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Master's Thesis

The factors influencing the well-being of elderly people in Europe

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We have written this master's thesis independently. All viewpoints of other authors, literary sources and data from elsewhere used for writing this paper have been referenced.


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Abstract

The aim of this paper is to explore the factors that affect the well-being of the individuals aged 50 years and over. Recent studies have found that the most significant contributors to a higher well-being and life satisfaction are health status and income level. However, there are very few studies that include social indicators which are also crucial in defining individuals' well-being. Using the newer version of the data from the Survey of Health, Ageing, and Retirement in Europe (SHARE), we first look at income- and health- related inequalities in well-being and later we investigate the effect of social indicators on individuals' well-being. The results suggest that the significance and the scale with which social indicators affect the level of well-being varies substantially across European countries.

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1. Introduction

Population aging has been one of the most important issues on the agenda of European countries in recent decades. The effect of population boom after the second world war slowed down in early 70s, and there were no significant spikes in population in later years. Lower fertility rates and higher life expectancy in many developed countries can contribute to the aging of the population (McDonald & Kippen, 2000; Weil, 1997), which explains very high average age of the population especially in Western European countries. For example, the median age in Germany stood at 45.7 in 2020. Many potential solutions have been proposed to mitigate the issue of massive pension payouts that is weighing heavily on European countries' public finances. Some economists propose to put through policies that might increase fertility such as family support funds and elderly participating in labor force (Bijak & Kupiszewska & Kupiszewski, 2008; Camarota, 2005). While others consider that gradual immigration will help to "rejuvenate" the aging population (Alho, 2008; Lanzieri, 2013).

One of the apparent and obvious determinants of ageing process are growing health issues, which determine the level of life satisfaction, along with the cognitive and physical slowdown. However, individuals' health status cannot be similar for the entire age group, especially for elderly population, for whom the pace of accumulating health issues differs significantly (Mitnitski et al. 2017). The difference in the level of well-being or life satisfaction in the same age group may be explained by the heterogeneity of their health status, as well as income or lifestyle. Thus, analyzing the effects of the different aspects on the well-being of entire interest group (with smaller groupings, e.g.: 50-59, 60-69, etc.) might yield better explanations rather than looking at the same age across all determinants. Consequently, separating individuals by gender would also signal whether there are differences on the level of well-being not only across age groups, but also between gender groups.

The main aim of our study is to list the most important factors contributing to the well-being of elderly population across European countries. Thus, apart from obvious and straightforward contributors such as health and income this study will also break down other components resulting in inequalities in the level of life satisfaction among different demographics and across

countries with different structures. That should provide a valuable insight to the governments intending to reduce such inequalities.

Similar studies have been carried out in recent years. Sohler (2019) studies well-being of older employees and retirees making emphasis on involuntary employment. This study concludes that well-being of elderly increases after retirement, specifically for workers with low quality jobs or involuntary workers. Calvo, Haverstick & Sass (2009) analyze the happiness of retirees regarding the nature of retirement: gradual or abrupt retirement. They conclude that what matters is the retirement being chosen or forced regardless the type of retirement. Sand (2018) studies the well-being of elderly in Europe with emphasis on immigrant population, and concludes that inflows of immigrants, even if small number, might worsen well-being of native elderly, especially when the event is magnified by the media. Lastly, Ryser, Weaver and Goncalves (2018) study the inequalities in health and life satisfaction of elderly population in Europe.

A summary of factors influencing well-being is given, and the term “subjective well-being” is introduced in this section. The second section provides a brief overview of the dataset used in this study, along with the list and description of variables used in the econometric models and the review of the structure of these models. Section three gives a summary of results for econometric models introduced in section two. The final section concludes and signals to the further research questions to be addressed as a result of this study.

Factors influencing well-being

When deciding on the factors that contribute to the well-being of the population one needs to take into account subjectivity of the matter as well. To study the subjective well-being of the population, it is important to focus on person-related characteristics across countries rather than accounting for institutional or structural conditions. Person-related characteristics may include individual health, age and gender, economic resources, psychological factors and social networks as the main determinants of a subjective well-being. Apart from objective well-being, by studying subjective well-being, we will get much clearer idea of well-being and self-perceived quality of life of elderly across Europe.

According to several studies, individuals' well-being is mainly defined by health, income, and social behavior (De Neve, Diener & Tay, 2013). These aspects are positively correlated with well-being, whereas, social and material deprivation negatively affect individuals' happiness. The individuals utilize less health care or depend less on welfare when the level of happiness is high (Ivlevs, 2014).

Theoretically, wealth should have a positive correlation with well-being, because more resources give people more ability to achieve some of their goals and also, they would have a higher social status. Emmons (1986) states that possessing a high income is the main goal of a larger group of people in the world because accomplishing that goal is a predictor of social well-being (Emmons, 1986). From this point of view, individuals with greater income should have higher social well-being.

However, according to other studies, in relativistic model of well-being, people adapt to their level of income and wealth has little long-term effect to well-being. Easterlin (1974) argues that people compare their income with the people that are around them, so it means that differences between nations in income makes no difference on their well-being. He further argues that income makes difference relatively to what people nearby are earning not between nations.

In his study Van Praag (1993) was concentrated more on the welfare function in which people describe their level of income as "bad", "adequate", "excellent" and so on. During this study he found out that the wealthier the person was the more money he needed to call an income as sufficient. Van Praag estimates that up to 80 percent of the benefit that they would get from an increase in their income goes away because of the rising welfare function.

In an article by Sheldon, Ryan and Reis (1996), it was shown that satisfaction of two basic human needs, such as competence and autonomy, affect emotional well-being. Also, voluntary work contributes to lower psychological distress, and buffers the negative consequences of different stressors (Rietschlin, 1998), and it increases life satisfaction and decreases depression (Van Willigen, 1998) which bring to higher well-being.

Previously mentioned studies analyze the contribution of different factors to the individuals' well-being. Apart from income level and health status, this study also includes demographics and

social indicators in studying the well-being. The next paragraphs shed a light into the subjective well-being in social sciences research.

Subjective well-being (SWB)

Individuals' self-assessment of their life quality defines the SWB (Ormel, Lindenberg, Steverink & Verbrugge, 1999). The assessment of the level of life satisfaction varies across people and it is a very subjective matter. Considering that, subjectively high levels of life satisfaction and a positive state of mind characterize the good well-being (Cummins, Lau & Strokes, 2004). Positive mental states that are determined subjectively constitute a hedonic view of well-being. Since researchers in psychology differentiate the notion of well-being between hedonic and eudaimonic, objectively good experiences constitute eudaimonic well-being. While hedonic well-being is related to pleasure and happiness, eudaimonic well-being is related to determination, motivation, autonomy, and purpose in life (Clark, Frijters & Shields, 2008; Ryan & Deci, 2001).

Social Production Function Theory says for SWB-relevant factors that they are set during the course of life. Ormel, Lindenberg and Steverink (1999) integrate the psychological approach with economic theoretical approaches. They argue that individuals "create" their own well-being, which is a function of physical well-being (e.g., lack of basic needs, security) and social well-being (e.g., relationships, status, friends) and dependent on individual and structural resources. At the individual level, the most significant resources and boundaries are education, social ties, income and health.

Another variable that can potentially influence SWB is a cultural one. Individualism-collectivism (Triandis, 1989), which is also named as independence-interdependence (Markus & Kitayama, 1991). In individualistic societies, people orientation is towards their personal goals and desires, and they perceive the single individual as the primary and basic unit of society. In contrast to individualism, collectivists have the group as of primary importance and their biggest attention is on achieving the group goals.

The significance of social indicators and their difference in studying well-being across European countries are closely analyzed in final part of results section. We can see how the social structure in different countries indicate to discrepancy between individualistic and family-oriented societies in formation of the level of well-being. The following paragraphs briefly mention the notion of life satisfaction as part of generic understanding of well-being.

Life satisfaction (LS) as part of well-being

Life satisfaction (LS) is partially captured in well-being described previously. LS variable exists in the data from the Survey of Health, Ageing, and Retirement in Europe (SHARE), which will be briefly used in our study to analyze the well-being of the elderly across European countries. This metric is measured by scaling the individuals' evaluation of their life, by collecting responses to questions, such as: "How satisfied are you with your life?".

Since life satisfaction component is frequently documented in psychological and sociological research, it is a reliable indicator to be used in a study such as this. By looking at individuals' life satisfaction, it is possible to construct a detailed breakdown of the processes that lead to the corresponding level of well-being. However, since life satisfaction is partially represented in well-being, it will not be used in core econometric models.

According to a study by Blanchflower and Oswald (2008), life satisfaction is U-shaped over the life cycle, where the lowest levels are considered to be between 45 and 65 years of age. Consequently, it is documented that the individuals' well-being is higher at older ages (Diener & Suh, 1997). Our study utilizes the dataset with observations for the age group 50+, thus, it would be vital to compare age groups 50-64 and 65+ to test the stated hypothesis.

Next paragraphs look into the process of accumulating well-being, and emphasize the importance of healthcare system and the socio-economic environment. For instance, in countries with lower inequality in income and access to healthcare system, individuals tend to accumulate higher "stock" of well-being.

Cumulative Advantage/Disadvantage

One of the most studied topics in gerontology is Cumulative Advantage/Disadvantage (CAD) theory. Using the CAD framework, an individual's well-being can be described as the pile of cumulative processes over the life cycle (Dannefer, 2003). Life satisfaction among the individuals of the same age group varies due to different circumstances that they face earlier in life. Apparently, people faced with lower social advantages, poor health and socioeconomic status accumulate lower levels of well-being.

If we consider individuals trying to maximize their well-being, then we may as well consider corresponding constraints. These constraints also vary among individuals, and have different effects on accumulation of life satisfaction over the life cycle. According to a study by Hsu (2012), the main predictors of higher cumulative life satisfaction for elderly are economic satisfaction, social support, better physical and psychological health, and having higher education.

Another component in the process of well-being build up is relativity of the matter. Individuals may be socioeconomically advantageous compared to some group of people, however, may have a lower well-being perception due to the relatively higher socioeconomic status of their peers that they look up to or compare themselves with. In that case, it might lead to cumulative disadvantage with lower levels of life satisfaction and well-being.

To sum up, this study replicates previous articles that analyze the contribution of health and income to the well-being of elderly population. It further includes other socio-economic variables into the model, and lastly it looks into possible social structure differences across European countries by indicating the significance of social indicators affecting the well-being.

In the next section, we provide a summary of the data and methodology to be used in studying significant factors influencing well-being as discussed in the first section.

2. Data

In our research paper we use samples from Survey of Health Aging and Retirement in Europe (SHARE) database. We use specifically 2 waves from different years in our analysis: Wave 6 from 2015 and Wave 7 from 2017. SHARE database is updated periodically by conducting survey across 29 countries in Europe. It contains more than 350000 observations from total of 7 waves. Here, we analyze samples from Wave 6 for 19 and from Wave 7 for 27 European countries.

The 27 countries from the dataset are the following:

Austria (AT), Belgium (BE), Bulgaria (BG), Croatia (HR), Cyprus (CY), Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Germany (DE), Greece (GR), Hungary (HU), Israel (IL), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Poland (PL), Portugal (PT), Romania (RO), Slovakia (SK), Slovenia (SI), Spain (ES), Sweden (SE), Switzerland (CH).

Variables

The variables are grouped in different categories such as: Demographics, social network and closeness, health status, employment status, income, etc. Out of complete list of variables in the dataset we are only using the variables that can have significant influence on the well-being of the elderly people.

Demographics category contains demographic information about respondents' country of birth, age, education and marital status. Age category contains the age of the person at the time of the interview. Age groups are 50-59, 60-69, 70-79 and 80+. Years of education gives us the number of years the person has spent in school and university. Marital status shows if the person is married, single, divorced etc.

Socioeconomic indicators include employment status that indicates if the person is employed, retired, unemployed etc., and household income, that includes the level of the income for entire

household. The variable “makes ends meet” indicates to the level of efforts that is needed to make ends meet, with different levels from “easily” to “with great difficulty”.

The well-being variable is each individual’s subjective assessment of quality of life and well-being. It is measured according to the respondents’ personal assessment on a scale of 12 to 48. In SHARE dataset, overall well-being is expressed in “casp” measure, which encompasses multidimensional measure of quality of life extracted from responses to 12 questions about Control, Autonomy, Self-Realization and Pleasure (Hyde, Higgs, Wiggins, & Blane, 2015). Each question has response values from 1 to 4 (1-least to 4-highest positive) which sums up to the range of lowest (12) to the highest well-being level of 48.

Health status captures each individual’s self-perceived health. The response to the question of “How would you say your health is?” has 5 levels, which are: poor, fair, good, very good and excellent. On a scale of 1 to 5, 5 is “excellent”.

For the summary of social indicators, we use variables such as social network satisfaction, scale of social connectedness and the size of social network. Assessment of social network size is made on a scale of 0-7, social network satisfaction is measured on a scale of 0-10 (10 = very satisfied), and social network scale measures connectedness (from low to high connectedness).

We also include child proximity, frequency of contact to child (visits) and emotional closeness to child to analyze inter-regional differences. Child proximity has levels: in the same building, less than 1 km away, etc. Child closeness (emotional) is measured according to responses: extremely close, very close, etc. “Child contact” variable is measured by collecting responses to the question of frequency of visits and meetings with their children such as: daily, several times a week, etc.

Data summary overview and well-being models

Data summary overview provides descriptive statistics for the variables, such as well-being, income, health status, etc., to be used in regression models and in constructing concentration indices for income and health.

Also, country rankings are provided separately for average well-being and life-satisfaction for the complete dataset. Further, concentration indices are estimated separately for all countries in the study sample. Income- and health- related inequalities in well-being are considered in closer intercountry analysis. Concentration indices (CI) are measured to rank countries by the level of inequality in one variable (income or health) over the distribution of another variable (well-being). This measure of CI is based on measures proposed by Kakwani et al. (1997), Clarke et al. (2002) and Erreygers et al. (2009).

Lastly, regression analyses are conducted to estimate the direction of the variables in contributing to individuals' well-being across European countries. Three regression models are utilized in this paper.

The first well-being model is presented by the following equation:

$$WB_i = \alpha_i + \beta_1 AGE_i + \beta_2 GE_i + \beta_3 MS_i + \beta_4 ES_i + \beta_5 EDU_i + \beta_6 HS_i + \beta_7 INC_i + \beta_8 MEM_i + \epsilon_i$$

Where the variables are:

WB	Well-being (on a scale of 12-48)
AGE	Age groups: 50-59; 60-69; 70-79; 80-, reference category is [50-59)
GE	Gender, reference group is "male"
MS	Marital status (divorced, single, widowed, etc.), reference category is "married"
ES	Employment status (employed, retired, etc.), reference category is "retired"
EDU	Years spent in education
HS	Health status (good, very good, excellent, etc.), reference group is "excellent"
INC	Household income
MEM	Makes ends meet (easily, with some difficulty, etc.), reference group is "with great difficulty"

This model investigates the effect of listed variables on well-being in 27 European countries from Wave 7 of SHARE dataset. Estimation results are tested for robustness and robust standard errors are used in results table.

For the second model, Fixed Effects (FE) model is estimated for the merged dataset for 2015-2017. A complete analysis is conducted by controlling country specific effects, and also controlling for time-invariant variables.

The FE model is presented by:

$$\mathbf{WB}_{it} = \beta_1\mathbf{AGE}_{it} + \beta_2\mathbf{MS}_{it} + \beta_3\mathbf{ES}_{it} + \beta_4\mathbf{EDU}_{it} + \beta_5\mathbf{HS}_{it} + \beta_6\mathbf{INC}_{it} + \beta_7\mathbf{MEM}_{it} + \theta_{ct} + \varepsilon_{it}$$

Where the variables are:

WB	Well-being (on a scale of 12-48)
AGE	Age groups: 50-59; 60-69; 70-79; 80-, reference category is [50-59)
MS	Marital status (divorced, single, widowed, etc.), reference category is “married”
ES	Employment status (employed, retired, etc.), reference category is “retired”
EDU	Years spent in education
HS	Health status (good, very good, excellent, etc.), reference group is “excellent”
INC	Household income
MEM	Makes ends meet (easily, with some difficulty, etc.), reference group is “with great difficulty”
θ	To control for country specific trends in well-being over time

The resulting fixed effects model is compared and tested against simple OLS and random effects models to decide on the robust model.

The last model analyzes significance of social factors in determining well-being of elderly population. The regression model compares the magnitude of social network size, scale and satisfaction among countries, along with variables concerning emotional closeness to children.

$$\mathbf{WB}_i = \alpha_i + \beta_1\mathbf{SNST}_i + \beta_2\mathbf{SNSZ}_i + \beta_3\mathbf{SNSC}_i + \beta_4\mathbf{CHP}_i + \beta_5\mathbf{CHCL}_i + \beta_6\mathbf{CHCT}_i + \varepsilon_i$$

Where the variables are:

WB	Well-being (on a scale of 12-48)
SNST	Social network satisfaction, satisfaction with personal network (on a scale of 0-10)

SNSZ	Social network size (on a scale of 0-7)
SNSC	Social network scale, scale of social connectedness (from lower to higher connectedness)
CHP	Child proximity (in the same house/building, less than 1 km away, etc.)
CHCL	Child closeness (extremely close, very close, etc.)
CHCT	Child contact (daily, several times a week, etc.)

This model closely investigates and sheds light into intercountry differences of the effects social indicators have on well-being. The necessary tests are carried out to challenge the robustness of the resulting metrics.

The next section provides results overview and comments for the data summary and regression models discussed until now.

3. Results

Descriptive statistics

In subsequent tables (Table 1, 2&4), for convenience, the results of only 6 countries out of total 27 are presented. The complete tables are included in the Appendix.

Table 1 (Table 1.1 in appendix) provides a summary for descriptive statistics for Life satisfaction (LS), Well-being (WB) and the factors affecting well-being from dataset such as Marital, Health and Employment statuses. Average WB is the highest in DK, SE, AT, LU and CH. Lower mean WB is seen in GR, RO, BG and LT.

Table 1. Dataset Summary

	AT	DK	GR	EE	BG	FI
Life-satisfaction (0-10)	8.232564	8.499692	7.02819	6.863318	6.235793	8.315595
Well-being (12-48)	39.92303	41.05954	31.99732	35.53532	33.26869	38.092
Health (1-5)	2.84529	3.328589	2.927604	2.129451	2.82323	2.784953
Age (Mean)	70.5889	66.99107	69.43229	69.59683	66.4328	66.16592
Age (Max)		99	101	97	102	96

Age (Min)	50	50	50	50	50	50
Income (Mean)	31515.88	52868.81	17509.99	10807.25	4547.121	36078.98
Income (Max)	208800	403301.7	168000	36000	12271.19	144000
Income (Min)	8400	14530.73	3840	2400	736.2716	6960
Education Years (Mean)	9.487676	13.62288	9.669546	11.87992	10.89415	11.99232
Education Years (Min)	1	1	1	1	1	1
Education Years (Max)	35	25	24	25	24	38
MARITAL STATUS						
Married living with spouse	9686	10973	11155	14402	6574	6966
Registered partnership	60	140	70	181	146	85
Married, not living with spouse	220	155	245	410	160	76
Never married	1211	1065	675	2044	336	792
Divorced	2010	1862	695	3105	535	1255
Widowed	2843	2035	2520	5443	2279	861
EMPLOYMENT						
Retired	12050	8575	7785	15390	6145	5965
Employed or Self employed	2050	6335	2795	8000	2735	3400
Unemployed	200	250	195	270	470	320
Disabled	90	415	295	1035	210	80
Homemaker	1245	125	3820	225	235	80
Other	100	270	395	290	170	90

Source: SHARE dataset

Demographic composition is similar across study group countries. There are differences in the marital status: the proportion of divorced is higher in AT, CZ and FI compared to the rest of the countries.

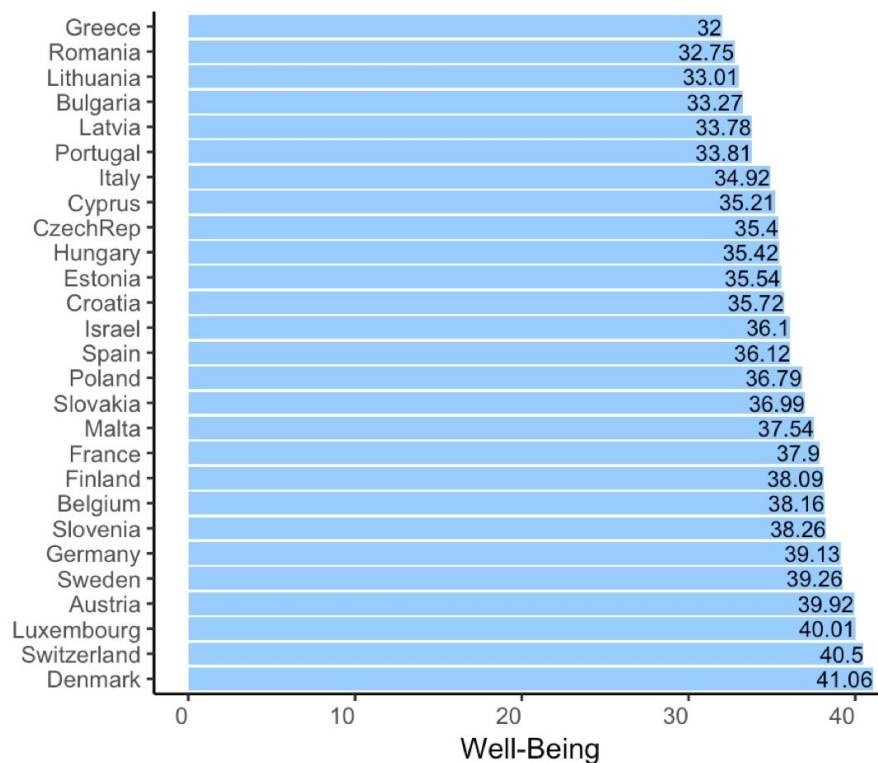
The highest average self-perceived health status is seen in DK, CH and SE, lowest average health status group of countries are LV, PT and EE. Employment status differences can be seen in DK, FI where the proportion of employed is higher compared to CZ and SI.

RO, LV and LT have lower average levels of income, whereas in LU and CH average income is the highest. Average number of education years is highest in DK, DE and IL, compared to PT and IT where the average period spent for education is lower.

Well-being

Figure 1 depicts the average level of subjective well-being across 27 countries in the EU. Higher levels of WB are seen in Western and Northern European countries. Lower average levels of WB are mostly concentrated in Eastern and Southern European countries.

Figure 1. Average subjective well-being level by country



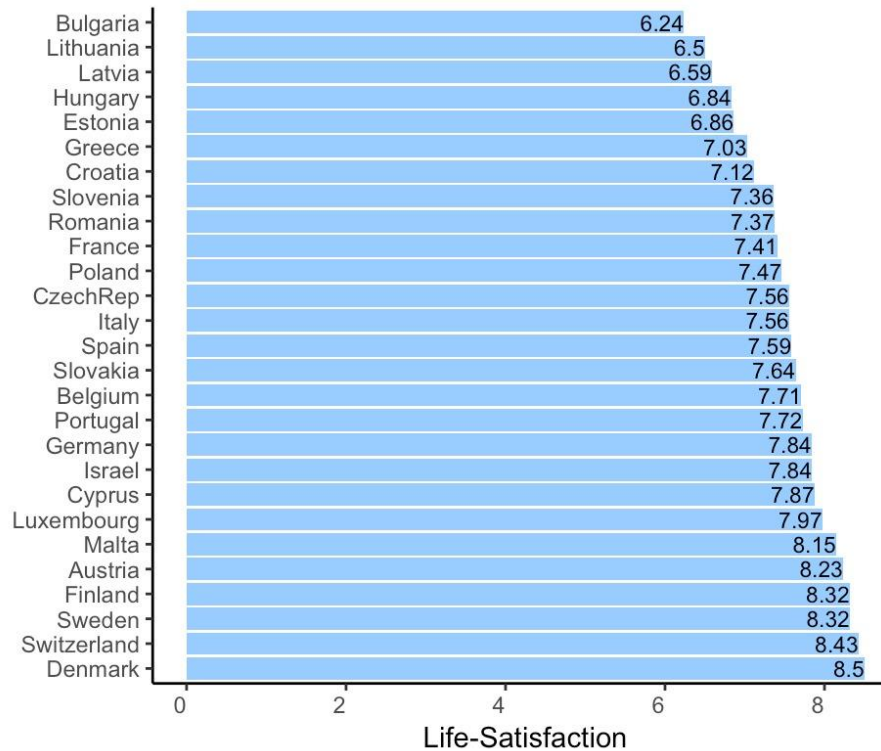
Source: SHARE dataset

The countries with highest WB are DK, CH and LU, compared to the lowest WB in GR, RO and LT.

Life Satisfaction

The average level of LS across EU countries is shown in Figure 2. Similar to the WB levels, LS is higher in Western and Northern European countries whereas Southern and Eastern European countries have lower LS levels.

Figure 2. Average Life satisfaction level by country



Source: SHARE dataset

Average LS is the highest in SE, CH and DK compared to the lowest levels seen in BG, LT and LV. Unlike the results of a study by Blanchflower and Oswald (2008), our data at hand do not yield U-shaped evolution of LS over the life course (expected J-shaped in our sample with age group 50+). The age groups with the highest level of LS across countries are mostly 50-59 and 60-69, with a decline in older age groups.

Concentration Index

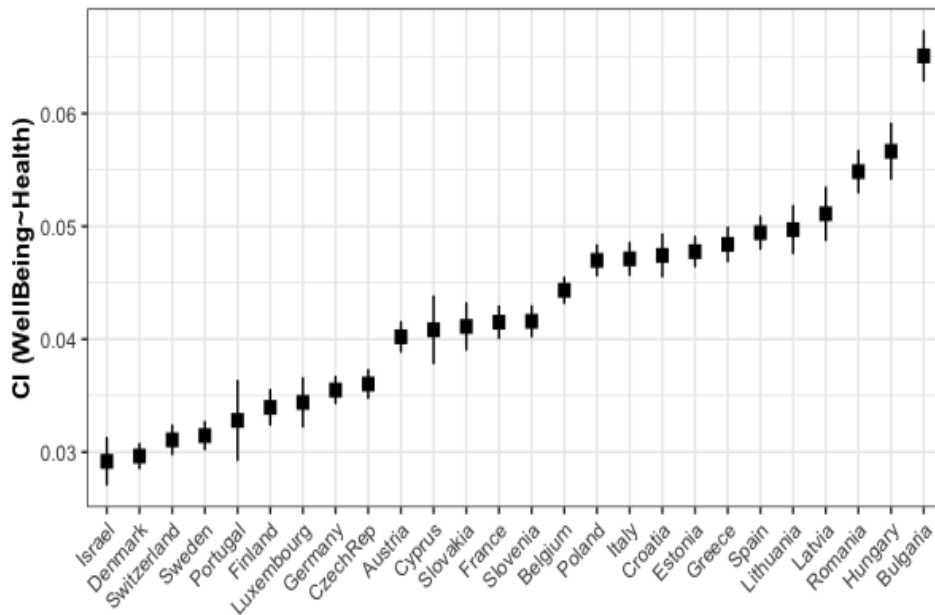
In this section, Concentration indices (CI) are measured to rank countries by the level of inequality in one variable (income or health) over the distribution of another variable (well-being). This measure of CI is based on measures proposed by Kakwani et al. (1997), Clarke et al.

(2002) and Erreygers et al. (2009). Health- and Income- related inequalities in WB are discussed in subsequent sections.

Health status inequality in WB

Figure 3 presents the estimated health-related inequalities in WB. The higher the CI the higher the level of inequality in that country. CI is the lowest in DK, SE and CH which indicates to the lowest health-related inequalities in WB in these regions, that is, relatively higher dispersed health status helps elderly to accumulate higher levels of WB. Whereas, higher health-related inequality indicators for BG and HU signal to the lower accumulation of WB and relatively unequal distribution of health status in WB.

Figure 3. Health-related inequality in WB by country



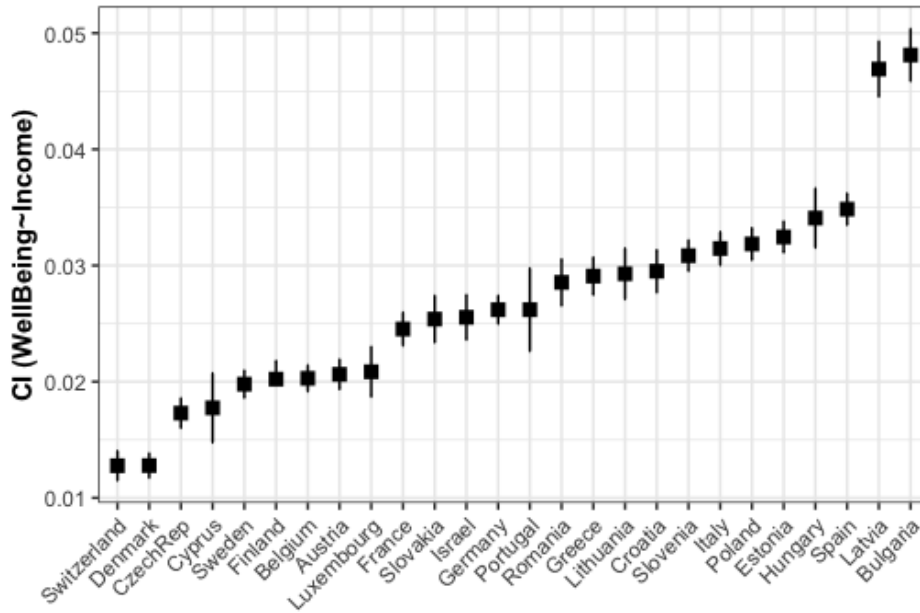
Source: SHARE dataset

Income level inequality in WB

Figure 4 depicts the estimated income-related inequalities in WB. The higher the CI the higher the level of inequality in that country. CI is the lowest in DK, CH and CZ compared to the higher

levels in LV and BG. Similar to the health-related inequality CI, lower income-related inequality in WB signals to higher accumulation of WB in elderly across these countries.

Figure 4. Income-related inequality in WB by country



Source: SHARE dataset

Even though health status and income are highly significant in subjective assessment of individual well-being or life satisfaction, the dispersion in distribution of these variables are of utmost importance, since with higher inequality and concentration the average well-being will be lower.

Well-being regression model

Table 2 (Table 2.1 in appendix) presents a regression summary for the first WB model. The results summarize how selected factors contribute to WB. We can see the differences in significance across different countries.

Table 2. Regression model summary [Well-being]

	AT	BG	DK	EE	FI	GR
(Intercept)	39.94 ***	33.77 ***	40.05 ***	34.02 ***	37.00 ***	34.46 ***
Income	0.00 ***	0.00 **	0.00 ***	-0.00 *	0.00	0.00
Education Years	-0.03 ***	0.15 ***	-0.02	0.11 ***	0.01	0.01
Gender Female {ref. Male}	-0.43 ***	-0.40 ***	0.02	0.28 ***	0.51 ***	-0.65 ***
AgeGroup {ref. [50,60)}						
AgeGroup [60,70)	0.36 *	-0.33 *	0.53 ***	-0.30 **	0.39 **	0.03
AgeGroup [70,80)	-0.19	-1.75 ***	0.60 ***	-0.71 ***	0.03	-0.86 ***
AgeGroup [80,)	-1.69 ***	-2.63 ***	-0.53 ***	-2.23 ***	-0.83 ***	-2.11 ***
Marital Status {ref. Married, living with spouse}						
Registered partnership	-1.62 **	1.23 **	-0.35	-1.70 ***	-0.30	0.47
Married, not living with spouse	-0.18	-0.10	-1.61 ***	-0.39	-1.15 *	0.31
Never married	-0.60 ***	-1.05 **	-0.81 ***	-0.72 ***	-1.32 ***	0.29
Divorced	-0.46 ***	-1.33 ***	-0.57 ***	-0.17	-0.49 ***	-0.71 ***
Widowed	-0.47 ***	-0.30 *	-0.23 *	-0.25 *	-0.91 ***	-0.55 ***
Health Status {ref. Excellent}						
Very good	-1.19 ***	-0.69 **	-1.45 ***	0.56	-0.72 ***	-0.68 ***
Good	-2.68 ***	-2.35 ***	-2.60 ***	-0.22	-2.21 ***	-2.99 ***
Fair	-5.48 ***	-4.76 ***	-4.46 ***	-2.44 ***	-4.53 ***	-4.77 ***
Poor	-9.77 ***	-8.70 ***	-8.37 ***	-6.81 ***	-7.67 ***	-7.88 ***
Makes_Ends_Meet {ref. With great difficulty}						
With some difficulty	1.53 ***	2.30 ***	0.85 **	2.66 ***	1.80 ***	2.28 ***
Fairly easily	3.97 ***	4.01 ***	3.07 ***	4.33 ***	3.84 ***	4.47 ***
Easily	5.39 ***	6.25 ***	3.82 ***	6.13 ***	4.84 ***	4.26 ***
Employment {ref. Retired}						
Employed or self-employed	0.33 *	0.61 ***	0.19 *	1.22 ***	0.60 ***	0.16
Unemployed	0.41	-0.35	-2.37 ***	-1.14 ***	-0.25	-1.60 ***
Permanently sick or disabled	-2.37 ***	-1.87 ***	-0.73 ***	-0.64 ***	0.50	-2.57 ***
Homemaker	-0.35 *	0.26	-0.82 *	-0.40	-0.39	-0.31 **
Other	-2.36 ***	0.22	-1.78 ***	0.79 *	1.04 *	-0.11

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: SHARE dataset

Similar to the results of Sand (2018) and Ryser, Weaver and Goncalves (2018), health status is statistically significant as is income and employment status. However, unlike in Ryser et al. (2018), here, the dependent variable is WB, instead of LS. Health status is significant in

describing WB across all countries, that is, the healthier individuals tend to accumulate larger “stock” of well-being. People assessing their health status as being excellent are better off in terms of WB compared to all other respondents.

Household income also shows high significance in most of the countries, except BE, CZ, FI. However, unlike countries where income is positively contributing to the level of WB, in EE and PL we see that income is negatively related to the WB. Another variable that looks at the degree of individuals’ ability to make ends meet is consistently significant across all countries, and the higher ease of making ends meet yields higher level of WB.

In several countries, such as, ES, FR and BE retired elderly express higher WB than those who are employed. On the contrary, in EE, BG and HU employed elderly population is significantly better off compared to the retired group. For unemployed elderly we see expected negative relationship with WB and worse off compared to employed and retired status.

Years spent in education variable is not significant for DK and FI. It is negatively related to WB for SE, AT and ES, while for other countries education positively affects the level of WB.

When comparing by marital status, across all countries, individuals who are divorced, single, widowed registered lower levels of WB compared to the reference group of married. For the difference between age groups, we can see that significance varies from country to country, however, age groups 50-59 and 60-69 have higher WB compared to the older age groups.

Well-being fixed effects model

In the second model, 2 waves from SHARE (2015-17) database are merged in order to use a fixed effect (FE) approach to estimate the effect of previously utilized variables on overall well-being. FE is used in order to control for all time-invariant individual characteristics, FE approach excludes the variation between individuals (between-variation) of the panel data and only relies on the variation over time (within-variation).

Table 3 summarizes the results of a fixed effects model for merged dataset from 2 periods. After merging the data from 2 datasets and by controlling country specific trends in our model, we can

see that the direction of the significant variables has not changed radically compared to the expected results from simple OLS model. The direction of the variables is similar to the study results found in Sand (2018) for linear model, with several minor differences in FE model.

Here, Income and Education are positively affecting the WB, Married and individuals with higher health status have higher level of WB compared to other categories within marital and health status respectively. The slight difference in employment status would be that retired elderly are better off compared to employed and unemployed, however, employed category still records higher WB than unemployed.

Table 3. Regression model summary [Fixed effects]

Fixed Effect Model		
	Estimate	p.value
Income	0.00	0.00 ***
Education	0.05	0.00 ***
Employment {ref. Retired}		
Employed or self-employed	-0.12	0.00 ***
Unemployed	-0.59	0.00 ***
Permanently sick or disabled	-1.36	0.00 ***
Homemaker	-1.04	0.00 ***
Other	-0.55	0.00 ***
AgeGroup {ref. [50,60)}		
AgeGroup [60,70)	0.03	0.14
AgeGroup [70,80)	-0.55	0.00 ***
AgeGroup [80,)	-1.83	0.00 ***
Marital Status {ref. Married, living with spouse}		
Registered partnership	0.13	0.02 *
Married, not living with spouse	-0.54	0.00 ***
Never married	-0.39	0.00 ***
Divorced	-0.26	0.00 ***
Widowed	-0.52	0.00 ***
Health Status {ref. Excellent}		
Very good	-1.23	0.00 ***
Good	-2.41	0.00 ***
Fair	-4.65	0.00 ***
Poor	-8.44	0.00 ***
Makes_Ends_Meet {ref. With great difficulty}		
With some difficulty	2.57	0.00 ***

Fairly easily	5.03	0.00 ***
Easily	6.72	0.00 ***

Source: SHARE dataset

To compare simple OLS model with fixed effects model, we carry out F test for individual effects. We test the null hypothesis of OLS is better than FE, and we get p-value < 0.05. Thus, we reject null hypothesis, which means that FE model is a better choice, and there are significant effects not captured in OLS model.

Further, we compare FE model with Random effects model. Hausman test is carried out to test the null hypothesis that unique errors are not correlated with the regressors, that is, random effects model is the preferred model. Low p-value from Hausman test rejects the null hypothesis, which means that FE model is preferred to RE model.

Social indicators

Table 4 (Table 4.1 in appendix) summarizes the WB model entailing social indicators such as size of the social network, involvement of an individual in social events, and satisfaction from their social network. Moreover, other variables include individuals' children proximity to their residence and frequency of communication and contact with their children.

Table 4. Regression model summary [Social factors]

	AT	BE	HR	CZ	DK	EE
(Intercept)	21.50 ***	24.40 ***	26.35 ***	28.39 ***	33.27 ***	21.88 ***
Social_Network_Satisfaction	1.16 ***	0.99 ***	1.08 ***	0.98 ***	1.15 ***	0.95 ***
Social_Network_Size	0.19 *	-0.09	0.00	-0.26 **	-0.27 ***	-0.20 *
Social_Network_scale	0.41 *	1.37 ***	0.61 *	1.00 ***	1.06 ***	1.88 ***
Child_proximity {ref. In the same house}						
In the same building	-0.67 **	-1.50 **	-0.55	0.32	-2.96 ***	0.25
Less than 1 km away	-0.33	0.43	-1.93 ***	-1.03 ***	-0.39	0.54
Between 1 and 5 km away	-0.59 *	-1.03 ***	-0.51	-0.06	0.05	-0.39
Between 5 and 25 km away	0.50 *	-0.96 ***	-1.57 ***	-0.65 **	-0.29	0.40
Between 25 and 100 km away	0.25	-0.52	0.19	-0.04	0.61	0.17
Between 100 and 500 km away	0.29	0.06	0.21	0.48	0.44	0.64 *
More than 500 km away	0.64	0.06	0.56	1.47 ***	1.77 ***	1.86 ***

Child_closeness {ref. Not very close}							
Somewhat close	2.68	0.41	-2.64	-3.68	-5.31 ***	-1.16	
Very close	4.79 ***	2.39 ***	-0.45	-3.69	-4.05 ***	0.19	
Extremely close	6.01 ***	1.96 **	-1.17	-3.11	-3.58 ***	1.27	
Child_contact {ref. Daily}							
Several times a week	0.56 ***	0.98 ***	-0.35	0.48 ***	-0.67 ***	0.84 ***	
About once a week	1.30 ***	1.53 ***	-1.19 **	0.30	-0.85 ***	-0.00	
About every two weeks	0.51	1.46 ***	0.46	-0.22	-1.04 ***	0.70 *	
About once a month	-0.80	1.01	2.47	-2.63 ***	-0.13	0.23	
Less than once a month	1.40	-0.26	-6.34 ***	-2.39 ***	-1.80 *	-1.49 *	
Never	0.41	4.10 *				18.27 ***	

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: SHARE dataset

Social network satisfaction is highly significant across all countries, and positively affects the level of WB. Social network size is negatively related to WB in CZ, DK and EE, where smaller social network is better, whereas in FR, LU and SI the larger the size of the social network the higher the WB is.

We also see significant differences among countries when it comes to different aspects of interactions of elderly population with their family, specifically with children. If we look at the child proximity variable, in DE, DK and EE individuals are better off when their children live farther apart, however, in PT, GR and ES the closer they live to their children the better their WB is.

Emotional closeness to child is negative in DK and DE, however still increasing with the degree of closeness. Unlike in DK and DE, the level of WB increases significantly in GR, FR and PT when emotional closeness is the highest.

When it comes to the frequency of meeting their children, in AT and CH less frequent visits are appreciated, whereas, in IT and HR more frequent visits and meetings contribute to a higher level of WB.

4. Conclusion

This study documents how different variables define the stock of cumulative well-being and life satisfaction for elderly population. We draw our attention to the differences across 27 countries in EU. We capture well-being and life satisfaction in terms of demographics, employment and health status. Expected indicators of high well-being are detected in high income and higher quality of life countries, corresponding to lower inequality and generous pension system. Also, individuals with better self perceived health status are seen to accumulate larger “stock” of total subjective well-being.

Estimated Concentration indices for health- and income- related inequalities in well-being provide some insightful information. CI varies across different countries for elderly population of age group 50+, however, higher distribution dispersion confirms expected results of higher well-being. In countries with better welfare system, health-related inequalities tend to be the lowest, and the level of inequalities is very close to one another. Similarly, income-related inequalities are the lowest for these countries.

Empirical results demonstrate how well-being is substantially lower in elderly population who are unemployed, divorced or widowed, have low health status and have lower social connectedness. Effective policies should be addressed to slow the deterioration of life satisfaction and well-being for these vulnerable groups. With rapidly increasing elderly proportion of a population, more and more people might be joining these interest groups for which policies should be already in place in order to increase well-being.

Unlike the results of a study by Blanchflower and Oswald (2008), we could not detect increasing life satisfaction indicators for elderly, where 45-65 age groups are considered to having the lowest life-satisfaction in the course of life. Life satisfaction deteriorates for older age groups compared to the reference category of 50-65 that displays the highest level almost in all countries.

By redirecting our attention to social indicators, we can see that significance varies substantially among EU countries. Emotional closeness and residence proximity to children may increase well-being significantly in some countries, however, it is not of importance and even negatively

related in others. Similarly, the larger social network size may negatively affect the well-being in several countries. Thus, these indicators signal about importance of various factors in defining well-being. In highly individualistic society one might not need very close ties with their children and vast social network in assessment of their subjective well-being, whereas in more family-oriented societies we can see the significance of larger social scale and connectedness.

This study raises new research questions and new grounds to explore further the magnitude of the variables contributing to the accumulation of well-being and life satisfaction among increasing elderly population. By breaking down these factors into percentage terms, one may provide clearer understanding of the difference in the magnitude and of how policies can be addressed to mitigate deteriorations in well-being that are most significant and specific to a particular country.

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Appendix

Table 1.1. Dataset Summary

	AT	DK	GR	EE	BG	FI	DE	SW	ES	IT	FR	CH	BE	
Life-satisfaction (0-10)	8.232564	8.499692	7.02819	6.863318	6.235793	8.315595	7.838367	8.319424	7.585311	7.557909	7.412249	8.426561	7.709874	
Well-being (12-48)	39.92303	41.05954	31.99732	35.53532	33.26869	38.092	39.12562	39.26381	36.12283	34.91971	37.90139	40.50194	38.1616	
Health (1-5)	2.84529	3.328589	2.927604	2.129451	2.82323	2.784953	2.664904	3.055865	2.638293	2.759046	2.760012	3.179101	2.922317	
Age(mean)	70.5889	66.99107	69.43229	69.59683	66.4328	66.16592	68	72.07	71.37	68.95	69.41	70.13	68.09	
Age(Max)	99	101	97	102	96	94	96	105	102	98	100	101	98	
Age(Min)	50	50	50	50	50	50	50	50	50	50	50	50	50	
Income (mean)	31515.88	52868.81	17509.99	10807.25	4547.121	36078.98	32638	36403	18868	28064	32771	64012	31409	
Income(Max)	208800	403301.7	168000	36000	12271.19	144000	86400	87181	79920	264000	216000	647657	84000	
Income(Min)	8400	14530.73	3840	2400	736.2716	6960	7200	10381	4908	5640	8400	7556	11160	
Education Years (Mean)	9.487676	13.62288	9.669546	11.87992	10.89415	11.99232	12.87	11.88	9.483	9.114	12.02	8.73	12.6	
Education Years (Min)	1	1	1	1	1	1	1	1	1	1	1	1	1	
Education Years (Max)	35	25	24	25	24	38	25	25	30	25	25	35	27	
MARITAL STATUS														
Married living with spouse	9686	10973	11155	14402	6574	6966	13586	10624	16986	17371	10189	7859	15277	
Registered partnership	60	140	70	181	146	85	81	550	270	347	160	116	815	
Married, not living with spouse	220	155	245	410	160	76	335	55	260	182	195	190	312	
Never married	1211	1065	675	2044	336	792	1058	1099	1284	1162	1368	751	1451	
Divorced	2010	1862	695	3105	535	1255	1615	1703	785	753	1632	1497	3090	
Widowed	2843	2035	2520	5443	2279	861	2430	1954	3970	3040	3111	1597	3565	
EMPLOYMENT STATUS														
Retired	12050	8575	7785	15390	6145	5965	11505	11800	12300	12300	11600	6955	14290	
Employed or Self employed	2050	6335	2795	8000	2735	3400	5435	3360	4115	4645	3190	3395	5585	
Unemployed	200	250	195	270	470	320	335	90	575	535	345	110	590	
Disabled	90	415	295	1035	210	80	505	230	1015	560	405	235	1285	
Homemaker	1245	125	3820	225	235	80	895	70	4530	4255	660	905	1760	
Other	100	270	395	290	170	90	160	130	625	495	105	135	305	
	IL	CZ	PL	LU	HU	PT	SL	HR	LT	CY	LV	MT	RO	SL
Life-satisfaction (0-10)	7.843433	7.556957	7.465561	7.971292	6.836281	7.724409	7.364789	7.115615	6.501523	7.873642	6.590319	8.147026	7.371239	7.639673

Well-being (12-48)	36.09733	35.39742	36.78934	40.0061	35.42088	33.80556	38.25842	35.7239	33.01413	35.21284	33.784	37.54434	32.75036	36.9913
Health (1-5)	2.845872	2.765679	2.418495	2.824083	2.39883	2.320472	2.634453	2.646844	2.368943	2.975831	2.175399	2.855829	2.428382	3.28493
Age(mean)	70.78	70.19	65.93	66.59	69.04	68.36	69.18	66.43	66.22	69	66.66	66.87	65.21	61.68
Age(Max)	101	105	103	99	95	95	102	98	97	101	103	94	100	101
Age(Min)	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Income (mean)	35657	10229	9565	62876	7680	13514	15189	9294	7368	40061	6613	16434	4422.9	15327
Income(Max)	97484	24614	36646	240000	19406	38400	42000	27332	24000	360000	19200	84000	32652.7	168000
Income(Min)	5908	3436	2086	16800	1878	3600	3348	1431	1224	4200	1140	5016	420.2	3480
Education Years (Mean)	12.79	12.29	10.7	12.04	10.8	5.891	10.49	10.52	11.4	9.445	11.57	10.31	9.757	11.98
Education Years (Min)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Education Years (Max)	25	28	25	25	23	25	23	25	28	23	25	25	25	25
MARITAL STATUS														
Married living with spouse	7779	13120	17389	4735	4690	1915	12889	9085	5618	4749	4673	4960	7430	7880
Registered partnership	45	26	0	10	190	50	861	100	271	5	211	40	260	180
Married, not living with spouse	102	251	270	75	75	25	60	50	175	35	195	165	120	140
Never married	236	515	995	215	225	75	735	405	366	95	470	425	225	500
Divorced	741	2777	922	515	670	90	715	460	1207	205	1056	75	405	560
Widowed	1757	4406	3944	720	1840	385	3200	1940	2538	1076	2175	640	2130	1125
EMPLOYMENT STATUS														
Retired	4935	17340	13340	3400	6060	1425	14025	7480	5060	3885	4925	2570	6925	4955
Employed or Self employed	3060	2835	5845	1115	1085	470	2275	2135	3250	1315	2740	1180	1635	4830
Unemployed	35	155	780	60	95	85	595	835	450	135	295	115	75	230
Disabled	895	220	1595	320	220	70	255	185	975	130	460	150	155	95
Homemaker	1135	65	700	1155	90	365	890	1120	270	555	165	2140	1465	135
Other	340	135	1065	95	65	50	220	215	105	40	145	50	290	110

Table 2.1. Regression model summary [Well-being]

	AT		BE		BG		HR		CY		CZ		DK	
(Intercept)	39.94	0.00 ***	38.77	0.00 ***	33.77	0.00 ***	35.40	0.00 ***	35.62	0.00 ***	37.80	0.00 ***	40.05	0.00 ***
Income	0.00	0.00 ***	-0.00	0.94	0.00	0.08 **	0.00	0.00 ***	-0.00	0.00 ***	-0.00	0.07	-	0.00 0.00 ***
Education Years	-0.03	0.00 ***	0.02	0.02 *	0.15	0.00 ***	0.09	0.00 ***	0.20	0.00 ***	-0.03	0.01 *	-0.02	0.06 -
Gender Female {ref. Male}	-0.43	0.00 ***	-0.53	0.00 ***	-0.40	0.00 ***	-0.64	0.00 ***	-1.09	0.00 ***	-0.52	0.00 ***	0.02	0.79 -
AgeGroup {ref. [50,60]}														
AgeGroup[60,70)	0.36	0.02 *	0.19	0.08 -	-0.33	0.04 *	-0.09	0.54 -	0.45	0.07 -	0.22	0.15 -	0.53	0.00 ***
AgeGroup[70,80)	-0.19	0.23 -	0.35	0.01 **	-1.75	0.00 ***	-0.39	0.02 *	0.37	0.24 -	-0.18	0.29 -	0.60	0.00 ***
AgeGroup[80,Inf)	-1.69	0.00 ***	-0.77	0.00 ***	-2.63	0.00 ***	-2.40	0.00 ***	-2.17	0.00 ***	-1.20	0.00 ***	-0.53	0.00 ***

Marital Status {ref. Married, living with spouse}																					
Registered partnership	-1.62	0.01	**	0.16	0.38	-	1.23	0.01	**	2.08	0.00	***	4.25	0.08	-	-2.65	0.00	**	-0.35	0.29	-
Married, not living with spouse	-0.18	0.60	-	0.17	0.56	-	-0.10	0.82	-	1.38	0.08	-	0.01	0.99	-	-1.09	0.00	***	-1.61	0.00	***
Never married	-0.60	0.00	***	-0.74	0.00	***	-1.05	0.00	**	-1.19	0.00	***	1.33	0.04	*	-1.41	0.00	***	-0.81	0.00	***
Divorced	-0.46	0.00	***	-0.91	0.00	***	-1.33	0.00	***	-0.68	0.01	**	-1.12	0.01	**	-0.91	0.00	***	-0.57	0.00	***
Widowed	-0.47	0.00	***	-0.49	0.00	***	-0.30	0.04	*	-0.42	0.01	**	-1.75	0.00	***	0.26	0.01	*	-0.23	0.04	*
Health Status {ref. Excellent}																					
Very good	-1.19	0.00	***	-0.78	0.00	***	-0.69	0.00	**	0.14	0.55	-	-2.02	0.00	***	-1.50	0.00	***	-1.45	0.00	***
Good	-2.68	0.00	***	-2.60	0.00	***	-2.35	0.00	***	-1.26	0.00	***	-1.95	0.00	***	-3.63	0.00	***	-2.60	0.00	***
Fair	-5.48	0.00	***	-5.56	0.00	***	-4.76	0.00	***	-2.77	0.00	***	-4.08	0.00	***	-6.40	0.00	***	-4.46	0.00	***
Poor	-9.77	0.00	***	-9.92	0.00	***	-8.70	0.00	***	-7.83	0.00	***	-8.77	0.00	***	-9.85	0.00	***	-8.37	0.00	***
Makes_Ends_Meet {ref. With great difficulty}																					
With some difficulty	1.53	0.00	***	1.44	0.00	***	2.30	0.00	***	1.76	0.00	***	2.17	0.00	***	1.26	0.00	***	0.85	0.01	**
Fairly easily	3.97	0.00	***	3.29	0.00	***	4.01	0.00	***	3.56	0.00	***	4.24	0.00	***	3.13	0.00	***	3.07	0.00	***
Easily	5.39	0.00	***	4.45	0.00	***	6.25	0.00	***	5.32	0.00	***	3.59	0.00	***	4.49	0.00	***	3.82	0.00	***
Employment Status {ref. Retired}																					
Employed or self-employed	0.33	0.03	*	-0.49	0.00	***	0.61	0.00	***	0.10	0.56	-	0.42	0.13	-	0.38	0.01	**	0.19	0.05	*
Unemployed	0.41	0.27	-	-1.40	0.00	***	-0.35	0.21	-	0.57	0.01	**	-2.24	0.00	***	-0.47	0.23	-	-2.37	0.00	***
Permanently sick or disabled	-2.37	0.00	***	-2.06	0.00	***	-1.87	0.00	***	-2.64	0.00	***	-4.57	0.00	***	0.57	0.10	-	-0.73	0.00	***
Homemaker	-0.35	0.02	*	0.21	0.12	-	0.26	0.51	-	0.25	0.18	-	0.74	0.02	*	1.67	0.01	**	-0.82	0.02	*
Other	-2.36	0.00	***	0.25	0.39	-	0.22	0.62	-	0.35	0.37	-	-0.61	0.52	-	1.10	0.01	**	-1.78	0.00	***

	EE	FI	FR	DE	GR	HU	IL
(Intercept)	34.02 0.00 ***	37.00 0.00 ***	39.52 0.00 ***	35.37 0.00 ***	34.46 0.00 ***	35.40 0.00 ***	34.38 0.00 ***
Income	-0.00 0.01 *	0.00 0.75 -	0.00 0.00 ***	0.00 0.00 ***	0.00 0.19 -	0.00 0.02 *	-0.00 0.18 -
Education Years	0.11 0.00 ***	0.01 0.54 -	0.03 0.02 *	0.03 0.00 ***	0.01 0.43 -	0.15 0.00 ***	0.20 0.00 ***
Gender Female {ref. Male}	0.28 0.00 ***	0.51 0.00 ***	-0.41 0.00 ***	-0.24 0.00 ***	-0.65 0.00 ***	-0.28 0.05 *	-0.20 0.09 -
AgeGroup {ref. [50,60)}							
AgeGroup[60,70)	-0.30 0.01 **	0.39 0.01 **	-0.08 0.58 -	0.85 0.00 ***	0.03 0.79 -	0.45 0.09 -	0.27 0.14 -
AgeGroup[70,80)	-0.71 0.00 ***	0.03 0.89 -	-0.78 0.00 ***	1.01 0.00 ***	-0.86 0.00 ***	-1.08 0.00 ***	0.64 0.00 **
AgeGroup[80,Inf)	-2.23 0.00 ***	-0.83 0.00 ***	-1.95 0.00 ***	-0.17 0.29 -	-2.11 0.00 ***	-1.73 0.00 ***	-1.08 0.00 ***
Marital Status {ref. Married, living with spouse}							
Registered partnership	-1.70 0.00 ***	-0.30 0.53 -	0.03 0.94 -	0.25 0.64 -	0.47 0.43 -	-0.62 0.16 -	-0.51 0.60 -
Married, not living with spouse	-0.39 0.15 -	-1.15 0.03 *	-1.50 0.00 ***	-0.45 0.09 -	0.31 0.28 -	-0.95 0.16 -	-0.19 0.72 -
Never married	-0.72 0.00 ***	-1.32 0.00 ***	-0.71 0.00 ***	0.09 0.57 -	0.29 0.10 -	-0.65 0.10 -	-0.60 0.10 -
Divorced	-0.17 0.12 -	-0.49 0.00 ***	-0.47 0.00 ***	-0.21 0.09 -	-0.71 0.00 ***	-0.37 0.13 -	0.38 0.08 -
Widowed	-0.25 0.01 *	-0.91 0.00 ***	-0.74 0.00 ***	0.07 0.56 -	-0.55 0.00 ***	-0.34 0.06 -	-0.62 0.00 ***
Health Status {ref. Excellent}							
Very good	0.56 0.08 -	-0.72 0.00 ***	-1.12 0.00 ***	-0.44 0.03 *	-0.68 0.00 ***	-0.22 0.60	-3.63 0.00 ***
Good	-0.22 0.44 -	-2.21 0.00 ***	-2.99 0.00 ***	-1.77 0.00 ***	-2.99 0.00 ***	-2.12 0.00 ***	-3.16 0.00 ***

Fair	-2.44	0.00	***	-4.53	0.00	***	-5.82	0.00	***	-4.42	0.00	***	-4.77	0.00	***	-4.30	0.00	***	-4.11	0.00	***
Poor	-6.81	0.00	***	-7.67	0.00	***	-8.98	0.00	***	-7.64	0.00	***	-7.88	0.00	***	-9.50	0.00	***	-8.90	0.00	***
Makes_Ends_Meet {ref. With great difficulty}																					
With some difficulty	2.66	0.00	***	1.80	0.00	***	1.02	0.00	***	2.59	0.00	***	2.28	0.00	***	2.46	0.00	***	2.44	0.00	***
Fairly easily	4.33	0.00	***	3.84	0.00	***	3.12	0.00	***	4.85	0.00	***	4.47	0.00	***	3.99	0.00	***	3.65	0.00	***
Easily	6.13	0.00	***	4.84	0.00	***	4.29	0.00	***	6.43	0.00	***	4.26	0.00	***	5.93	0.00	***	4.68	0.00	***
Employment Status {ref. Retired}																					
Employed or self- employed	1.22	0.00	***	0.60	0.00	***	-0.60	0.00	***	-0.10	0.34	-	0.16	0.16	-	1.28	0.00	***	-0.10	0.50	-
Unemployed	-1.14	0.00	***	-0.25	0.37	-	-1.56	0.00	***	-0.07	0.78	-	-1.60	0.00	***	-3.00	0.00	***	1.85	0.03	*
Permanently sick or disabled	-0.64	0.00	***	0.50	0.34	-	-1.37	0.00	***	-0.93	0.00	***	-2.57	0.00	***	-1.15	0.01	**	-1.52	0.00	***
Homemaker	-0.40	0.30	-	-0.39	0.44	-	-0.33	0.13	-	-0.57	0.00	***	-0.31	0.00	**	-0.51	0.38	-	-0.37	0.06	-
Other	0.79	0.01	*	1.04	0.03	*	2.12	0.00	***	-1.31	0.00	***	-0.11	0.66	-	-0.34	0.63	-	0.20	0.51	-

	IT		LV		LT		LU		MT		PL		PT								
(Intercept)	35.87	0.00	***	29.73	0.00	***	35.08	0.00	***	41.21	0.00	***	37.68	0.00	***	37.44	0.00	***	34.12	0.00	***
Income	-0.00	0.82	-	0.00	0.00	***	0.00	0.17	-	0.00	0.00	***	0.00	0.14	-	-0.00	0.00	***	0.00	0.10	-
Education Years	0.09	0.00	***	0.24	0.00	***	0.07	0.00	***	0.04	0.04	*	0.06	0.02	*	0.11	0.00	***	0.12	0.00	***
Gender Female {ref. Male}	-0.75	0.00	***	-0.41	0.00	**	0.12	0.29	-	-0.78	0.00	***	-0.54	0.01	**	-0.71	0.00	***	-0.38	0.07	-
AgeGroup {ref. [50,60)}																					
AgeGroup[60,70)	-0.47	0.00	***	0.48	0.01	*	0.71	0.00		0.02	0.91	-	1.40	0.00	***	0.14	0.19	-	-0.73	0.01	**
AgeGroup[70,80)	-1.65	0.00	***	0.39	0.12	-	0.83	0.00		0.47	0.04	***	0.81	0.00	***	-0.66	0.00	***	-0.41	0.22	-
AgeGroup[80,Inf)	-2.55	0.00	***	-1.16	0.00	***	0.10	0.69	-	-0.13	0.68	-	-0.19	0.54	-	-2.73	0.00	***	-2.94	0.00	***
Marital Status {ref. Married, living with spouse}																					
Registered partnership	-1.35	0.00	***	1.73	0.00	***	-1.14	0.00	**	-3.64	0.02	**	0.58	0.52	-	-	-	-	-1.45	0.03	*
Married, not living with spouse	0.34	0.38	-	0.71	0.09	-	0.53	0.19	-	-2.38	0.00	***	-1.89	0.00	***	-0.92	0.01	**	1.50	0.07	-
Never married	-1.33	0.00	***	-0.22	0.45	-	1.02	0.00	***	-0.14	0.71	-	-1.24	0.00	***	-1.70	0.00	***	0.46	0.39	-
Divorced	-0.98	0.00	***	0.91	0.00	***	0.07	0.68	-	-0.03	0.89	-	-2.37	0.00	***	0.14	0.45	-	0.38	0.45	*
Widowed	-1.06	0.00	***	-0.13	0.47	-	0.19	0.20	-	0.01	0.96	-	-1.16	0.00	***	-1.00	0.00	***	-0.71	0.02	*
Health Status {ref. Excellent}																					
Very good	-0.55	0.00	***	2.07	0.01	*	-1.91	0.00	***	-1.77	0.00	***	-0.71	0.04	*	-0.66	0.02	*	-2.99	0.00	**
Good	-2.08	0.00	***	-0.27	0.72	-	-4.17	0.00	***	-3.73	0.00	***	0.04	0.89	-	-1.92	0.00	***	-0.40	0.31	-
Fair	-4.49	0.00	***	-2.69	0.00	***	-6.76	0.00	***	-5.65	0.00	***	-2.03	0.00	***	-4.63	0.00	***	-2.25	0.00	***
Poor	-8.60	0.00	***	-5.18	0.00	***	11.48	0.00	***	10.62	0.00	***	-5.85	0.00	***	-7.81	0.00	***	-4.31	0.00	***
Makes_Ends_Meet {ref. With great difficulty}																					
With some difficulty	2.15	0.00	***	2.31	0.00	***	1.19	0.00	***	0.33	0.40	-	-0.64	0.01	*	2.27	0.00	***	1.95	0.00	***
Fairly easily	4.53	0.00	***	4.73	0.00	***	3.38	0.00	***	2.71	0.00	***	0.94	0.00	***	5.21	0.00	***	3.04	0.00	***
Easily	6.63	0.00	***	6.19	0.00	***	5.12	0.00	***	2.88	0.00	***	2.12	0.00	***	6.94	0.00	***	2.56	0.00	***
Employment Status {ref. Retired}																					
Employed or self- employed	-0.20	0.10	-	1.33	0.00	***	1.37	0.00	***	-0.52	0.02	*	0.05	0.84	-	-0.22	0.07	-	0.40	0.16	-

Unemployed	-1.96	0.00	***	-0.74	0.06	-	0.34	0.27	-	1.32	0.06	-	-0.25	0.64	-	-1.65	0.00	***	-1.25	0.02	*
Permanently sick or disabled	-2.31	0.00	***	-1.36	0.00	***	-0.48	0.02	*	0.16	0.62	-	-4.56	0.00	***	-1.25	0.00	***	-2.15	0.00	***
Homemaker	-0.41	0.00	***	2.31	0.00	***	0.03	0.92	-	-0.01	0.97	-	-0.55	0.01	*	0.75	0.00	***	-1.19	0.00	***
Other	0.66	0.01	**	-0.11	0.82	-	-1.38	0.01	*	0.31	0.56	-	0.67	0.41	-	0.30	0.09	-	5.89	0.00	***

	RO			SK			SI			ES			SE			CH						
(Intercept)	34.46	0.00	***	33.80	0.00	***	38.95	0.00	***	37.59	0.00	***	39.89	0.00	***	37.88	0.00	***				
Income	0.00	0.75	-	-0.00	0.28	-	0.00	0.02	*	0.00	0.00	***	0.00	0.00	***	0.00	0.65	-				
Education Years	0.18	0.00	***	0.19	0.00	***	0.08	0.00	***	-0.02	0.02	*	-0.02	0.03	*	-0.01	0.20	-				
Gender Female {ref. Male}	-0.04	0.68	-	0.02	0.86	-	-0.28	0.00	***	-0.63	0.00	***	0.07	0.33	-	-0.01	0.95	-				
AgeGroup {ref. [50,60)}																						
AgeGroup[60,70)	-0.09	0.49	-	-0.93	0.00	***	-0.03	0.84	-	-0.10	0.41	-	0.58	0.00	***	0.73	0.00	***				
AgeGroup[70,80)	-0.20	0.24	-	-1.65	0.00	***	-1.09	0.00	***	-1.24	0.00	***	0.01	0.94	-	0.37	0.02	*				
AgeGroup[80,Inf)	-2.32	0.00	***	-2.45	0.00	***	-2.95	0.00	***	-2.61	0.00	***	-1.77	0.00	***	0.08	0.63	-				
Marital Status {ref. Married, living with spouse}																						
Registered partnership	0.21	0.49	-	0.34	0.49	-	-0.60	0.00	***	0.26	0.46	-	-0.33	0.09	-	0.23	0.56	-				
Married, not living with spouse	-2.01	0.00	***	0.61	0.20	-	0.73	0.28	-	-1.17	0.00	***	-1.05	0.10	-	0.69	0.02	*				
Never married	-1.33	0.00	***	0.23	0.38	-	-0.38	0.05	-	-0.11	0.52	-	-0.64	0.00	***	-0.49	0.00	**				
Divorced	-1.40	0.00	***	-0.85	0.00	***	0.10	0.60	-	0.17	0.40	-	-0.20	0.11	-	0.01	0.91	-				
Widowed	-0.80	0.00	***	-0.73	0.00	***	-0.30	0.01	**	-0.60	0.00	***	-0.08	0.52	-	0.11	0.40	-				
Health Status {ref. Excellent}																						
Very good	-1.83	0.00	***	-2.09	0.00	***	-0.61	0.00	**	-1.02	0.00	***	-0.87	0.00	***	-1.08	0.00	***				
Good	-2.79	0.00	***	-3.21	0.00	***	-2.51	0.00	***	-1.63	0.00	***	-2.17	0.00	***	-2.52	0.00	***				
Fair	-5.29	0.00	***	-6.05	0.00	***	-4.31	0.00	***	-4.26	0.00	***	-4.07	0.00	***	-5.10	0.00	***				
Poor	-8.06	0.00	***	-10.21	0.00	***	-8.39	0.00	***	-9.40	0.00	***	-7.40	0.00	***	-7.88	0.00	***				
Makes_Ends_Meet {ref. With great difficulty}																						
With some difficulty	1.35	0.00	***	3.79	0.00	***	1.87	0.00	***	1.03	0.00	***	-0.42	0.14	-	2.37	0.00	***				
Fairly easily	2.85	0.00	***	5.85	0.00	***	4.03	0.00	***	4.08	0.00	***	1.52	0.00	***	4.50	0.00	***				
Easily	3.92	0.00	***	7.82	0.00	***	5.25	0.00	***	5.56	0.00	***	2.37	0.00	***	5.99	0.00	***				
Employment Status {ref. Retired}																						
Employed or self-employed	0.65	0.00	***	-0.70	0.00	***	-0.32	0.04	*	-0.62	0.00	***	-0.15	0.22	-	-0.11	0.33	-				
Unemployed	2.46	0.00	***	-2.18	0.00	***	0.38	0.08	-	-0.22	0.37	-	-1.57	0.00	**	-1.30	0.00	**				
Permanently sick or disabled	-1.14	0.00	**	-2.69	0.00	***	-2.12	0.00	***	-1.59	0.00	***	-2.40	0.00	***	-1.10	0.00	***				
Homemaker	0.12	0.48	-	-0.23	0.73	-	-0.85	0.00	***	-0.38	0.00	***	0.23	0.68	-	-0.26	0.08	-				
Other	1.10	0.00	***	-3.11	0.00	***	-1.34	0.00	***	-0.36	0.13	-	0.71	0.07	-	-1.49	0.00	***				

Table 4.1. Regression model summary [Social factors]

	AT			BE			HR			CZ			DK			EE						
(Intercept)	21.50	0.00	***	24.40	0.00	***	26.35	0.00	***	28.39	0.00	***	33.27	0.00	***	21.88	0.00	***				
Social_Network_Satisfaction	1.16	0.00	***	0.99	0.00	***	1.08	0.00	***	0.98	0.00	***	1.15	0.00	***	0.95	0.00	***				
Social_Network_Size	0.19	0.04	*	-0.09	0.35	-	0.00	0.99	-	-0.26	0.00	**	-0.27	0.00	***	-0.20	0.04	*				
Social_Network_scale	0.41	0.03	*	1.37	0.00	***	0.61	0.04	*	1.00	0.00	***	1.06	0.00	***	1.88	0.00	***				

Child_proximity {ref. In the same house}																			
In the same building	-0.67	0.01	**	-1.50	0.01	**	-0.55	0.09	-	0.32	0.16	-	-2.96	0.00	***	0.25	0.40	-	
Less than 1 km away	-0.33	0.17	-	0.43	0.14	-	-1.93	0.00	***	-1.03	0.00	***	-0.39	0.31	-	0.54	0.05	-	
Between 1 and 5 km away	-0.59	0.01	*	-1.03	0.00	***	-0.51	0.10	-	-0.06	0.76	-	0.05	0.88	-	-0.39	0.13	-	
Between 5 and 25 km away	0.50	0.03	*	-0.96	0.00	***	-1.57	0.00	***	-0.65	0.00	**	-0.29	0.40	-	0.40	0.10	-	
Between 25 and 100 km away	0.25	0.36	-	-0.52	0.08	-	0.19	0.61	-	-0.04	0.85	-	0.61	0.08	-	0.17	0.53	-	
Between 100 and 500 km away	0.29	0.32	-	0.06	0.88	-	0.21	0.56	-	0.48	0.06	-	0.44	0.21	-	0.64	0.01	*	
More than 500 km away	0.64	0.10	-	0.06	0.90	-	0.56	0.21	-	1.47	0.00	***	1.77	0.00	***	1.86	0.00	***	
Child_closeness {ref. Not very close}																			
Somewhat close	2.68	0.06	-	0.41	0.57	-	-2.64	0.19	-	-3.68	0.13	-	-5.31	0.00	***	-1.16	0.27	-	
Very close	4.79	0.00	***	2.39	0.00	***	-0.45	0.82	-	-3.69	0.12	-	-4.05	0.00	***	0.19	0.85	-	
Extremely close	6.01	0.00	***	1.96	0.00	**	-1.17	0.55	-	-3.11	0.19	-	-3.58	0.00	***	1.27	0.21	-	
Child_contact {ref. Daily}																			
Several times a week	0.56	0.00	***	0.98	0.00	***	-0.35	0.13	-	0.48	0.00	***	-0.67	0.00	***	0.84	0.00	***	
About once a week	1.30	0.00	***	1.53	0.00	***	-1.19	0.00	**	0.30	0.08	-	-0.85	0.00	***	-0.00	0.98	-	
About every two weeks	0.51	0.13	-	1.46	0.00	***	0.46	0.54	-	-0.22	0.42	-	-1.04	0.00	***	0.70	0.03	*	
About once a month	-0.80	0.12	-	1.01	0.05	-	2.47	0.06	-	-2.63	0.00	***	-0.13	0.74	-	0.23	0.48	-	
Less than once a month	1.40	0.05	-	-0.26	0.75	-	-6.34	0.00	***	-2.39	0.00	***	-1.80	0.01	*	-1.49	0.03	*	
Never	0.41	0.80	-	4.10	0.02	*	-	-	-	-	-	-	-	-	-	-	-	-	

	FR		DE		GR		IL		IT		LU							
(Intercept)	25.74	0.00	***	30.24	0.00	***	19.11	0.00	***	26.23	0.00	***	22.72	0.00	***	27.50	0.00	***
Social_Network_Satisfaction	0.69	0.00	***	0.99	0.00	***	0.62	0.00	***	0.73	0.00	***	1.19	0.00	***	1.37	0.00	***
Social_Network_Size	0.53	0.00	***	0.17	0.04	*	-0.17	0.11	-	0.78	0.00	***	0.27	0.08	-	1.02	0.00	***
Social_Network_scale	0.22	0.29	-	0.51	0.00	**	1.11	0.00	***	0.62	0.09	-	0.47	0.11	-	-0.99	0.01	**
Child_proximity {ref. In the same house}																		
In the same building	1.58	0.01	**	-0.01	0.96	-	-1.80	0.00	***	-3.47	0.00	***	-0.14	0.64	-	-2.98	0.00	**
Less than 1 km away	-1.21	0.00	***	0.29	0.21	-	-2.04	0.00	***	-1.00	0.07	-	0.70	0.01	**	0.52	0.29	-
Between 1 and 5 km away	-0.86	0.00	-	-0.44	0.05	-	-1.48	0.00	***	-3.45	0.00	***	0.77	0.00	**	0.73	0.14	-
Between 5 and 25 km away	-0.51	0.06	-	-0.17	0.45	-	-1.87	0.00	***	-1.37	0.01	**	1.15	0.00	***	0.06	0.90	-
Between 25 and 100 km away	0.18	0.54	-	1.02	0.00	***	-1.79	0.00	***	-1.28	0.02	*	2.23	0.00	***	0.03	0.96	-
Between 100 and 500 km away	0.39	0.18	-	0.75	0.00	-	-0.30	0.20	-	-1.80	0.01	*	1.70	0.00	***	1.87	0.01	**
More than 500 km away	-0.86	0.01	**	2.05	0.00	***	0.04	0.89	-	-1.14	0.06	-	1.94	0.00	***	0.25	0.69	-
Child_closeness {ref. Not very close}																		
Somewhat close	2.50	0.07	-	-3.51	0.00	***	7.42	0.00	***	0.18	0.85	-	-2.18	0.00	**	-2.88	0.03	*
Very close	3.41	0.01	*	-2.14	0.01	**	6.24	0.00	***	-0.36	0.69	-	-0.93	0.15	-	-2.01	0.09	-
Extremely close	4.14	0.00	**	-2.17	0.01	**	6.06	0.00	***	-0.22	0.80	-	-0.22	0.74	-	-2.33	0.05	*
Child_contact {ref. Daily}																		
Several times a week	0.72	0.00	***	0.55	0.00	***	-0.09	0.53	-	0.52	0.05	-	-0.56	0.01	*	1.01	0.00	***
About once a week	0.76	0.00	***	0.65	0.00	***	-0.81	0.00	**	1.45	0.00	***	-0.79	0.03	*	1.79	0.00	***
About every two weeks	1.26	0.00	***	-0.09	0.72	-	-1.96	0.00	**	1.58	0.05	*	-3.33	0.00	***	-0.03	0.96	-
About once a month	0.95	0.03	*	0.07	0.85	-	0.49	0.66	-	4.47	0.00	***	-0.21	0.80	-	-0.71	0.44	-
Less than once a month	-1.36	0.05	*	-0.97	0.16	-	5.30	0.00	**	-1.49	0.27	-	-6.67	0.00	***	-7.01	0.01	**
Never	6.37	0.03	*	-	-	-	-0.80	0.79	-	-	-	-	0.21	0.94	-	-	-	-

	PL		PT		SI		ES		SE		CH							
(Intercept)	18.46	0.00	***	23.29	0.00	***	27.38	0.00	***	25.00	0.00	***	28.32	0.00	***	29.02	0.00	***
Social_Network_Satisfaction	1.39	0.00	***	0.66	0.00	***	0.80	0.00	***	0.94	0.00	***	0.92	0.00	***	0.97	0.00	***
Social_Network_Size	0.58	0.01	*	0.12	0.53	-	0.62	0.00	***	-0.08	0.52	-	-0.11	0.10	-	0.29	0.00	***
Social_Network_scale	0.90	0.05	*	0.22	0.55	-	-0.30	0.29	-	0.53	0.03	*	0.97	0.00	***	-0.21	0.26	-
Child_proximity {ref. In the same house}																		
In the same building	0.13	0.82	-	-6.01	0.00	***	0.12	0.62	-	-1.56	0.00	***	0.47	0.54	-	-0.91	0.03	*
Less than 1 km away	-0.13	0.78	-	-1.77	0.00	***	-0.66	0.02	*	-1.27	0.00	***	-0.64	0.10	-	-0.30	0.34	-
Between 1 and 5 km away	-0.35	0.44	-	-0.98	0.01	**	0.13	0.64	-	-1.62	0.00	***	-1.22	0.00	**	-0.52	0.09	-
Between 5 and 25 km away	-0.77	0.09	-	-0.64	0.06	-	0.28	0.34	-	-1.32	0.00	***	-0.91	0.01	*	-0.57	0.05	-
Between 25 and 100 km away	0.52	0.31	-	-1.10	0.02	*	-1.35	0.00	***	-0.36	0.23	-	-0.64	0.09	-	-0.95	0.00	**
Between 100 and 500 km away	3.10	0.00	***	0.07	0.88	-	-0.00	1.00	-	1.08	0.00	**	-0.70	0.06	-	-0.77	0.02	*
More than 500 km away	0.55	0.41	-	-1.16	0.02	*	0.62	0.29	-	0.38	0.36	-	-0.80	0.04	*	-1.01	0.02	*
Child_closeness {ref. Not very close}																		
Somewhat close	0.53	0.76	-	-	-	-	3.35	0.02	*	-0.16	0.90	-	0.20	0.81	-	1.81	0.05	-
Very close	0.35	0.83	-	3.97	0.00	***	2.37	0.10	-	1.87	0.12	-	1.41	0.10	-	2.63	0.00	**
Extremely close	1.70	0.30	-	3.80	0.00	***	2.76	0.05	-	3.11	0.01	**	2.10	0.01	*	2.74	0.00	**
Child_contact {ref. Daily}																		
Several times a week	0.11	0.74	-	0.32	0.27	-	-0.37	0.09	-	0.12	0.46	-	0.31	0.03	*	0.78	0.00	***
About once a week	1.08	0.01	*	1.31	0.00	**	-0.18	0.60	-	0.45	0.11	-	0.59	0.00	***	0.98	0.00	***
About every two weeks	0.03	0.97	-	4.48	0.00	***	0.68	0.24	-	0.02	0.97	-	0.70	0.00	**	1.23	0.00	***
About once a month	5.65	0.00	***	-2.01	0.29	-	-0.99	0.23	-	3.42	0.00	**	0.65	0.06	-	0.88	0.02	*
Less than once a month	0.32	0.81	-	9.82	0.00	***	-6.23	0.01	*	-4.57	0.00	***	-0.21	0.76	-	2.41	0.00	***
Never	-	-	-	-	-	-	-	-	-	-	-	-	0.83	0.69	-	-	-	-

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