falling into the older adult category.

```
*Descriptives age.
FREQUENCIES VARIABLES=leeftijd
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS
SEKURT
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

Statistics

leeftijd Age of the household member

N	Valid	588
	Missing	0
Mean		49.00
Median		48.00
Std. Deviation		16.567
Skewness		-.033
Std. Error of Skewness		.101
Kurtosis		-.723
Std. Error of Kurtosis		.201
Range		72
Minimum		16
Maximum		88
Percentiles	25	37.00
	50	48.00
	75	62.00



leeftijd Age of the household member

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	16	3	.5	.5	.5
	17	7	1.2	1.2	1.7
	18	9	1.5	1.5	3.2
	19	5	.9	.9	4.1
	20	8	1.4	1.4	5.4
	21	5	.9	.9	6.3
	22	7	1.2	1.2	7.5
	23	6	1.0	1.0	8.5
	24	3	.5	.5	9.0
	25	6	1.0	1.0	10.0
	26	5	.9	.9	10.9
	27	6	1.0	1.0	11.9
	28	8	1.4	1.4	13.3
	29	4	.7	.7	13.9
	30	8	1.4	1.4	15.3
	31	8	1.4	1.4	16.7
	32	5	.9	.9	17.5
	33	8	1.4	1.4	18.9
	34	9	1.5	1.5	20.4
	35	8	1.4	1.4	21.8
	36	15	2.6	2.6	24.3
	37	5	.9	.9	25.2
	38	13	2.2	2.2	27.4
	39	10	1.7	1.7	29.1
	40	15	2.6	2.6	31.6
	41	12	2.0	2.0	33.7
	42	11	1.9	1.9	35.5
	43	11	1.9	1.9	37.4
	44	15	2.6	2.6	40.0
	45	12	2.0	2.0	42.0
	46	15	2.6	2.6	44.6
	47	15	2.6	2.6	47.1
	48	18	3.1	3.1	50.2
	49	10	1.7	1.7	51.9
	50	12	2.0	2.0	53.9
	51	12	2.0	2.0	56.0
	52	13	2.2	2.2	58.2
	53	9	1.5	1.5	59.7
	54	8	1.4	1.4	61.1
	55	12	2.0	2.0	63.1
	56	11	1.9	1.9	65.0
	57	10	1.7	1.7	66.7
	58	11	1.9	1.9	68.5
	59	9	1.5	1.5	70.1
	60	11	1.9	1.9	71.9
	61	14	2.4	2.4	74.3
	62	9	1.5	1.5	75.9
	63	10	1.7	1.7	77.6
	64	12	2.0	2.0	79.6
	65	9	1.5	1.5	81.1
	66	15	2.6	2.6	83.7
	67	12	2.0	2.0	85.7
	68	9	1.5	1.5	87.2
	69	7	1.2	1.2	88.4
	70	12	2.0	2.0	90.5
	71	5	.9	.9	91.3
	72	5	.9	.9	92.2
	73	8	1.4	1.4	93.5
	74	2	.3	.3	93.9
	75	10	1.7	1.7	95.6
	76	3	.5	.5	96.1
	77	6	1.0	1.0	97.1
	78	1	.2	.2	97.3
	79	1	.2	.2	97.4
	80	1	.2	.2	97.6
	81	3	.5	.5	98.1
	82	3	.5	.5	98.6
	83	2	.3	.3	99.0
	85	2	.3	.3	99.3
	86	2	.3	.3	99.7
	88	2	.3	.3	100.0
	Total	588	100.0	100.0	

1.4.2. Centralisation

```
*Centralising age.
MEANS TABLES=leeftijd
  /CELLS=MEAN COUNT STDDEV.
COMPUTE Cage=leeftijd-49.00.
EXECUTE.
```

1.5. Gender

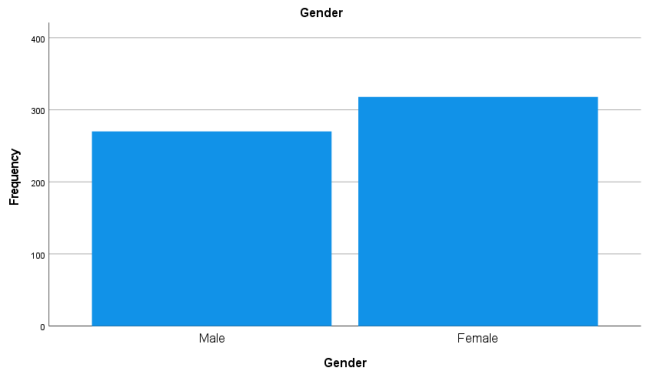
1.5.1. Original item

Gender was measured by asking the respondents if they were male or female. Answer options were 1=male and 2=female. There are more females than males in the dataset. 54.1% of respondents are females and 45.9% of respondents are male.

```
*Descriptives gender.
FREQUENCIES VARIABLES=geslacht
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEDIAN SKEWNESS SESKEW KURTOSIS SEKURT
  /BARCHART FREQ
  /ORDER=ANALYSIS.
```

geslacht Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Male	270	45.9	45.9	45.9
	2 Female	318	54.1	54.1	100.0
	Total	588	100.0	100.0	



1.5.2. Recoding

The variable gender is already a dummy variable, however, was recoded to where male has the score 0 instead of 1 and female scores 1 instead of 2.

```
*Recoding gender.
RECODE geslacht (1=0) (2=1) INTO Gender.
VARIABLE LABELS  Gender 'Gender'.
EXECUTE.
```

1.5.3. Final variable

There number of male and female respondents remains the same, 54.1% of respondents are females and 45.9% of respondents are male.

```
*Descriptives gender post-coding.
FREQUENCIES VARIABLES=Gender
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEDIAN SKEWNESS SESKEW KURTOSIS SEKURT
  /BARCHART FREQ
  /ORDER=ANALYSIS.
```

Gender Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 Male	270	45.9	45.9	45.9
	1.00 Female	318	54.1	54.1	100.0
	Total	588	100.0	100.0	

1.6. Occupation

1.6.1. Original item

The categorical variable occupation is measured by asking respondents about their primary occupation. The answer options were: (1) paid employment; (2) works or assists in family business; (3) autonomous professional, freelancer, or self-employed; (4) job seeker following job loss; (5) first-time job seeker; (6) exempted from job seeking following job loss; (7) attends school or is studying; (8) takes care of housekeeping; (9) is a pensioner ([voluntary] early retirement, old age pension scheme); (10) has (partial) work disability; (11) performs unpaid work while retaining unemployment benefit; (12) performs voluntary work; (13) does something else; and (14) is too young to have an occupation.

The majority of respondents have paid employment, namely 44.6%. There is also a large group of pensioners (19%). Only 1 respondent is too young to work and another 2 are exempted from job seeking and performing unpaid work.

```
*Descriptives occupation.
FREQUENCIES VARIABLES=belbezig
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS SEKURT
  /BARCHART FREQ
  /ORDER=ANALYSIS.
```

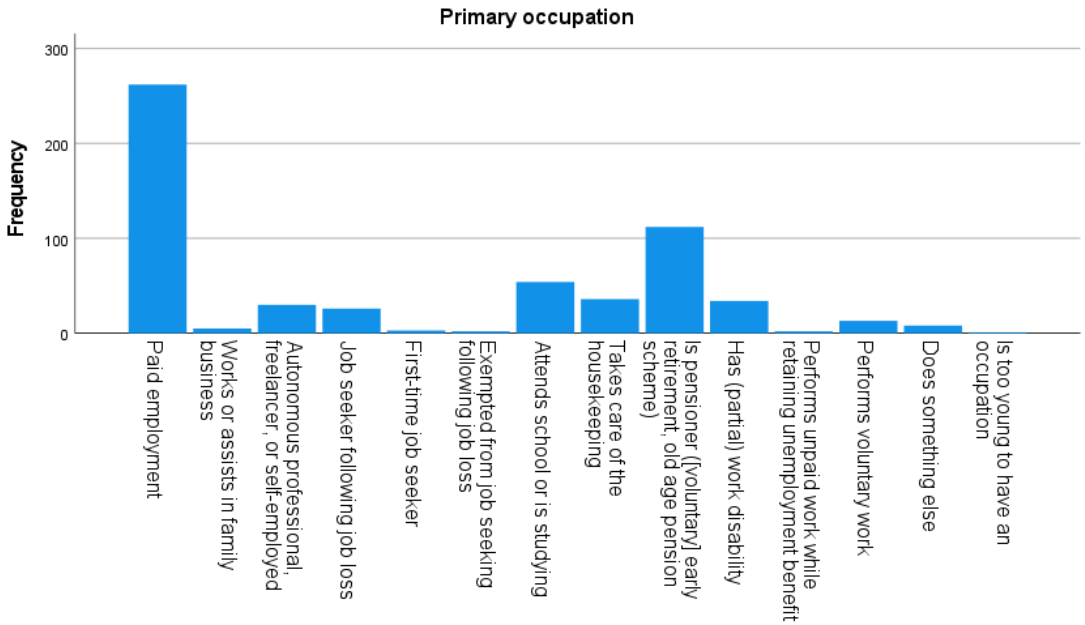
Statistics

belbezig Primary occupation

N	Valid	588
	Missing	0
Median		3.00
Std. Deviation		3.880
Skewness		.338
Std. Error of Skewness		.101
Kurtosis		-1.476
Std. Error of Kurtosis		.201
Minimum		1
Maximum		14

belbezig Primary occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Paid employment	262	44.6	44.6	44.6
	2 Works or assists in family business	5	.9	.9	45.4
	3 Autonomous professional, freelancer, or self-employed	30	5.1	5.1	50.5
	4 Job seeker following job loss	26	4.4	4.4	54.9
	5 First-time job seeker	3	.5	.5	55.4
	6 Exempted from job seeking following job loss	2	.3	.3	55.8
	7 Attends school or is studying	54	9.2	9.2	65.0
	8 Takes care of the housekeeping	36	6.1	6.1	71.1
	9 Is pensioner ([voluntary] early retirement, old age pension scheme)	112	19.0	19.0	90.1
	10 Has (partial) work disability	34	5.8	5.8	95.9
	11 Performs unpaid work while retaining unemployment benefit	2	.3	.3	96.3
	12 Performs voluntary work	13	2.2	2.2	98.5
	13 Does something else	8	1.4	1.4	99.8
	14 Is too young to have an occupation	1	.2	.2	100.0
	Total	588	100.0	100.0	



1.6.2. Recoding

The variable is recoded to reduce the number of categories to 5. Answer options 1, 2 and 3 together represent paid employment, shown by score 0. Options 4, 5 ,6, 8, 9, 10 and 14 are given score 1 which indicates unemployed. Option 7 becomes 2 which indicates studying. Options 11 and 12 indicate voluntary work and is given the score 3. Finally, option 13 is given the score 4 which represents other.

```
*Recoding occupation.
RECODE belbezig (1=0) (2=0) (3=0) (4=1) (5=1) (6=1) (8=1) (9=1) (10=1) (7=2) (11=3) (12=3) (13=4)
    (14=1) (SYSMIS=SYSMIS) INTO Occupation.
VARIABLE LABELS  Occupation 'Occupation categories'.
EXECUTE.
```

1.6.3. Final variable

Over half of the respondents have paid employment (50.5%) using the final variable. The unemployed group is the second largest group at 36.4%. Only 2.6% of the respondents are performing voluntary work as their primary occupation and 9.2% are studying. Meanwhile 1.4% are doing something not listed.

```
*Descriptives occupation post-coding.
FREQUENCIES VARIABLES=Occupation
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS SEKURT
  /BARCHART FREQ
  /ORDER=ANALYSIS.
```

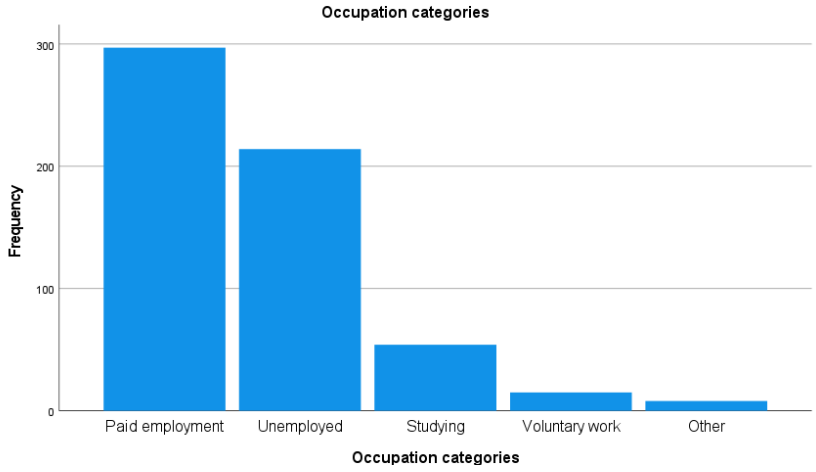
Statistics

Occupation Occupation categories

N	Valid	588
	Missing	0
Mean		.6786
Median		.0000
Std. Deviation		.84814
Skewness		1.456
Std. Error of Skewness		.101
Kurtosis		2.437
Std. Error of Kurtosis		.201
Minimum		.00
Maximum		4.00

Occupation Occupation categories

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 Paid employment	297	50.5	50.5	50.5
	1.00 Unemployed	214	36.4	36.4	86.9
	2.00 Studying	54	9.2	9.2	96.1
	3.00 Voluntary work	15	2.6	2.6	98.6
	4.00 Other	8	1.4	1.4	100.0
	Total	588	100.0	100.0	



1.7. Social contacts

1.7.1. Original item

The variable social contacts is measured through the question: “how satisfied are you with your social contacts?” This could be answered on a scale of 0 to 10, where 0=not at all satisfied and 10=completely satisfied. The variable is left skewed with high peaks at 7 and 8, indicating that most respondents were quite satisfied with their social contacts. The mean is at 6.90 and the standard deviation is 1.853 which on a scale of 0 to 10 is quite high.

```
*Descriptives social contacts.
FREQUENCIES VARIABLES=fb14b306
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS
SEKURT
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

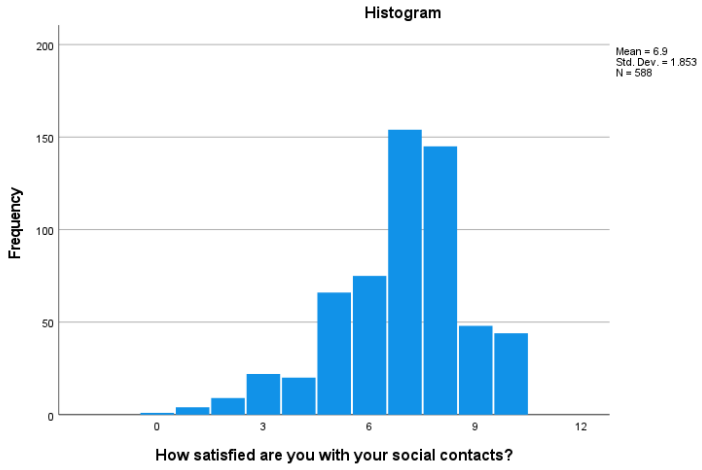
Statistics

Social_contacts Satisfaction with social

N	Valid	588
	Missing	0
Mean		6.9014
Median		7.0000
Std. Deviation		1.85334
Skewness		-.690
Std. Error of Skewness		.101
Kurtosis		.622
Std. Error of Kurtosis		.201
Range		10.00
Minimum		.00
Maximum		10.00
Percentiles	25	6.0000
	50	7.0000
	75	8.0000

fb14b306 How satisfied are you with your social contacts?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 not at all satisfied	1	.2	.2	.2
	1	4	.7	.7	.9
	2	9	1.5	1.5	2.4
	3	22	3.7	3.7	6.1
	4	20	3.4	3.4	9.5
	5	66	11.2	11.2	20.7
	6	75	12.8	12.8	33.5
	7	154	26.2	26.2	59.7
	8	145	24.7	24.7	84.4
	9	48	8.2	8.2	92.5
	10 completely satisfied	44	7.5	7.5	100.0
	Total	588	100.0	100.0	



1.7.2. Recoding

Answers of I don't know (999) have been recoded to system missing and all other answer options remain the same.

```
*Recoding social contacts.
RECODE fb14b306 (999=SYSMIS) (SYSMIS=SYSMIS) (1 thru 10=Copy) INTO Social_contacts.
VARIABLE LABELS  Social_contacts 'Satisfaction with social contacts'.
EXECUTE.
```

1.7.3. Final variable

In the final variable the descriptives remain the same. The variable has a high average of 6.90 with a high standard deviation of 1.853. Most respondents are satisfied with the social contacts that they have.

*Descriptives social contacts post-coding.

```
FREQUENCIES VARIABLES=Social_contacts
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS
SEKURT
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

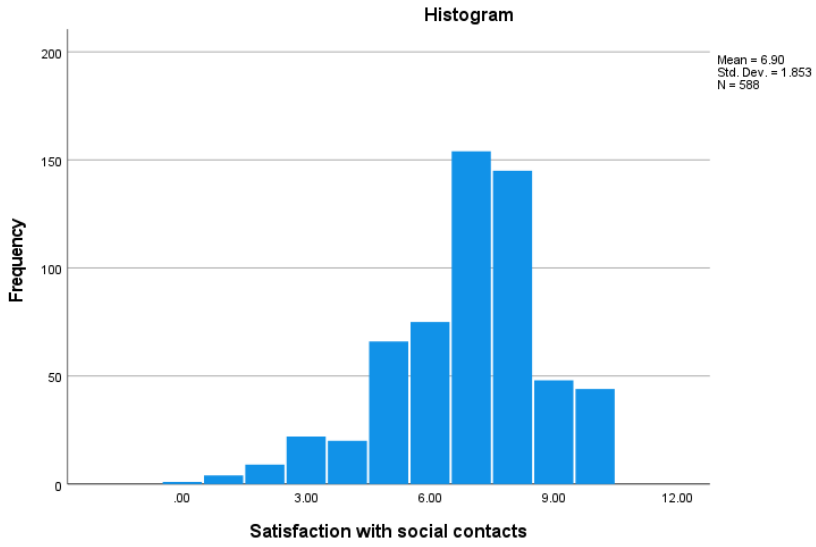
Statistics

Social_contacts Satisfaction with social

N	Valid	588
	Missing	0
Mean		6.9014
Median		7.0000
Std. Deviation		1.85334
Skewness		-.690
Std. Error of Skewness		.101
Kurtosis		.622
Std. Error of Kurtosis		.201
Range		10.00
Minimum		.00
Maximum		10.00
Percentiles	25	6.0000
	50	7.0000
	75	8.0000

Social_contacts Satisfaction with social contacts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00 Not at all satisfied	1	.2	.2	.2
	1.00	4	.7	.7	.9
	2.00	9	1.5	1.5	2.4
	3.00	22	3.7	3.7	6.1
	4.00	20	3.4	3.4	9.5
	5.00	66	11.2	11.2	20.7
	6.00	75	12.8	12.8	33.5
	7.00	154	26.2	26.2	59.7
	8.00	145	24.7	24.7	84.4
	9.00	48	8.2	8.2	92.5
	10.00 Completely satisfied	44	7.5	7.5	100.0
	Total	588	100.0	100.0	



1.8. Health

1.8.1. Original and final variable

The continuous variable health is measured through the question: “how would you describe your health, generally speaking?” Respondents could answer with (1) poor; (2) moderate; (3) good; (4) very good; and (5) excellent. As seen in the histogram, there is a high peak at score 3 with a much lower but relatively equal looking categories beside it. This means that the majority of respondents rate their health as good. Only a small group of 3.2% feel that they have poor health and only 6% feel that their health is excellent.

```
*Descriptives health.
FREQUENCIES VARIABLES=ek13b004
```

/NTILES=4
/STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS SEKURT
/HISTOGRAM
/ORDER=ANALYSIS.

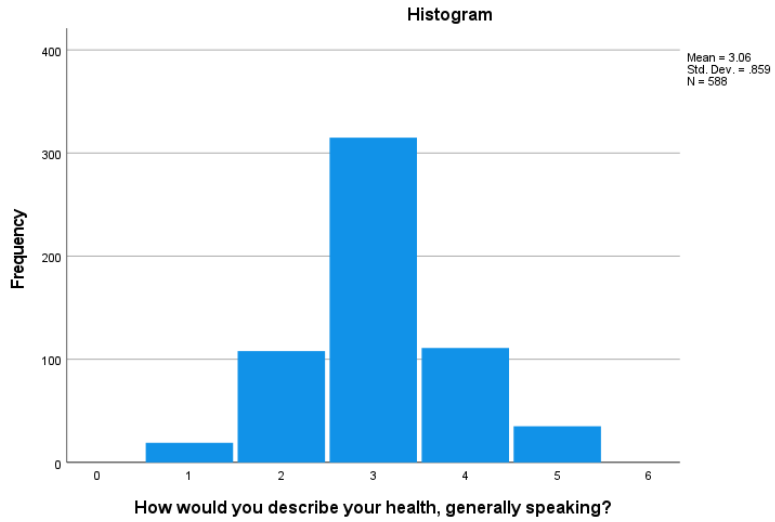
Statistics

ek13b004 How would you describe you

N	Valid	588
	Missing	0
Mean		3.06
Median		3.00
Std. Deviation		.859
Skewness		.145
Std. Error of Skewness		.101
Kurtosis		.342
Std. Error of Kurtosis		.201
Range		4
Minimum		1
Maximum		5
Percentiles	25	3.00
	50	3.00
	75	3.00

ek13b004 How would you describe your health, generally speaking?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 poor	19	3.2	3.2	3.2
	2 moderate	108	18.4	18.4	21.6
	3 good	315	53.6	53.6	75.2
	4 very good	111	18.9	18.9	94.0
	5 excellent	35	6.0	6.0	100.0
	Total	588	100.0	100.0	



1.9. Interaction between volunteering and age

*Interaction volunteering and age.
COMPUTE VolXage=Cvolunteering * Cage.
EXECUTE.

1.10. Analysis data collection

As a result of filtering the dataset for immigrants and non-response, 588 respondents remained in the dataset. For insight into the data collection, the time taken to fill in the questionnaire was also examined using the dataset which included all 2227 respondents. On average it took respondents

10700.39 seconds to answer all the questions on the questionnaire, which equals nearly 3 hours. The range of time it took was large, 158 seconds was the shortest amount of time (roughly 3 minutes), and 1799582 seconds was the longest (nearly 3 weeks).

```
*time survey.
FREQUENCIES VARIABLES=fb14b326
  /STATISTICS=RANGE MINIMUM MAXIMUM MEAN MEDIAN
  /ORDER=ANALYSIS.
```

Statistics

Duration in seconds

N	Valid	1269
	Missing	958
Mean		10700.39
Median		1474.75
Range		1799424
Minimum		158
Maximum		1799582

Appendix 2: Analysis output

2.1. Inspection data not-complete dataset

To understand how variables were influenced by the eventual removal of missing answers to complete the dataset, an initial inspection of descriptives was performed. The mean of life satisfaction is 7.09 meaning that immigrants are quite satisfied with their lives. Immigrants also rarely performed volunteer work as the mean of 0.39 indicates. The mean age of the immigrants in the dataset was 43.82, the standard deviation of 16.197 is quite large but the range is 72 which is also large. The median of 1 indicates that there are more females than males in the dataset. The median of 0 of occupation reveals that most immigrants have paid employment. The immigrants are also quite satisfied with their social contacts as indicated by the mean of 6.92 and median of 7, the standard deviation of 1.87 is however quite large on a range of 0 to 10. Finally, the immigrants most often state that their health is good, evident by the median of 3.

```
*Descriptives original data.
FREQUENCIES VARIABLES=Life_satisfaction Volunteering leeftijd Gender Occupation Social_contacts
ek13b004
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN SKEWNESS SESKEW KURTOSIS
SEKURT
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

Statistics

		Life_satisfaction	Volunteering	leeftijd Age of the household member	Gender Gender	Occupation Occupation categories	Social_contacts Satisfaction with social contacts	ek13b004 How would you describe your health, generally speaking?
N	Valid	787	852	1483	1483	1483	810	888
	Missing	696	631	0	0	0	673	595
Mean		7.0985	.3850	43.82	.5516	.7235	6.9012	3.07
Median		7.5000	.0000	43.00	1.0000	.0000	7.0000	3.00
Std. Deviation		1.60594	.89766	16.197	.49750	.91864	1.87630	.874
Skewness		-1.218	3.689	.313	-.208	1.364	-.754	.130
Std. Error of Skewness		.087	.084	.064	.064	.064	.086	.082
Kurtosis		2.514	21.432	-.640	-1.960	1.770	.689	.310
Std. Error of Kurtosis		.174	.167	.127	.127	.127	.172	.164
Range		10.00	10.00	72	1.00	4.00	10.00	4
Minimum		.00	.00	16	.00	.00	.00	1
Maximum		10.00	10.00	88	1.00	4.00	10.00	5
Percentiles	25	6.5000	.0000	31.00	.0000	.0000	6.0000	3.00
	50	7.5000	.0000	43.00	1.0000	.0000	7.0000	3.00
	75	8.0000	.0000	55.00	1.0000	1.0000	8.0000	4.00

2.2. Analysis missing data

The number of missing answers for the variables social contacts (45.4%), health (40.1%), life satisfaction (46.9%), and volunteering (42.5%) was very high. There are no missing answers for age, gender, occupation. The questions on social contacts, health and life satisfaction each required an evaluation of their feelings on the topic which could have made the questions more difficult to

answer. Volunteering was made up of 12 items which were also part of more extensive questions on work and therefore, might have been intimidating or too many to answer.

```
*Analyse Patterns of Missing Values.
MULTIPLE IMPUTATION  Life_satisfaction Volunteering leeftijd Gender Social_contacts Occupation
ek13b004
  /IMPUTE METHOD=NONE
  /MISSINGSUMMARIES  OVERALL VARIABLES (MAXVARS=25 MINPCTMISSING=10) PATTERNS.

MVA VARIABLES=Life_satisfaction Volunteering leeftijd Gender Social_contacts Occupation ek13b004
 /MAXCAT=25
 /CATEGORICAL=Gender Occupation
 /TTEST NOPROB PERCENT=5
 /TPATTERN PERCENT=1.
```

Variable Summary[a,b]

	Missing				
	N	Percent	Valid N	Mean	Std. Deviation
Life_satisfaction	696	46.9%	787	7.0985	1.60594
Social_contacts Satisfaction with social contacts	673	45.4%	810		
Volunteering	631	42.5%	852		
ek13b004 How would you describe your health, generally speaking?	595	40.1%	888		

a. Maximum number of variables shown: 25

b. Minimum percentage of missing values for variable to be included: 10.0%

```
*Removing missing values to complete dataset.
FILTER OFF.
USE ALL.
SELECT IF  (NOT(Life_satisfaction<0)).
EXECUTE.

FILTER OFF.
USE ALL.
SELECT IF  (NOT(ek13b004=0)).
EXECUTE.

FILTER OFF.
USE ALL.
SELECT IF  (NOT(Social_contacts<0)).
EXECUTE.
```

2.3. Descriptive statistics complete dataset

2.3.1. Life satisfaction

The dependent variable life satisfaction has an average of 7.13 with a standard deviation of 1.579, which is quite large on a scale of 0 to 10. The median is 7.5, this means that respondents are quite satisfied with their lives.

```
*Descriptives life satisfaction.
FREQUENCIES VARIABLES=Life_satisfaction
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

Statistics

Life_satisfaction

N	Valid	588
	Missing	0
Mean		7.1293
Median		7.5000
Std. Deviation		1.57854
Range		10.00
Minimum		.00
Maximum		10.00
Percentiles	25	6.5000
	50	7.5000
	75	8.0000

2.3.2. Volunteering

Volunteering has a very low average of 0.39 with a small standard deviation of 0.923. This is especially small on a scale of 0 to 12. Respondents, therefore, most often have not performed any volunteering work. The median is 0 which confirms this.

```
FREQUENCIES VARIABLES=Volunteering
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

Statistics

Volunteering Amount of organisations

N	Valid	588
	Missing	0
Mean		.3929
Median		.0000
Std. Deviation		.92131
Range		10.00
Minimum		.00
Maximum		10.00
Percentiles	25	.0000
	50	.0000
	75	.0000

2.3.3. Age

Age has quite a high average of 50 and standard deviation of 16.567. Most of the respondents are therefore middle aged, most respondents indicated being 48.

```
FREQUENCIES VARIABLES=leeftijd
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

Statistics

leeftijd Age of the household membe

N	Valid	588
	Missing	0
Mean		49.00
Median		48.00
Std. Deviation		16.567
Range		72
Minimum		16
Maximum		88
Percentiles	25	37.00
	50	48.00
	75	62.00

2.3.4. Gender

As the median of 1 indicates, there are more females than males in the dataset.

```
FREQUENCIES VARIABLES=gender
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEDIAN SKEWNESS SESKEW KURTOSIS SEKURT
  /BARCHART FREQ
  /ORDER=ANALYSIS.
```

Statistics

Gender Gender

N	Valid	588
	Missing	0
Median		1.0000
Std. Deviation		.49876
Skewness		-.164
Std. Error of Skewness		.101
Kurtosis		-1.980
Std. Error of Kurtosis		.201
Minimum		.00
Maximum		1.00

2.3.5. Occupation

As the median of 0 indicates, the occupation status of most respondents is paid employed (50.5%). A second large group of 36.4% is unemployed and the smallest group does something other than working, studying or volunteering (1.4%).

```
FREQUENCIES VARIABLES=occupation
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEDIAN SKEWNESS SESKEW KURTOSIS SEKURT
  /BARCHART FREQ
  /ORDER=ANALYSIS.
```

Statistics

Occupation Occupation categories

N	Valid	588
	Missing	0
Median		.0000
Std. Deviation		.84814
Skewness		1.456
Std. Error of Skewness		.101
Kurtosis		2.437
Std. Error of Kurtosis		.201
Minimum		.00
Maximum		4.00

2.3.6. Social contacts

The variable social contacts has a high average of 6.9 with a high standard deviation of 1.85. Most respondents are satisfied with the social contacts that they have.

```
FREQUENCIES VARIABLES=Social_contacts
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

Statistics

Social_contacts Satisfaction with soc

N	Valid	588
	Missing	0
Mean		6.9014
Median		7.0000
Std. Deviation		1.85334
Range		10.00
Minimum		.00
Maximum		10.00
Percentiles	25	6.0000
	50	7.0000
	75	8.0000

2.3.7. Health

The mean and median of 3.06 and 3 respectively, indicate that most respondents indicate that they feel that their health is good.

```
FREQUENCIES VARIABLES=ek13b004
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

Statistics

ek13b004 How would you describe y

N	Valid	588
	Missing	0
Mean		3.06
Median		3.00
Std. Deviation		.859
Range		4
Minimum		1
Maximum		5
Percentiles	25	3.00
	50	3.00
	75	3.00

2.4. Bivariate analysis

The strongest and most significant relationship with life satisfaction was found with social contacts (r=0.484; p<0.001). This means that as people are more satisfied with their social contacts, they are also more satisfied with their lives. Life satisfaction is also significantly and positively correlated to health (r=0.331; p<0.001). When people judge their health to be better, they are more likely to be satisfied with their lives. The relationship between life satisfaction and volunteering (r=0.024; p=0.588), life satisfaction and age is (r=0.074; p=0.073) weak and insignificant. Therefore, performing more volunteering work or older age does not mean that people will be more satisfied with their lives. The relationship between life satisfaction and gender is negative and also very weak (r=-0.037; p=0.370). Men are more satisfied with their lives than females but not significantly (t(586) = 0.896; p=0.370).

As seen in table 2, between age and health there is also a significant negative but not very strong relationship (r=-0.178; p<0.001). This means that as people get older their health worsens. Health is also related to social contacts (r=0.203; p<0.001). People who have better health are also more satisfied with their social contacts. There is also a weak significant relationship between gender and age (r=-0.095; p=0.022). This indicates that males in this dataset are older than the females (t(586) = 2.303; p=0.022).

Between age and occupation there is also an extremely strong relationship (r=0.694; p<0.001). There is a connection between the age of the respondent and their type of occupation (F(4,583)=134.946; p<0.001). The mean of people without work is the largest with a score of 60.58, then voluntary work with 59.87, then paid employed with 45.37, other with 43.50 and studying the lowest with 20.83. Occupation is also positively significantly related to health (r=0.279; p<0.001). This means that the health of the person plays a role in their occupation status (F(4,583)=12.410; p<0.001).

```
*Correlations between variables.
CORRELATIONS
  /VARIABLES=Volunteering Social_contacts leeftijd ek13b004 Life_satisfaction
  /PRINT=TWOTAIL NOSIG FULL
  /MISSING=PAIRWISE.
```

Correlations

		Volunteering Amount of organisations voluntary work has been performed at in the last 12 months	Social_contacts Satisfaction with social contacts	leeftijd Age of the household member	ek13b004 How would you describe your health, generally speaking?	Life_satisfaction
Volunteering Amount of organisations voluntary work has been performed at in the last 12 months	Pearson Correlation	1	.047	.036	-.002	.024
	Sig. (2-tailed)		.258	.378	.969	.558
	N	588	588	588	588	588
Social_contacts Satisfaction with social contacts	Pearson Correlation	.047	1	.077	.203**	.484**
	Sig. (2-tailed)	.258		.063	<.001	<.001
	N	588	588	588	588	588
leeftijd Age of the household member	Pearson Correlation	.036	.077	1	-.178**	.074
	Sig. (2-tailed)	.378	.063		<.001	.073
	N	588	588	588	588	588
ek13b004 How would you describe your health, generally speaking?	Pearson Correlation	-.002	.203**	-.178**	1	.331**
	Sig. (2-tailed)	.969	<.001	<.001		<.001
	N	588	588	588	588	588
Life_satisfaction	Pearson Correlation	.024	.484**	.074	.331**	1
	Sig. (2-tailed)	.558	<.001	.073	<.001	
	N	588	588	588	588	588

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

```
T-TEST GROUPS=Gender(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=Social_contacts leeftijd ek13b004 Life_satisfaction Volunteering
  /ES DISPLAY(TRUE)
  /CRITERIA=CI(.95).
```

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean	Std. Error	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Difference	Difference	Lower	Upper
Social_contacts Satisfaction with social contacts	Equal variances assumed	.782	.377	-1.581	586	.057	.114	-.24221	.15318	-.54305	.05864
	Equal variances not assumed			-1.582	572.039	.057	.114	-.24221	.15308	-.54287	.05846
leeftijd Age of the household member	Equal variances assumed	.270	.603	2.303	586	.011	.022	3.147	1.366	.464	5.829
	Equal variances not assumed			2.303	570.381	.011	.022	3.147	1.366	.463	5.830
ek13b004 How would you describe your health, generally speaking?	Equal variances assumed	.138	.711	1.537	586	.062	.125	.109	.071	-.030	.249
	Equal variances not assumed			1.550	583.807	.061	.122	.109	.070	-.029	.247
Life_satisfaction	Equal variances assumed	.114	.736	.896	586	.185	.370	.11712	.13065	-.13949	.37373
	Equal variances not assumed			.900	577.522	.184	.369	.11712	.13020	-.13859	.37284
Volunteering Amount of organisations voluntary work has been performed at in the last 12 months	Equal variances assumed	.040	.842	-.186	586	.426	.853	-.01419	.07631	-.16405	.13568
	Equal variances not assumed			-.187	581.541	.426	.852	-.01419	.07583	-.16312	.13475

```
CROSSTABS
  /TABLES=Gender BY Occupation
  /FORMAT=AVALUE TABLES
  /STATISTICS=CHISQ PHI
  /CELLS=COUNT
  /COUNT ROUND CELL.
```

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.093	.280
	Cramer's V	.093	.280
N of Valid Cases		588	

```
UNIANOVA Life_satisfaction BY occupation
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT DESCRIPTIVE
  /CRITERIA=ALPHA(.05)
  /DESIGN=Occupation
```

Tests of Between-Subjects Effects

Dependent Variable: Life_satisfaction

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	10.367[a]	4	2.592	1.040	.386
Intercept	5681.122	1	5681.122	2280.570	<.001
Occupation	10.367	4	2.592	1.040	.386
Error	1452.310	583	2.491		
Total	31348.500	588			
Corrected Total	1462.677	587			

a. R Squared = .007 (Adjusted R Squared = .000)

```
UNIANOVA Volunteering BY occupation
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT DESCRIPTIVE
  /CRITERIA=ALPHA(.05)
  /DESIGN=Occupation
```

Tests of Between-Subjects Effects

Dependent Variable: Volunteering Amount of organisations voluntary work has been perfo

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	11.150[a]	4	2.788	3.336	.010
Intercept	30.555	1	30.555	36.570	<.001
Occupation	11.150	4	2.788	3.336	.010
Error	487.100	583	.836		
Total	589.000	588			
Corrected Total	498.250	587			

a. R Squared = .022 (Adjusted R Squared = .016)

```
UNIANOVA leeftijd BY occupation
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT DESCRIPTIVE
```

/CRITERIA=ALPHA(.05)
/DESIGN=Occupation

Tests of Between-Subjects Effects

Dependent Variable: leeftijd Age of the household member

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	77454.100[a]	4	19363.525	134.946	<.001
Intercept	242733.252	1	242733.252	1691.634	<.001
Occupation	77454.100	4	19363.525	134.946	<.001
Error	83654.898	583	143.490		
Total	1572799.000	588			
Corrected Total	161108.998	587			

a. R Squared = .481 (Adjusted R Squared = .477)

Descriptive Statistics

Dependent Variable: leeftijd Age of the household member

Occupation Occupation categories	Mean	Std. Deviation	N
.00 Paid employment	45.37	10.879	297
1.00 Unemployed	60.58	14.341	214
2.00 Studying	20.83	4.399	54
3.00 Voluntary work	59.87	14.055	15
4.00 Other	43.50	12.083	8
Total	49.00	16.567	588

UNIANOVA Social_contacts BY occupation
/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/PRINT DESCRIPTIVE
/CRITERIA=ALPHA(.05)
/DESIGN=Occupation

Tests of Between-Subjects Effects

Dependent Variable: Social_contacts Satisfaction with social contacts

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	11.424[a]	4	2.856	.831	.506
Intercept	5590.801	1	5590.801	1625.772	<.001
Occupation	11.424	4	2.856	.831	.506
Error	2004.855	583	3.439		
Total	30022.000	588			
Corrected Total	2016.279	587			

a. R Squared = .006 (Adjusted R Squared = -.001)

UNIANOVA ek13b004 BY occupation
/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/PRINT DESCRIPTIVE
/CRITERIA=ALPHA(.05)
/DESIGN=Occupation

Tests of Between-Subjects Effects

Dependent Variable: ek13b004 How would you describe your health, generally speaking?

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	33.968[a]	4	8.492	12.410	<.001
Intercept	953.028	1	953.028	1392.699	<.001
Occupation	33.968	4	8.492	12.410	<.001
Error	398.949	583	.684		
Total	5937.000	588			
Corrected Total	432.917	587			

a. R Squared = .078 (Adjusted R Squared = .072)

```
ONEWAY Life_satisfaction Volunteering leeftijd Social_contacts ek13b004 BY occupation
  /STATISTICS DESCRIPTIVES
  /PLOT MEANS
  /MISSING ANALYSIS.
```

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Life_satisfaction	Between Groups	10.367	4	2.592	1.040	.386
	Within Groups	1452.310	583	2.491		
	Total	1462.677	587			
Volunteering Amount of organisations voluntary work has been performed at in the last 12 months	Between Groups	11.150	4	2.788	3.336	.010
	Within Groups	487.100	583	.836		
	Total	498.250	587			
leeftijd Age of the household member	Between Groups	77454.100	4	19363.525	134.946	<.001
	Within Groups	83654.898	583	143.490		
	Total	161108.998	587			
Social_contacts Satisfaction with social contacts	Between Groups	11.424	4	2.856	.831	.506
	Within Groups	2004.855	583	3.439		
	Total	2016.279	587			
ek13b004 How would you describe your health, generally speaking?	Between Groups	33.968	4	8.492	12.410	<.001
	Within Groups	398.949	583	.684		
	Total	432.917	587			

2.5. Model evaluation

The fit of the model is tested using the adjusted R^2, R^2-change, and the F-change. In table 3 it is shown that the R_a^2 of model 4 is 29.4% which is quite strong. 29.4% of the variance in life satisfaction can be explained by the independent variables in the model, having been adjusted for these variables. After the first model of which the variance is extremely low (R_a^2=-0.01%), the variance remains relatively stable in each of the models: model 2 (R_a^2=28.9%), model 3 (R_a^2=29.4%) and the final model 4 (R_a^2=29.4%). The R^2-change indicates how much better the R^2 gets when additional independent variables are added to the model. Adding the control variables to the model shows that more variance can be explained as shown in model 2 (R^2-change=0.294). However, adding the moderator and interaction decreases the explained variance (model 3: R^2-change =0.006; model 4: R^2-change=0.001). This reiterates that the fit of the model does not get better when the moderator and interaction are included. Finally, the F-change tests whether the new model improves upon the previous model. The F-change in model 1 is quite small and not significant (F(1,586)=0.343; p=0.558). The F-change from model 1 to 2 increases which means that adding the control variables to the model is a significant improvement (F(4,582)=60.761; p<0.001). Adding age to the model worsens the model's ability to explain significantly (F(1,581)=5.024; p=0.025). The interaction again decreases the

suitability of the model but not significantly (F(1,580)=1.186, p=0.277). Thus, while models 2 and 3 are a significant improvement on the first model, the fourth model provides little extra information. The remaining model evaluation through assumptions and outliers can be found in appendix 3.

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Life_satisfaction
  /METHOD=ENTER Cvolunteering
  /METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004
  /METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004 Cage
  /METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004 Cage VolXage.
```

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.024[a]	.001	-.001	1.57942	.001	.343	1	586	.558
2	.543[b]	.295	.289	1.33109	.294	60.761	4	582	<.001
3	.549[c]	.301	.294	1.32652	.006	5.024	1	581	.025
4	.550[d]	.302	.294	1.32630	.001	1.186	1	580	.277

a. Predictors: (Constant), Cvolunteering

b. Predictors: (Constant), Cvolunteering, ek13b004 How would you describe your health, generally speaking?, Gender Gender, Occupation Occupation categories, Social_contacts Satisfaction with social contacts

c. Predictors: (Constant), Cvolunteering, ek13b004 How would you describe your health, generally speaking?, Gender Gender, Occupation Occupation categories, Social_contacts Satisfaction with social contacts, Cage

d. Predictors: (Constant), Cvolunteering, ek13b004 How would you describe your health, generally speaking?, Gender Gender, Occupation Occupation categories, Social_contacts Satisfaction with social contacts, Cage, VolXage

2.6. Multivariate analysis

The four models are used to examine the hypotheses. The models give insight into how the regression coefficients change in addition to how the model improves (or not) after adding in new variables. The final model reveals that individuals who volunteer more are less satisfied with their life. However, this effect is extremely small and not significant (b=-0.002; p=0.974). Thus, no support has been found for the first hypothesis: it cannot be said that volunteering more leads to an increase in life satisfaction in immigrants.

The effect of volunteering on life satisfaction decreases when controlling for gender, occupation, social contacts and health (model 1: b=0.041; p=0.558 and model 2: b=0.009; p=0.874). This is likely because social contacts and health have a strong effect on the life satisfaction of immigrants (social contacts: b=0.376; p<0.001 and health: b=0.426; p<0.001).

In model 3 the relationship between moderator age and life satisfaction is tested. By adding the variable, the effect of the other variables on life satisfaction became stronger or weaker, in some cases less significant. This indicates that the model becomes worse upon adding age. This is possibly

due to age being strongly correlated to occupation, gender and health as seen in table 2. Age also has a small significant effect on the life satisfaction of immigrant (*b*=0.008; *p*=0.022). Older immigrants are more satisfied with their lives.

The moderation effect of age on volunteering and life satisfaction is examined in the final model. When tested, the interaction is positive but not significant (*b*=0.005; *p*=0.277). This means that for older immigrants the effect of volunteering on life satisfaction is stronger than with younger immigrants but not significantly. To test the effect for different ages using the centralised variable age, a low, the median and high score were taken and put into the linear regression formula based on the final model (control variables were excluded by scoring them at 0). Through the examination, it is revealed that different ages cause a change in the effect of volunteering on their life satisfaction. Using score -13 to represent a young age, at a young age the effect of volunteering is small and negative on life satisfaction (*b*=-0.0629). Score -1 represents middle age and reveals another negative effect but even smaller than at a young age (*b*=-0.0069). At an older age, represented by score 26, the effect becomes positive and bigger (*b*=0.128). Therefore, at a young age volunteering has a negative effect on life satisfaction, this effect gets smaller as the immigrant gets older until eventually performing more volunteer work leads to an increase in life satisfaction. Nonetheless, the interaction remains unsignificant and thus, there is no support for hypothesis two that older immigrants get more life satisfaction from volunteering, and that this is reflective of the population.

```
*Regression analysis all models.
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Life_satisfaction
  /METHOD=ENTER Cvolunteering
  /METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004
  /METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004 Cage
  /METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004 Cage VolXage.
```

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	7.129	.065		109.455	.000	7.001	7.257		
	Cvolunteering	.041	.071	.024	.586	.558	-.098	.180	1.000	1.000
2	(Constant)	3.359	.277		12.113	<.001	2.814	3.903		
	Cvolunteering	.009	.060	.006	.158	.874	-.108	.127	.997	1.003
	Gender Gender	-.151	.111	-.048	-1.359	.175	-.369	.067	.984	1.016
	Occupation Occupation categories	-.072	.066	-.039	-1.090	.276	-.202	.058	.960	1.042
	Social_contacts Satisfaction with social contacts	.376	.030	.442	12.340	<.001	.316	.436	.946	1.058
	ek13b004 How would you describe your health, generally speaking?	.426	.067	.232	6.408	<.001	.296	.557	.924	1.083
3	(Constant)	3.298	.278		11.879	<.001	2.753	3.843		
	Cvolunteering	.005	.060	.003	.083	.934	-.112	.122	.996	1.004
	Gender Gender	-.122	.111	-.039	-1.100	.272	-.341	.096	.971	1.029
	Occupation Occupation categories	-.062	.066	-.034	-.946	.345	-.192	.067	.955	1.047
	Social_contacts Satisfaction with social contacts	.367	.031	.431	11.986	<.001	.307	.427	.930	1.076
	ek13b004 How would you describe your health, generally speaking?	.459	.068	.250	6.761	<.001	.326	.593	.881	1.135
	Cage	.008	.003	.080	2.242	.025	.001	.014	.937	1.067
4	(Constant)	3.307	.278		11.907	<.001	2.761	3.852		
	Cvolunteering	-.002	.060	-.001	-.031	.975	-.119	.116	.985	1.015
	Gender Gender	-.119	.111	-.037	-1.064	.288	-.337	.100	.970	1.030
	Occupation Occupation categories	-.071	.066	-.038	-1.064	.288	-.201	.060	.943	1.060
	Social_contacts Satisfaction with social contacts	.365	.031	.429	11.889	<.001	.305	.425	.925	1.081
	ek13b004 How would you describe your health, generally speaking?	.462	.068	.251	6.795	<.001	.328	.595	.880	1.136
	Cage	.008	.003	.086	2.375	.018	.001	.015	.917	1.090
	VolXage	.005	.005	.039	1.089	.277	-.004	.014	.951	1.051

a. Dependent Variable: Life_satisfaction

*Analysis low, middle, old age moderation effect.

```
FREQUENCIES VARIABLES=Cage
  /NTILES=4
  /STATISTICS=STDDEV RANGE MINIMUM MAXIMUM MEAN MEDIAN
  /HISTOGRAM
  /ORDER=ANALYSIS.
```

Cage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-33.00	3	.5	.5	.5
	-32.00	7	1.2	1.2	1.7
	-31.00	9	1.5	1.5	3.2
	-30.00	5	.9	.9	4.1
	-29.00	8	1.4	1.4	5.4
	-28.00	5	.9	.9	6.3
	-27.00	7	1.2	1.2	7.5
	-26.00	6	1.0	1.0	8.5
	-25.00	3	.5	.5	9.0
	-24.00	6	1.0	1.0	10.0
	-23.00	5	.9	.9	10.9
	-22.00	6	1.0	1.0	11.9
	-21.00	8	1.4	1.4	13.3
	-20.00	4	.7	.7	13.9
	-19.00	8	1.4	1.4	15.3
	-18.00	8	1.4	1.4	16.7
	-17.00	5	.9	.9	17.5
	-16.00	8	1.4	1.4	18.9
	-15.00	9	1.5	1.5	20.4
	-14.00	8	1.4	1.4	21.8
	-13.00	15	2.6	2.6	24.3
	-12.00	5	.9	.9	25.2
	-11.00	13	2.2	2.2	27.4
	-10.00	10	1.7	1.7	29.1
	-9.00	15	2.6	2.6	31.6
	-8.00	12	2.0	2.0	33.7
	-7.00	11	1.9	1.9	35.5
	-6.00	11	1.9	1.9	37.4
	-5.00	15	2.6	2.6	40.0
	-4.00	12	2.0	2.0	42.0
	-3.00	15	2.6	2.6	44.6
	-2.00	15	2.6	2.6	47.1
	-1.00	18	3.1	3.1	50.2
	.00	10	1.7	1.7	51.9
	1.00	12	2.0	2.0	53.9
	2.00	12	2.0	2.0	56.0
	3.00	13	2.2	2.2	58.2
	4.00	9	1.5	1.5	59.7
	5.00	8	1.4	1.4	61.1
	6.00	12	2.0	2.0	63.1
	7.00	11	1.9	1.9	65.0
	8.00	10	1.7	1.7	66.7
	9.00	11	1.9	1.9	68.5
	10.00	9	1.5	1.5	70.1
	11.00	11	1.9	1.9	71.9
	12.00	14	2.4	2.4	74.3
	13.00	9	1.5	1.5	75.9
	14.00	10	1.7	1.7	77.6
	15.00	12	2.0	2.0	79.6
	16.00	9	1.5	1.5	81.1
	17.00	15	2.6	2.6	83.7
	18.00	12	2.0	2.0	85.7
	19.00	9	1.5	1.5	87.2
	20.00	7	1.2	1.2	88.4
	21.00	12	2.0	2.0	90.5
	22.00	5	.9	.9	91.3
	23.00	5	.9	.9	92.2
	24.00	8	1.4	1.4	93.5
	25.00	2	.3	.3	93.9
	26.00	10	1.7	1.7	95.6
	27.00	3	.5	.5	96.1
	28.00	6	1.0	1.0	97.1
	29.00	1	.2	.2	97.3
	30.00	1	.2	.2	97.4
	31.00	1	.2	.2	97.6
	32.00	3	.5	.5	98.1
	33.00	3	.5	.5	98.6
	34.00	2	.3	.3	99.0
	36.00	2	.3	.3	99.3
	37.00	2	.3	.3	99.7
	39.00	2	.3	.3	100.0
	Total	588	100.0	100.0	

Appendix 3: Assumption control

3.1. Assumption control

3.1.1. Assumption 1

The first assumption assumes that all cases are independent. The Immigrant panel includes households which means that some of the respondents will be related to each other. By violating this assumption any tests are potentially incorrect.

3.1.2. Assumption 2

The second assumption is that there is a linear relationship between the dependent variable and the independent variables. As seen in the scatterplot of the residuals, the residuals are not distributed normally around mean, several lines can be seen which indicates that the variable life satisfaction is not completely continuous. As a consequence, the fit of the model is not as good as would be liked and conclusions not as trustworthy.

3.1.3. Assumption 3

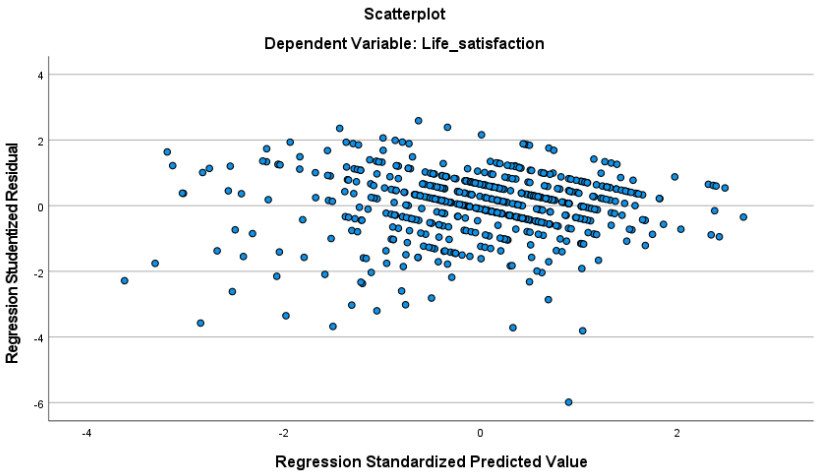
The third assumption states that for every value of the independent variables, the dependent variable has the same conditional standard deviation. In the scatterplot of the residuals, it can be seen that the distribution is not normal. The spread gets smaller as the residual becomes positive and larger in the middle where most points can be found, with some outliers. Therefore, this assumption has been violated meaning that conclusions drawn from the tests and estimates might be incorrect.

3.1.4. Assumption 4

The fourth assumption is that the conditional spread of y is normal. In the PP-plot it can be seen that there are substantial deviations from the line meaning that the data is not distributed normally. The histogram of the studentized residuals, confirms this as it is left-tailed with high peaks around the average and also a potential outlier. Consequently, the confidence intervals and test and following conclusions might be incorrect.

Therefore, as all assumptions have been violated, any conclusions drawn from the data might be inaccurate.

```
*Assumption control.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Life_satisfaction
  /METHOD=ENTER Gender Occupation Social_contacts ek13b004 Cvolunteering Cage VolXage
  /SCATTERPLOT=(*SRESID ,*ZPRED)
  /RESIDUALS HISTOGRAM(ZRESID)
  /SAVE COOK LEVER SRESID DFBETA DFFIT MAHAL.
```




```
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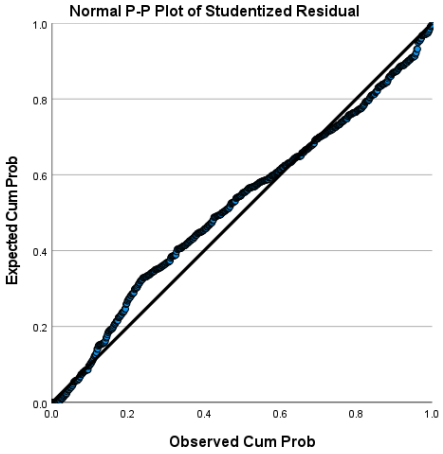
  /NOSTANDARDIZE
  /TYPE=P-P
  /FRACTION=BLOM
  /TIES=MEAN
  /DIST=NORMAL.
```

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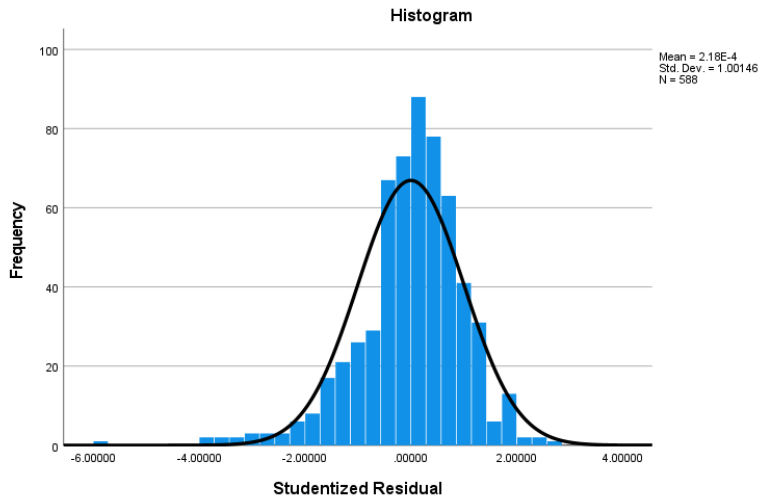
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```



3.2. Control multicollinearity

Multicollinearity is an indicator of a strong correlation between two or more independent variables. It means that there is an overlap between the variables. VIF scores are used to test for multicollinearity, a score above 4 is problematic and indicates that there is an issue with the fit of the model. All of the VIF scores are below 4 meaning that multicollinearity is not an issue in this model.

```
*Regression with VIF.
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Life_satisfaction
  /METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004 Cage VolXage.
```

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	3.307	.278		11.907	<.001	2.761	3.852		
	Cvolunteering	-.002	.060	-.001	-.031	.975	-.119	.116	.985	1.015
	Gender Gender	-.119	.111	-.037	-1.064	.288	-.337	.100	.970	1.030
	Occupation Occupation categories	-.071	.066	-.038	-1.064	.288	-.201	.060	.943	1.060
	Social_contacts Satisfaction with social contacts	.365	.031	.429	11.889	<.001	.305	.425	.925	1.081
	ek13b004 How would you describe your health, generally speaking?	.462	.068	.251	6.795	<.001	.328	.595	.880	1.136
	Cage	.008	.003	.086	2.375	.018	.001	.015	.917	1.090
	VolXage	.005	.005	.039	1.089	.277	-.004	.014	.951	1.051

a. Dependent Variable: Life_satisfaction

3.3. Control outliers

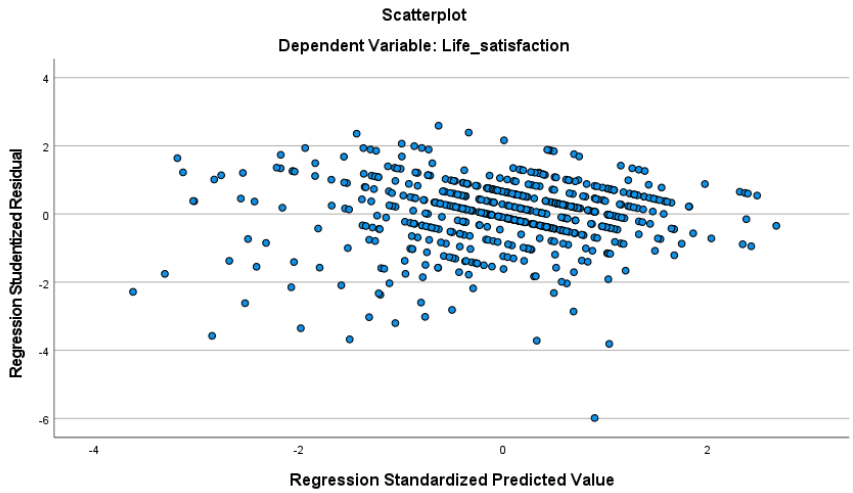
To control whether there are any outliers or influential observations, several analyses are performed. First, leverage indicates how far the observation falls from their mean and how much it pulls on the line. Values larger than 3p/n=0.031 are considered influential, in this case that means 30 observations, 7 of which are highly influential.

The Cook's distance as a product of the studentized residuals and the leverage also indicates influential points. Observations higher than 4/588(n)=0.0068 are potentially a problem, of which there are 36. 5 of these cases can be considered extremely influential of which the highest is 0.069.

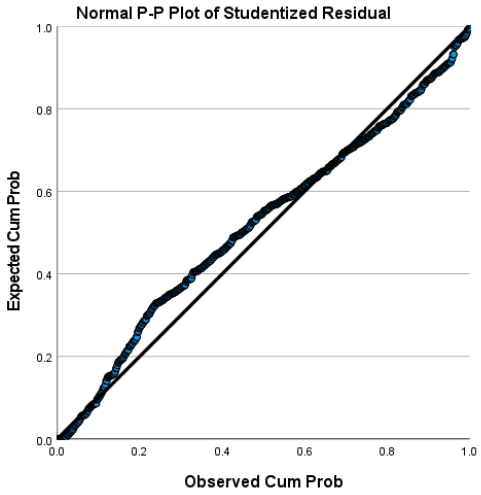
The DFFIT is used to examine the fit of the model through the estimated value of an observation should the highly influential point be removed. There are 11 cases which can be considered large, of which the biggest is 0.539. The DFBETA analyses the effect observations have on the estimated parameter when a certain observation is removed. The change in the standardised regression coefficient is shown, in which larger number highlights a bigger influence on the coefficient. In volunteering there are seven values which could be considered large, of which 0.038 is the largest. Age has three large values, the largest being: 0.001. Gender's only large value is -0.016. In social contacts there are three deviations: 0.013, .012 and -0.009. The variable occupation has 6 values which are considered large, the largest being 0.178. The largest and only deviating value found in health was: -0.015. When positive values are removed the estimated parameter increases, negative values therefore lead to a decrease in the parameter. A consequence of the large number of influential values is that the conclusions being drawn are also highly influenced by these values. Additionally, having examined the spread of the studentized residuals which show a clear pattern in the histogram, any studentized residuals values above 2 or below -2 are examined instead of above 3 or below -3. There are 27 residuals that are considered influential, the highest being: -5.986.

There are 15 cases that are far removed from the average according to the Mahalabonis-distance. The Mahalabonis-distance gives the distance of the point from the average on one or more of the independent variables. The further the distance, the larger the indication that it the observation is an outlier.

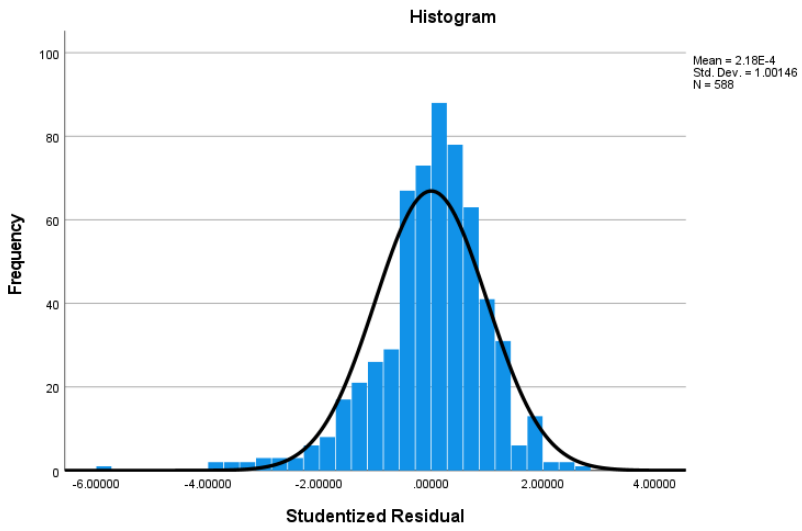
```
*Assumption control.
REGRESSION
 /MISSING LISTWISE
 /STATISTICS COEFF OUTS CI(95) R ANOVA CHANGE
 /CRITERIA=PIN(.05) POUT(.10)
 /NOORIGIN
 /DEPENDENT Life_satisfaction
 /METHOD=ENTER Gender Occupation Social_contacts ek13b004 Cvolunteering Cage VolXage
 /SCATTERPLOT=(*SRESID ,*ZPRED)
 /RESIDUALS HISTOGRAM(ZRESID)
 /SAVE COOK LEVER SRESID DFBETA DFFIT MAHAL.
```




```
PPLOT
  /VARIABLES=SRE_1
  /NOLOG
  /NOSTANDARDIZE
  /TYPE=P-P
  /FRACTION=BLOM
  /TIES=MEAN
  /DIST=NORMAL.
```




```
FREQUENCIES VARIABLES=SRE_1
  /FORMAT=NOTABLE
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```



3.4. Removing residuals

Having examined the spread of the studentized residuals, any studentized residuals values above 2 or below -2 are examined. There was a group that scored lower than -2 or above 2, seen in the histogram of studentized residuals in the assumption control. There are 27 residuals that are considered influential, the highest being: -5.986. As these cases are highly influential an analysis was performed after removing them to look into how these residuals influence the conclusions drawn and how big their effect was. The variance that can be explained in the final model increases by 3.3% (R_a^2=32.7%). The regression coefficients are also affected by the extreme residuals. The slope of volunteering becomes positive and stronger but is still not significant (*b*=0.027; *p*=0.576). This means that volunteering at more organisations would lead to an increase in life satisfaction rather than a decrease. Moreover, age while previously only significant at α<0.05 is now significant at α<0.01 (*b*=0.009; *p*=0.001).

The first assumption is still being violated. The second and third assumptions are also still being violated, evident in the still abnormal distribution. The fourth assumption, however, is now being met. The PP-plot shows only very small deviations, and the histogram shows that the spread is now much more normal. However, there has not been any just cause found for removing all of these residuals meaning they cannot be removed from the dataset.

```
*Analysis without residuals.
FILTER OFF.
USE ALL.
SELECT IF  ((SRE_1<2) AND (SRE_1>-2)).
EXECUTE.

REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE
```

```
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT Life_satisfaction
/METHOD=ENTER Cvolunteering
/METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004
/METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004 Cage
/METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004 Cage VolXage.
```

Descriptive Statistics

	Mean	Std. Deviation	N
Life_satisfaction	7.2888	1.27281	561
Cvolunteering	-.0025	.92148	561
Gender Gender	.5419	.49869	561
Occupation Occupation categories	.6827	.85932	561
Social_contacts Satisfaction with social contacts	6.9750	1.79565	561
ek13b004 How would you describe your health, generally speaking?	3.08	.845	561
Cage	-.0891	16.72528	561
VolXage	.6326	12.12143	561

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.049[a]	.002	.001	1.27241	.002	1.352	1	559	.245
2	.567[b]	.321	.315	1.05318	.319	65.236	4	555	<.001
3	.578[c]	.334	.327	1.04436	.013	10.413	1	554	.001
4	.579[d]	.335	.327	1.04432	.001	1.035	1	553	.309

a. Predictors: (Constant), Cvolunteering

b. Predictors: (Constant), Cvolunteering, Gender Gender, ek13b004 How would you describe your health, generally speaking?, Occupation Occupation categories, Social_contacts Satisfaction with social contacts

c. Predictors: (Constant), Cvolunteering, Gender Gender, ek13b004 How would you describe your health, generally speaking?, Occupation Occupation categories, Social_contacts Satisfaction with social contacts, Cage

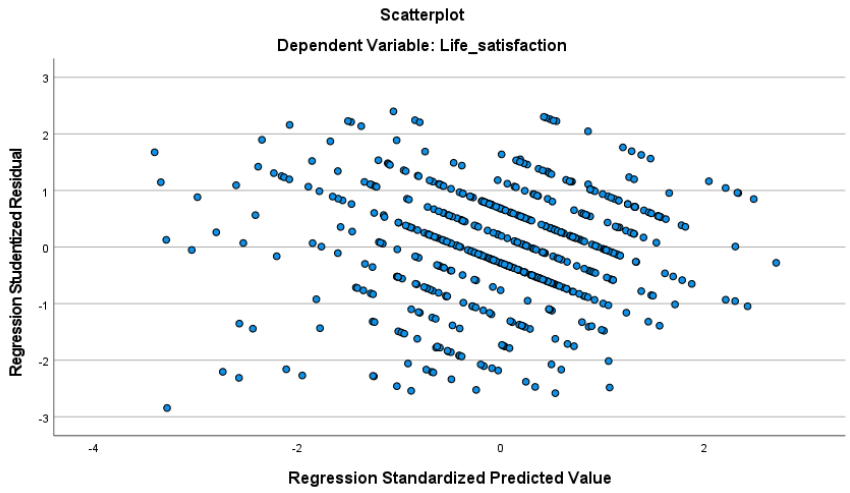
d. Predictors: (Constant), Cvolunteering, Gender Gender, ek13b004 How would you describe your health, generally speaking?, Occupation Occupation categories, Social_contacts Satisfaction with social contacts, Cage, VolXage

Coefficients[a]

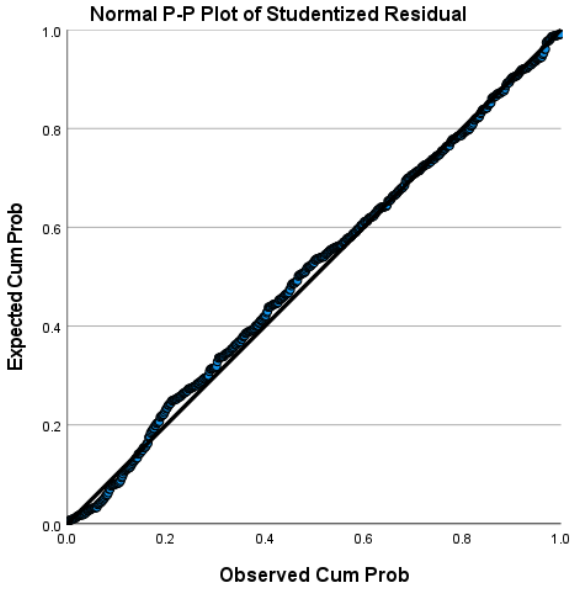
Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	7.289	.054		135.681	.000	7.183	7.394		
	Cvolunteering	.068	.058	.049	1.163	.245	-.047	.182	1.000	1.000
2	(Constant)	4.087	.232		17.593	<.001	3.630	4.543		
	Cvolunteering	.038	.048	.028	.791	.430	-.057	.133	.996	1.004
	Gender Gender	-.145	.090	-.057	-1.618	.106	-.322	.031	.989	1.012
	Occupation Occupation categories	-.092	.053	-.062	-1.750	.081	-.196	.011	.963	1.039
	Social_contacts Satisfaction with social contacts	.335	.025	.473	13.195	<.001	.285	.385	.951	1.052
	ek13b004 How would you describe your health, generally speaking?	.326	.055	.216	5.964	<.001	.219	.433	.928	1.077
3	(Constant)	4.021	.231		17.392	<.001	3.567	4.476		
	Cvolunteering	.033	.048	.024	.688	.492	-.061	.127	.995	1.005
	Gender Gender	-.112	.090	-.044	-1.251	.211	-.288	.064	.976	1.025
	Occupation Occupation categories	-.081	.052	-.055	-1.545	.123	-.184	.022	.958	1.043
	Social_contacts Satisfaction with social contacts	.324	.025	.457	12.742	<.001	.274	.374	.933	1.072
	ek13b004 How would you describe your health, generally speaking?	.364	.055	.242	6.567	<.001	.255	.473	.886	1.129
	Cage	.009	.003	.116	3.227	.001	.003	.014	.935	1.070
4	(Constant)	4.025	.231		17.407	<.001	3.571	4.480		
	Cvolunteering	.027	.048	.020	.560	.576	-.068	.122	.980	1.020
	Gender Gender	-.109	.090	-.043	-1.219	.223	-.285	.067	.975	1.026
	Occupation Occupation categories	-.087	.053	-.059	-1.655	.099	-.191	.016	.945	1.058
	Social_contacts Satisfaction with social contacts	.323	.025	.456	12.687	<.001	.273	.373	.931	1.074
	ek13b004 How would you describe your health, generally speaking?	.366	.055	.243	6.590	<.001	.257	.475	.885	1.130
	Cage	.009	.003	.118	3.277	.001	.004	.014	.932	1.073
	VolXage	.004	.004	.036	1.017	.309	-.004	.011	.964	1.037

a. Dependent Variable: Life_satisfaction

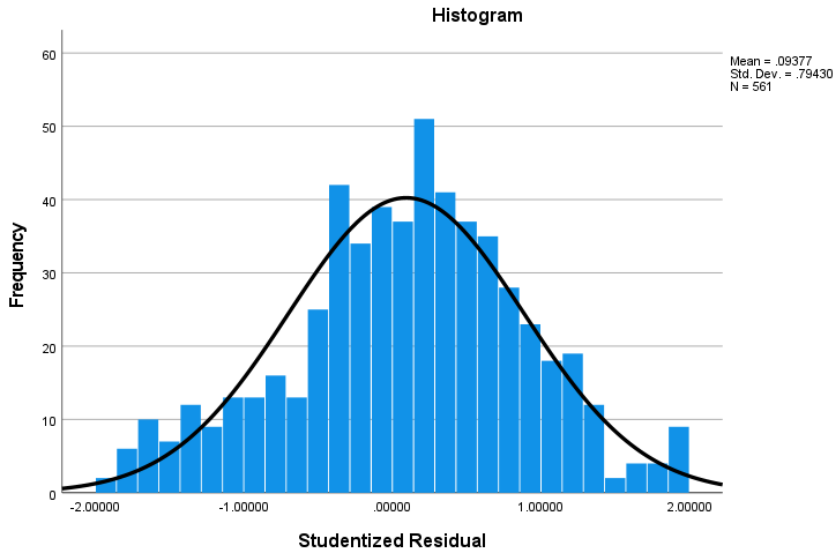
```
*Assumption control.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Life_satisfaction
  /METHOD=ENTER Gender Occupation Social_contacts ek13b004 Cvolunteering Cage VolXage
  /SCATTERPLOT=(*SRESID ,*ZPRED)
  /RESIDUALS HISTOGRAM(ZRESID)
  /SAVE COOK LEVER SRESID DFBETA DFFIT MAHAL.
```




```
PPLOT
  /VARIABLES=SRE_1
  /NOLOG
  /NOSTANDARDIZE
  /TYPE=P-P
  /FRACTION=BLOM
  /TIES=MEAN
  /DIST=NORMAL.
```




```
FREQUENCIES VARIABLES=SRE_1
  /FORMAT=NOTABLE
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```



3.5. Removing systematic deviations

There were 22 observations which systematically deviated in several of the outlier analyses. These observations scored very high or low on at least two of the control analyses and therefore highly influence either the fit of the model or the coefficients. Removing the cases results in occupation (*b*=-0.146; *p*=0.020) and the interaction becoming significant at α<0.05 (*b*=0.015; *p*=0.014). In addition, age is now also significant at α<0.01 (*b*=0.011; *p*<0.001).

Thus, removing the outliers means that these variables now fit better with the data. The other slopes also increase of decrease slightly but not significantly. The R_a^2 of model 4 has improved a little from 29.4% to 31.8%, which is still quite high. This means that more variance in y can be explained and therefore, the fit of the model has improved slightly. The F-change score is now not only significant in models 2 and 3 but also 4. Models 2 (*F*(4,561)=61.428; *p*<0.001) and 3 (*F*(1,560)=7.130; *p*=0.008) are significant at α<0.01. Model 4 is significant at α<0.05 (*F*(1,559)=6.061; *p*=0.014). Nonetheless, we are not allowed to remove outliers without just cause.

```
*Analysis without outliers.
FILTER OFF.
USE ALL.
SELECT IF (nomem_encr ~= 873629 & nomem_encr ~= 826058 & nomem_encr ~= 811886 &
nomem_encr ~= 831436 & nomem_encr ~= 810403 & nomem_encr ~= 877072
   & nomem_encr ~= 821966 & nomem_encr ~= 867596 & nomem_encr ~= 802371 & nomem_encr
~= 861318 & nomem_encr ~= 830850 & nomem_encr ~= 865426
   & nomem_encr ~= 836953 & nomem_encr ~= 848504 & nomem_encr ~= 815243 & nomem_encr
~= 864202 & nomem_encr ~= 887203 & nomem_encr ~= 807949
   & nomem_encr ~= 825573 & nomem_encr ~= 871869 & nomem_encr ~= 848211 & nomem_encr
~= 860650).
EXECUTE.
```

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Life_satisfaction
  /METHOD=ENTER Cvolunteering
  /METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004
  /METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004 Cage
  /METHOD=ENTER Cvolunteering Gender Occupation Social_contacts ek13b004 Cage VolXage.
```

Descriptive Statistics

	Mean	Std. Deviation	N
Life_satisfaction	7.1649	1.47166	567
Cvolunteering	-.0825	.67955	567
Gender Gender	.5414	.49872	567
Occupation Occupation categories	.6543	.80879	567
Social_contacts Satisfaction with social contacts	6.9312	1.78644	567
ek13b004 How would you describe your health, generally speaking?	3.08	.843	567
Cage	-.0247	16.59620	567
VolXage	.2566	8.86738	567

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.033[a]	.001	-.001	1.47218	.001	.603	1	565	.438
2	.553[b]	.305	.299	1.23204	.304	61.428	4	561	<.001
3	.560[c]	.314	.307	1.22536	.009	7.130	1	560	.008
4	.567[d]	.321	.313	1.21986	.007	6.061	1	559	.014

a. Predictors: (Constant), Cvolunteering

b. Predictors: (Constant), Cvolunteering, Gender Gender, ek13b004 How would you describe your health, generally speaking?, Occupation Occupation categories, Social_contacts Satisfaction with social contacts

c. Predictors: (Constant), Cvolunteering, Gender Gender, ek13b004 How would you describe your health, generally speaking?, Occupation Occupation categories, Social_contacts Satisfaction with social contacts, Cage

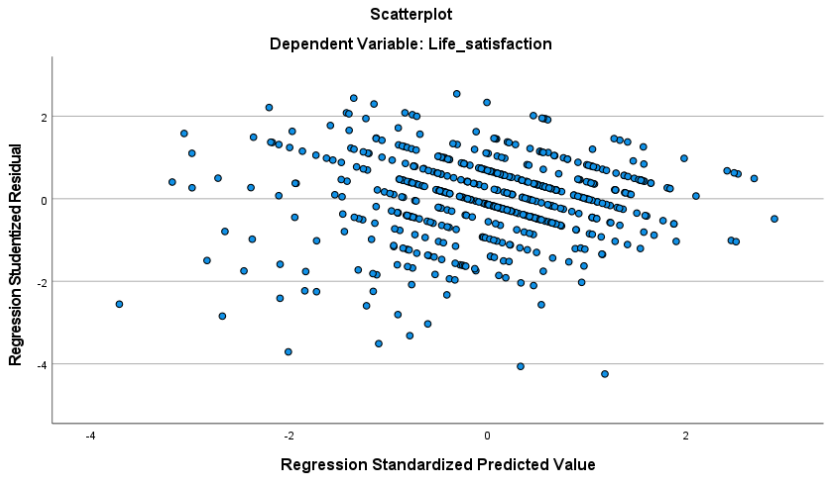
d. Predictors: (Constant), Cvolunteering, Gender Gender, ek13b004 How would you describe your health, generally speaking?, Occupation Occupation categories, Social_contacts Satisfaction with social contacts, Cage, VolXage

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	7.171	.062		115.137	.000	7.048	7.293		
	Cvolunteering	.071	.091	.033	.776	.438	-.108	.250	1.000	1.000
2	(Constant)	3.479	.269		12.927	<.001	2.950	4.007		
	Cvolunteering	-.034	.077	-.016	-.444	.657	-.184	.116	.992	1.008
	Gender Gender	-.094	.105	-.032	-.901	.368	-.300	.111	.987	1.014
	Occupation Occupation categories	-.160	.065	-.088	-2.465	.014	-.288	-.033	.969	1.032
	Social_contacts Satisfaction with social contacts	.369	.030	.448	12.386	<.001	.311	.428	.945	1.058
	ek13b004 How would you describe your health, generally speaking?	.416	.063	.238	6.555	<.001	.291	.540	.938	1.066
3	(Constant)	3.406	.269		12.660	<.001	2.878	3.935		
	Cvolunteering	-.040	.076	-.018	-.521	.603	-.189	.110	.991	1.009
	Gender Gender	-.060	.105	-.020	-.575	.566	-.266	.146	.972	1.029
	Occupation Occupation categories	-.149	.065	-.082	-2.303	.022	-.277	-.022	.965	1.036
	Social_contacts Satisfaction with social contacts	.360	.030	.437	12.073	<.001	.302	.419	.933	1.072
	ek13b004 How would you describe your health, generally speaking?	.451	.064	.259	6.999	<.001	.325	.578	.898	1.114
	Cage	.009	.003	.096	2.670	.008	.002	.015	.941	1.063
4	(Constant)	3.405	.268		12.712	<.001	2.879	3.931		
	Cvolunteering	-.060	.076	-.028	-.792	.429	-.210	.089	.979	1.022
	Gender Gender	-.048	.104	-.016	-.461	.645	-.253	.157	.970	1.031
	Occupation Occupation categories	-.164	.065	-.090	-2.533	.012	-.292	-.037	.957	1.045
	Social_contacts Satisfaction with social contacts	.358	.030	.435	12.056	<.001	.300	.417	.932	1.073
	ek13b004 How would you describe your health, generally speaking?	.455	.064	.261	7.093	<.001	.329	.581	.897	1.114
	Cage	.011	.003	.128	3.362	<.001	.005	.018	.831	1.203
	VolXage	.015	.006	.092	2.462	.014	.003	.028	.864	1.158

a. Dependent Variable: Life_satisfaction

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA CHANGE
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Life_satisfaction
  /METHOD=ENTER Gender Occupation Social_contacts ek13b004 Cvolunteering Cage VolXage
  /SCATTERPLOT=(*SRESID ,*ZPRED)
  /RESIDUALS HISTOGRAM(ZRESID)
  /SAVE COOK LEVER SRESID DFBETA DFFIT MAHAL.
```




```
PPLOT
  /VARIABLES=SRE_1
  /NOLOG
  /NOSTANDARDIZE
  /TYPE=P-P
  /FRACTION=BLOM
  /TIES=MEAN
  /DIST=NORMAL.
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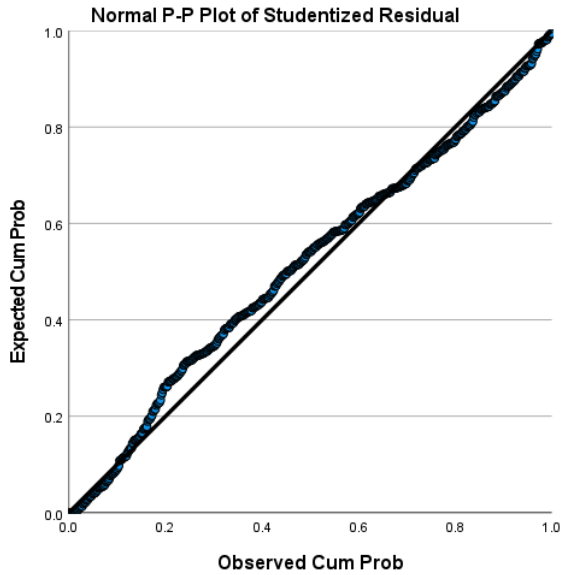


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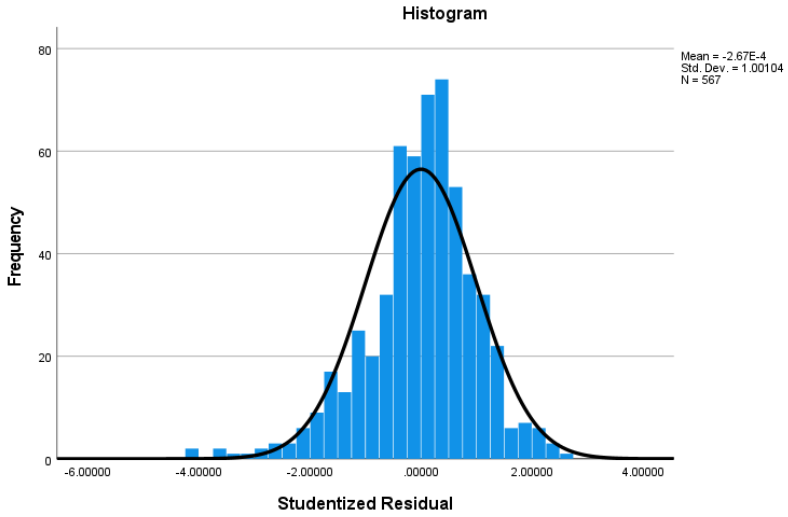
FREQUENCIES VARIABLES=SRE_1
  /FORMAT=NOTABLE
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```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Std. Dev. = 1.00104
N = 567
Frequency
80
60
40
20
0
-6.00000
-4.00000
-2.00000
.00000
2.00000
4.00000
Studentized Residual