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AGE FEATURES OF A HAPPY LIFE IN RUSSIA AND EUROPE: AN ECONOMETRIC ANALYSIS OF SOCIO-ECONOMIC DETERMINANTS

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AGE FEATURES OF A HAPPY LIFE IN RUSSIA AND EUROPE: AN ECONOMETRIC ANALYSIS OF SOCIO-ECONOMIC DETERMINANTS

A comparative analysis of the age impact on happiness in Russia and European countries was conducted. The European Social Survey data in 2012 for 29 countries were used. On the basis of an ordered logistic regression, a U-shape relationship between age and happiness was obtained for some of the analysed countries.

By using cluster analysis, the countries were divided into 3 groups, in which the age effect varies greatly. In the counties of group 1 (for example, Iceland and Norway) happiness did not change at any age or increase smoothly in old age. Group 2 (Germany and France) had a clear U-shaped age-happiness form. Russia and some counties of former Soviet Union: Ukraine, Lithuania and Estonia were analysed in group 3, where the level of happiness decreased significantly in old age (over 60). In some countries (Belgium, Switzerland, Cyprus, Denmark, Finland, Israel, Italy, Sweden) all people were happy, regardless of age and the assumption of age-happiness U-shape relation was not found.

The socio-economic determinants of happiness were also analysed in different age groups. Income satisfaction and subjective health were the more significant characteristics.

JEL Classification: C15, C35, C38, I31.

Keywords: satisfaction, happiness, econometric modelling, age groups.

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1 Introduction

Life satisfaction and happiness are important characteristics of social well-being. Ensuring decent living standards is a priority of most countries in the world. Quality of life and life satisfaction, in particular, are objects of interdisciplinary study in economics, sociology, and politics. We define some concepts used in studies of life satisfaction. Subjective well-being is a broader concept that defines the psychological evaluation of people and their lives and includes cognitive and emotional components (Diener at al., 2003). The cognitive component includes life satisfaction, which depends on the assessment of various spheres of life, such as family, income, health, employment. The emotional component is associated with a person's positive or negative emotions (Myers, Diener, 1995). The level of well-being can also be determined on the basis of objective indicators: GDP per capita, crime rate, income level, etc. (Huppert at al., 2009; Lim, 2010). As a rule, most researchers consider happiness and life satisfaction as identical concepts, as we do. Later, we will show that these two concepts have a high statistical correlation. In this paper we consider age features in the assessment of happiness.

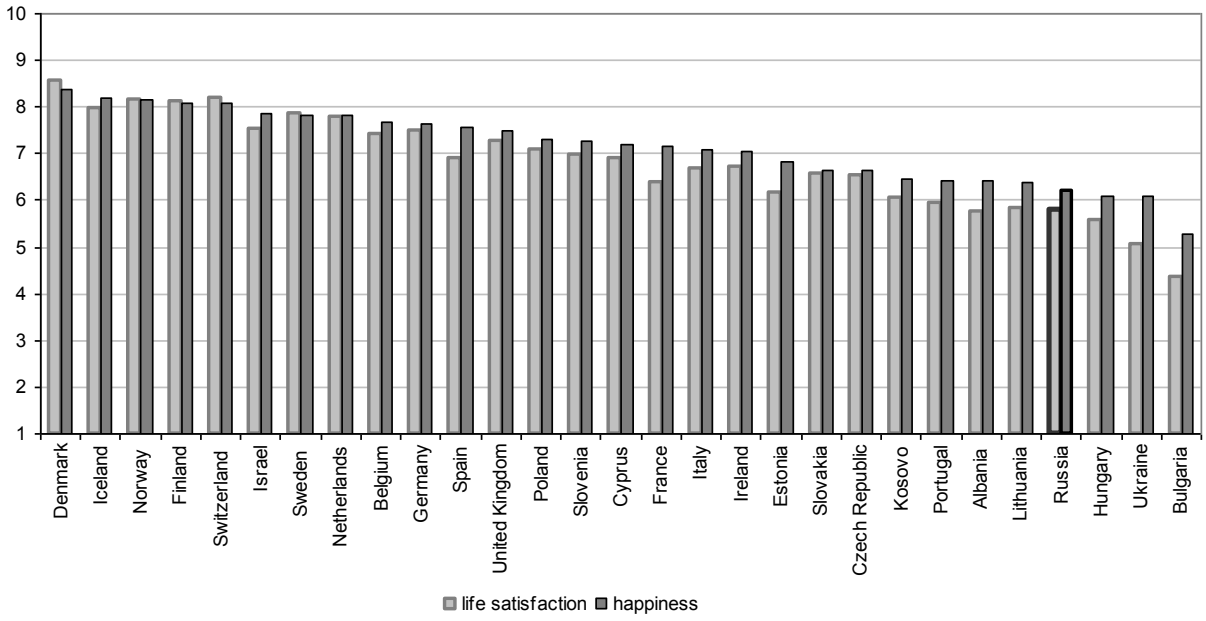

Figure 1. The happiness and life satisfaction (mean) in Russia and Europe in 2012.
Source:ESS

For international comparisons of happiness in Russia and countries of the world there are various sources of statistical information: Happy Planet Index (HPI)[3], the results of sociological

[3] Happy Planet Index (HPI) uses global data on life expectancy, experienced well-being and Ecological Footprint to calculate this: http://www.happyplanetindex.org (27.10.2015) HPI was calculated in 2006, 2009, 2012. The 2012 HPI report ranks 151 countries.

surveys, for example, ESS[4], and others. HPI in 2012 shows that Russia was 122nd out of 151 countries (34.5 points out of 100). According to European Social Survey (ESS) in 2012, Russia was 26th in terms of life satisfaction among the 29 countries that took part in the study (Fig. 1). The questionnaire contained two key questions for our study: "How satisfied are you with life as a whole?" and "How happy are you?" Possible answers were 0 – "Extremely dissatisfied"/ "Extremely unhappy", 10 – "Extremely satisfied"/ "Extremely happy". The average value of life satisfaction in Russia was 5.79, the average value of happiness was 6.22. The average value of life satisfaction and happiness for all countries were 6.76 and 7.11, respectively. Bulgaria was last in the ranking, and had an average value 4.34 for life satisfaction and 5.27 for happiness. Denmark was first (8.57 and 8.38, respectively). A similar situation was observed in previous waves of ESS. Respondents perceived the questions about life satisfaction and happiness as similar. This was confirmed by the high correlation coefficients between the variables "life satisfaction" and "happiness", constructed on the basis of respondents' answers (the Spearman's rank correlation coefficient was 0.714).

The purpose of this study is the comparative analysis of the impact of age on happiness in Russia and European countries. The structure of the paper is as follows. The second section provides a review of literature. The third section contains the main research hypotheses. The fourth section describes the data, descriptive statistics and methodology used in the study. The regression analysis results are presented in Sections 5. The paper ends with a discussion and conclusions.

2 Literature review

What is the shape of the relationship between the subjective assessment of well-being and age? How does life satisfaction depend on age? Most recent studies argue that a age-life satisfaction relationship exists (Argyle, 2001; Diener et al., 1999; Myers, 1992) and a U-shape is observed: in the early years life satisfaction level is high, and it then decreases, has a minimum value at middle age ("midlife crisis"), and then begins to rise at older ages (Clark, Oswald, 1994; Frey, Stutzer, 2002; Booth, Ours, 2008). Blanchflower and Oswald (2008) examined data for 1972–2006 in 100 countries and found a U-shaped form of dependence in 72 countries. Guriev and Zhuravskaya (2009) analysed economic problems of countries with economies in transition and developed countries. The researchers noticed that the gap in life satisfaction in countries with economies in

[4] ESS - European Social Survey. More details about the sample structure of ESS will be described in the section "4 Data and methodology".

transition and non-transition sharply increases with age. In developing countries, life satisfaction decreased monotonically with age, while in developed countries a U-shape form was found. Realo and Dobewall, (2011) carried out an analysis of the Nordic countries: Estonia, Finland, Latvia and Sweden. In Finland and Sweden there was no effect of age on life satisfaction. Other studies showed that the effect of age is not always significant and can depend on the method of study. (Frijters, Beatton, 2012; Kassenboehmer, Haisken-DeNew, 2012; Sutin et al. 2013).

The purpose of this study is to show how age influences the level of happiness depending on the country of residence, to classify the European countries according to the degree of age influence on the level of happiness, and to determine the place of Russia among the European countries.

There were several studies on the determinants of happiness in Russia, but these also vary. Kolosnitsyna et al. (2014) explored the determinants of elderly life satisfaction using RLMS data. This research showed significant gender differences in the factors of life satisfaction: an inverse U-shape relation between age and happiness was characteristic for the older females only; holding a job enhances life satisfaction for women but not for men; and the education level has almost no correlation with life satisfaction, while having children decreases an individual's happiness. Health status (only for females), personal income, type of settlement, and social status were strong predictors of life satisfaction for all Russians over 55. Andreenkova (2010) found an insignificant but positive correlation between life satisfaction and age based on Russian data. The author revealed that life satisfaction declines with age until 55–60, then increases to some extent and then decreases again after 70. This effect became statistically insignificant when other determinants of life satisfaction were controlled for. Aistov and Yakuncheva (2010) compared the "objective" assessment of living standards (according to Rosstat data) and subjective life satisfaction (according to RLMS data). Using RLMS panel data (2000–2007) the authors estimated ordered probit models and found that life satisfaction declined with age. Married people were more satisfied with their lives, the proportion of men who were satisfied with life was higher than that of women, the presence of children was negatively associated with life satisfaction, working people were more satisfied with life.

In our study the determinants of the level of happiness are defined in different age groups than Kolosnitsyna et al. (2014). Distinctions in the happiness level for different age groups will be discussed depending on the country of residence according to 2012 ESS data.

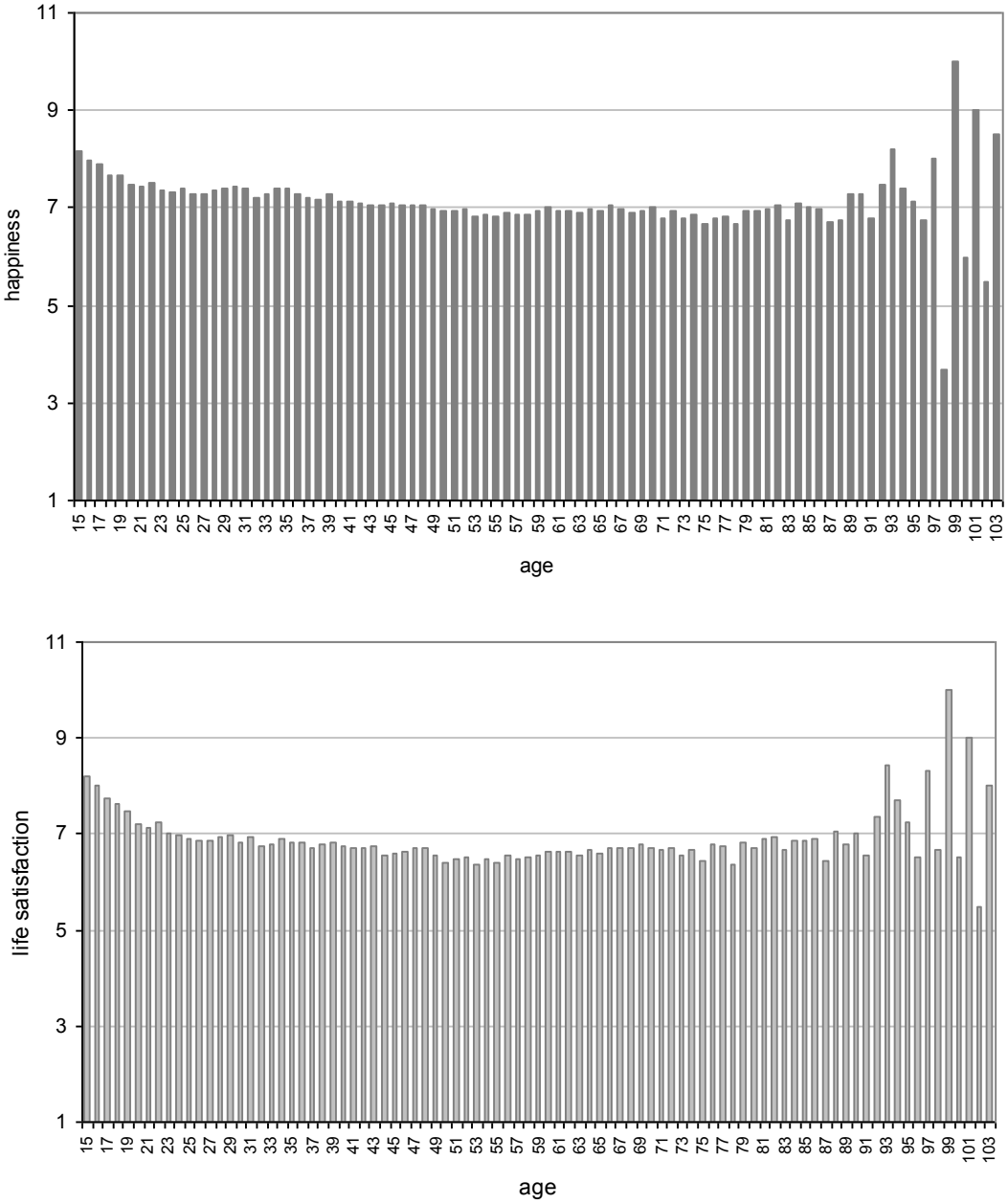

Figure 2. Relationship between happiness (life satisfaction) and age in 2012 (29 countries)
Source:ESS

3 Hypotheses

Hypothesis 1. The age effect on happiness level varies depending on the country of residence.

This difference is due to the variation of quality of life and the well-being of the population in European countries and Russia. All European countries are divided into groups according to the age-happiness relationship. In particular, Guriev and Zhuravskaya (2009) identified only two groups of countries — transition and non-transition economies. Other studies have shown that in

some countries (such as Finland and Sweden) the age effect was insignificant (Realo, Dobewall, 2011). These countries may also be put in separate group. In our view, the age effect on the level of happiness is more multifaceted. We assume that the number of clusters will be greater than two.

Hypothesis 2. Each age group has its own determinants of happiness.

We assume that for young people, family characteristics (such as marital status and children), and education are important; for middle-aged people the job and income are important and for older people material security and health and important. In particular, Kolosnitsyna et al. (2014) explored specifically the determinants of elderly life satisfaction. We also assume that these determinants differ not only by age, but also vary depending on the country of residence. For this reason analysis will be carried out separately by groups of countries.

4 Data and methodology

Data. We used individual data from round 6 of the ESS (2012) on 29 counties. Note that the ESS is an academically driven cross-national survey that has been conducted every two years across Europe since 2001. The survey measures the attitudes, beliefs and behaviour patterns of diverse populations in more than thirty nations. The composition of countries participating in the survey has changed in each wave. Russia took part in ESS in 2006, 2008, 2010 and 2012. The ESS data is available free of charge for non-commercial use and can be downloaded from website after a short registration. Samples are representative of all persons aged 15 and over (no upper age limit) resident within private households in each country regardless of nationality, citizenship or language. Individuals are selected by strict random probability methods at every stage. All countries must aim for a minimum effective achieved sample size of 1500, or 800 in countries with populations of less than 2 million after discounting for design effects. More information about ESS is on their website[5].

The total number of observations in 2012 was 53860 persons aged 15–103. Descriptive statistics of the sample are presented in Appendix 1. Fig. 2 shows the average values of happiness and life satisfaction depending on age in 29 countries, and there is a U-shaped effect. If we consider each country separately, it is possible to identify age features for respondents from each country. The form of the age-life satisfaction relationship differs significantly depending on the country. However, some countries are similar to each other and it can be divided into groups .

[5] ESS - European Social Survey: http://www.europeansocialsurvey.org/data (27.10.2015).

The first group included countries with high values of life satisfaction independent of age (Belgium, Denmark, Iceland, Israel, Netherlands, Norway, Finland, Sweden, Switzerland). In some countries there was a slight increase in the second half of life (for example, in Iceland and Norway). Typical examples of group 1 are Finland and Norway (Fig. 3), where the happiness level for all ages was not lower than 7 points and did not change depending on age.

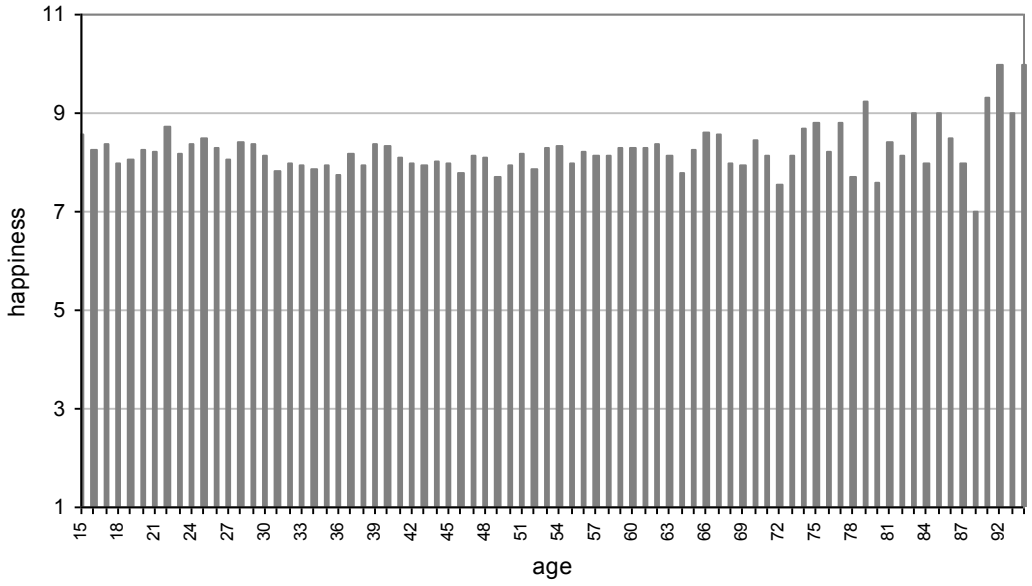

Figure 3. Relationship between happiness and age in Norway in 2012.
Source:ESS

Note that in 2015 according to Global AgeWatch Index[6] rankings for quality of life for those over 60, Norway, Sweden and Switzerland ranked first among the 96 countries. The countries for which the level of happiness decreases on average up to 40, followed by a slight increase and the average happiness level was always higher than 6 points made up the second group (United Kingdom, Germany, Ireland, Cyprus, Spain, France). France is a typical example of the group 2 (Fig. 4). The remaining 15 countries were attributed to group 3. Most of these countries were characterized by low average level of happiness and a decline in happiness during the greater part life. Bulgaria was a country with a monotonic decrease in life satisfaction among others and had the lowest happiness level. Russia was also attributed to the group 3 because the average level of life satisfaction was 5.79, happiness was 6.22 and there was a decrease in happiness up to 60 (Fig. 5).

[6] «Global AgeWatch Index 2015»: http://www.helpage.org/global-agewatch/population-ageing-data/global-rankings-table/ (27.10.2015). This rating took into account 13 different indicators for the four key domains of Income security, Health status, Capability, and Enabling environment/

Only after 65–70 years was a slight increase observed. According to Global AgeWatch Index (2015) on the quality of life quality of those over 60, Russian was 65th.

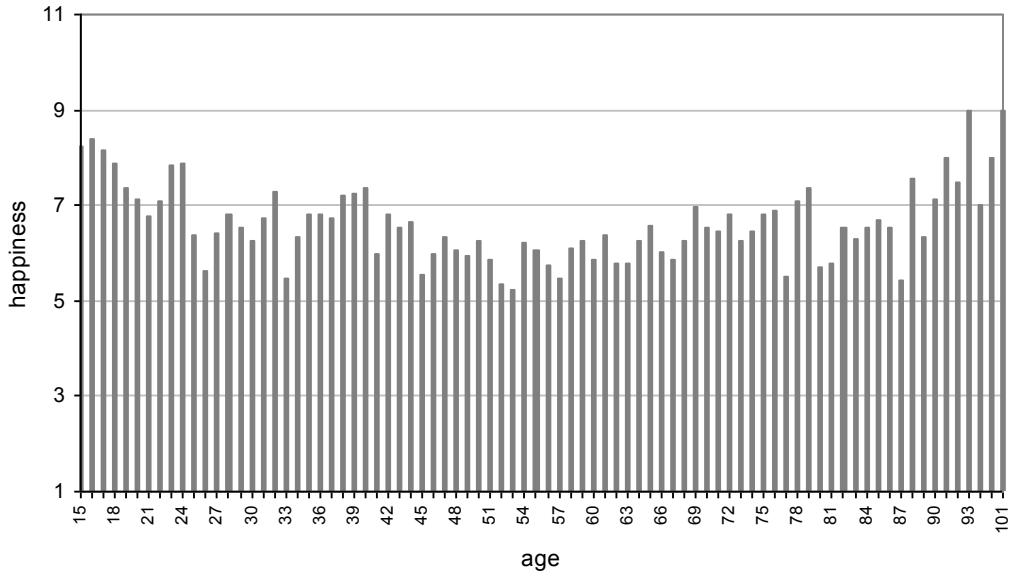

Figure 4. Relationship between happiness and age in France in 2012.
Source:ESS

Methodology. At the first stage, for each country the impact of age on happiness was estimated on the base of a logit model on the assumption that the relationship was parabolic. This assumption regarding U-shaped relationship between age and happiness occurred in all the papers in the literature review. At the second stage the estimates for the variables of age and age squared were used for dividing all countries into clusters using a hierarchic cluster analysis and K-means cluster analysis. The clusters differed in the degree of the influence of age on happiness. It allowed further comparative analysis in the homogeneous groups. At the third stage within each cluster socio-economic determinants of happiness for different age groups were studied based on an ordered logit model. A more detailed description of the contents for each step will be described in subsequent sections.

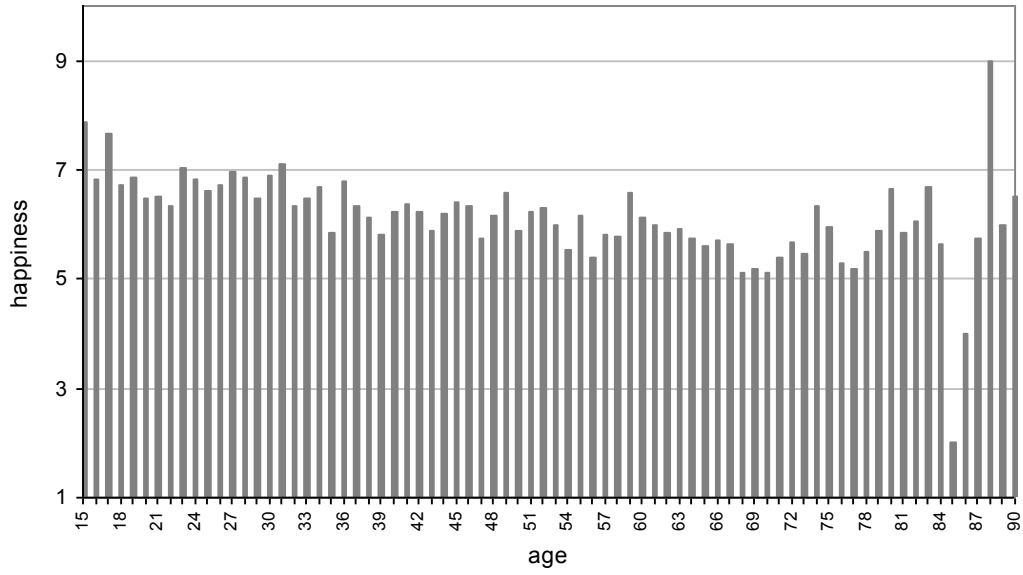

Figure 5. Relationship between happiness and age in Russia in 2012.
Source:ESS

Country classification according to the influence of age on happiness

To evaluate the effect of age on happiness, ordered logit models were estimated for each of the 29 countries of ESS. Table 1 shows the average level of life satisfaction, happiness, the estimated coefficients of ordered logit models for happiness depend on age and square age. In most countries, the age coefficients had the expected sign — positive in the case the square age, indicating that there was the expected U-shaped form. However, the results of the evaluation also showed that in 8 out of 29 countries the age coefficients were not statistically significant. We can assume that in these countries (Belgium, Switzerland, Cyprus, Denmark, Finland, Israel, Italy, Sweden) all people were happy, regardless of age and the assumption of age-happiness U-shape form was not found (in Table 1 these countries were highlighted in grey).

Table 1. Ordered logit models of happiness depending on the age by countries

Country	Life satisfaction (mean)	Happiness (mean)	Estimates of logit models		Number of observations
			age	age ^2	
Albania	5.77	6.44	-0.041***	0.0004**	1176
Belgium	7.44	7.69	-0.005	0.00004	1868
Bulgaria	4.34	5.27	-0.047***	0.0002*	2223
Switzerland	8.20	8.08	0.006	-0.0001	1488
Cyprus	6.91	7.19	-0.017	0.0002	1098
Czech Republic	6.56	6.66	-0.030***	0.0001	1912
Germany	7.48	7.63	-0.033***	0.0003***	2947
Denmark	8.57	8.39	-0.011	0.0002	1644

Estonia	6.19	6.82	-0.040***	0.0002**	2364
Spain	6.90	7.57	-0.044***	0.0004***	1881
Finland	8.11	8.08	-0.008	0.00000	2192
France	6.40	7.17	-0.047***	0.0004***	1967
United Kingdom	7.28	7.51	-0.049***	0.0006***	2252
Hungary	5.60	6.11	-0.046***	0.0003***	1991
Ireland	6.72	7.06	-0.044***	0.0005***	2610
Israel	7.54	7.86	-0.009	0.00003	2441
Iceland	7.96	8.21	-0.020	0.00034*	745
Italy	6.69	7.09	0.010	-0.0002	916
Lithuania	5.84	6.38	-0.069***	0.0003***	2030
Netherlands	7.77	7.81	-0.024*	0.0002	1842
Norway	8.14	8.16	-0.037***	0.0004***	1618
Poland	7.10	7.32	-0.046***	0.0003***	1866
Portugal	5.96	6.44	-0.053***	0.0003***	2129
Russia	5.79	6.22	-0.04***3	0.00025**	2422
Sweden	7.87	7.82	-0.006	0.0002	1841
Slovakia	6.98	7.26	-0.053***	0.0003***	1251
Slovenia	6.55	6.65	-0.064***	0.0005***	1809
Ukraine	5.05	6.07	-0.052***	0.0003***	2079
Kosovo	6.03	6.45	-0.077***	0.0006***	1258

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

In the remaining countries the assumption of age-happiness U-shape was confirmed. The resulting estimates of the age coefficients and happiness level were used to split countries into 3 groups.

Table 2. Composition of the cluster

Cluster 1: happiness increased in older age	**Cluster 2:** age-happiness U-shaped form	**Cluster 3:** happiness decreased in older age
Iceland, Netherlands, Norway	UK, Germany, Ireland, Spain, Poland, Slovakia, France	Albania, Hungary, Kosovo, Lithuania, Portugal, Russia, Slovenia, Ukraine, Czech Republic, Estonia

The results of cluster analysis (K-means and hierarchical method) showed that all the countries were divided into 3 groups. The composition of the clusters is shown in Table 2. Cluster 1 contained Iceland, Netherlands, and Norway; cluster 2 the UK, Germany, Ireland, Spain, Poland, Slovakia, and France; cluster 3 Albania, Hungary, Kosovo, Lithuania, Portugal, Russia, Slovenia, Ukraine, the

Czech Republic, and Estonia. Descriptive statistics of happiness, age coefficients for the clusters are shown in Table 3.

Table 3. Descriptive statistics of age-happiness relationship for clusters

Cluster	Variable	Minimum	Maximum	Mean	St. deviation
Cluster 1: Iceland, Netherlands, Norway (N=3)	Happiness	7.8100	8.2100	8.0586	0.2178
	Age (coefficient)	-0.0369	-0.0204	-0.0272	0.0086
	Age^2(coefficient)	0.0002	0.0004	0.0003	0.0001
Cluster 2: UK, Germany, Ireland, Spain, Poland, Slovakia, France (N=7)	Happiness	7.0600	7.6300	7.3608	0.2160
	Age (coefficient)	-0.0535	-0.0330	-0.0452	0.0063
	Age^2(coefficient)	0.0003	0.0006	0.0004	0.0001
Cluster 3: Albania, Hungary, Kosovo, Lithuania, Portugal, Russia, Slovenia, Ukraine, Czech Republic, Estonia (N=10)	Happiness	6.0700	6.8200	6.4233	0.2430
	Age (coefficient)	-0.0772	-0.0301	-0.0515	0.0146
	Age^2(coefficient)	0.0001	0.0006	0.0003	0.0001
Bulgaria	Happiness			5.2731	.
	Age (coefficient)			-0.0475	.
	Age^2(coefficient)			0.0002	.

The results confirm the initial assumptions about the character of the age impact on happiness for the groups of countries. After ordered logit models of happiness, the probabilities of the outcome *i* for each group were calculated:

$$P(\text{outcome}_j = i) = P(k_{i-1} < \beta_1 x_{1j} + \beta_2 x_{2j} + ... + \beta_m x_{mj} + u_j \le k_i), \quad (1)$$

u_j is assumed to be logistically distributed in ordered logit, $\beta_1, \beta_2, ..., \beta_m$ are coefficient estimates, $k_1, k_2, ..., k_{m-1}$ are cut-off points, *m* is the number of possible outcomes. k_0 is taken as -∞, k_m is taken as +∞.

(2) is valid for the corresponding probabilities (1).

Suppose $S_j = \beta_1 x_{1j} + \beta_2 x_{2j} + ... + \beta_m x_{mj}$, then

$$\begin{aligned} P(S_j + u_j < k) &= 1/\left(1 + e^{S_j - k}\right) \\ P(S_j + u_j > k) &= 1 - 1/\left(1 + e^{S_j - k}\right) \\ P(k_1 < S_j + u_j < k_2) &= 1/\left(1 + e^{S_j - k_2}\right) - 1/\left(1 + e^{S_j - k_1}\right) \end{aligned} \quad (2)$$

The probabilities of outcome P(happiness=10) depending on the age for different countries are presented in Fig. 6.

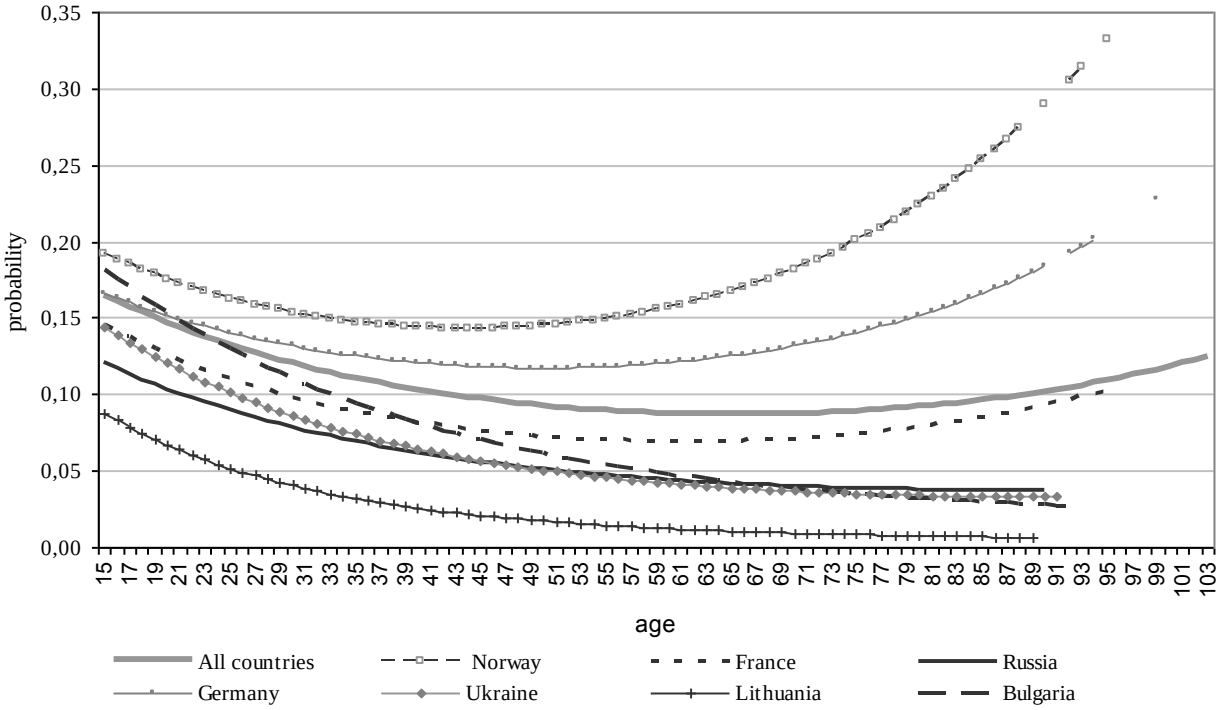

Figure 6. The probability of outcome P(happiness=10) depending on age for some countries (ordered logit model)

Fig. 6 shows that in the group 1 (the average level of happiness was 8.6) the probability of the outcome P(happiness=10) did not change at any age (Netherlands) or increased smoothly with age (Iceland and Norway). From Group 2 Germany and France were selectively examined. In Germany happiness was higher than in France and the age effect looked toward effect in the first cluster. Group 2 (the average level of happiness was 7.36) had a clear age-happiness U-shaped form.

Russia and some counties of the former Soviet Union: Ukraine, Lithuania and Estonia were analysed in the third group. In cluster 3 (the average level of happiness was 6.42) the probability of outcome P(happiness=10) was lower than the average level for all countries and decreased significantly with age. Lithuania demonstrated the lowest probability for all ages. Bulgaria was analysed separately. Bulgaria had the lowest average level of happiness (5.27) but the probability of outcome P(happiness=10) in younger age groups was very high and almost equal to the probability for the countries from cluster 1, but it declined sharply with age. In Russia the age effect has a negative tendency. Taking into account the age structure of the Russian population lower values of happiness for respondents over 60 is an alarming indicator of the quality of life of pensioners.

An analysis of the determinants of happiness by age groups in Russia and Europe

Three age groups: under 40, 40–60, over 60 were of greatest interest. Note that the age group under 40, as a rule, was characterized by a decrease in happiness level, stable indicators happiness were observed for the group 40–60, and the happiness level in the group over 60 behaved differently depending on the countries (respondents from cluster 1 were the happiest). A comparative analysis of the factors influencing happiness for different age groups were performed on the three clusters. The variables characterizing the socio-economic aspects of life such as work, income, health, communication were considered as determinants. Descriptive statistics of the respondents' socio-economic characteristics by cluster are given in Table 4.

Significant differences in happiness and income satisfaction were observed by cluster. 51% of representatives in cluster 1 responded that they were "Living comfortably on present income", 27% in cluster 2, and only 8% in cluster 3.

Table 4. Descriptive statistics of the respondents' socio-economic characteristics by cluster

Variable	Cluster 1		Cluster 2		Cluster 3	
	Mean	Std.Dev.	Mean	Std.Dev.	Mean	Std.Dev.
Happiness (0-Extremely unhappy, 10-Extremely happy.)	8.01	1.46	7.37	1.91	6.42	2.18
Age of respondent (15-99 years)	47.89	18.39	48.81	18.61	47.86	18.38
Gender (1-male, 2-female)	1.50	0.50	1.53	0.50	1.58	0.51
Feeling about household income:						
1- Living comfortably on present income	0.51	0.50	0.27	0.45	0.08	0.27
2- Coping on present income	0.37	0.48	0.49	0.50	0.42	0.49
3- Difficult	0.08	0.28	0.18	0.38	0.34	0.47
4 - Very difficult	0.03	0.16	0.06	0.23	0.17	0.37
Paid work (1 - yes, 0 -no)	0.55	0.50	0.45	0.50	0.46	0.50
Main activity last 7 days:						
1 - Paid work	0.55	0.50	0.45	0.50	0.46	0.50
2- Education	0.10	0.30	0.09	0.28	0.08	0.27
3 - Unemployed	0.03	0.16	0.08	0.28	0.09	0.28
4 - Permanently sick or disabled	0.05	0.21	0.03	0.16	0.02	0.13
5- Retired	0.18	0.38	0.25	0.43	0.26	0.44
6 - Housework	0.08	0.27	0.09	0.29	0.09	0.28
7 - Other	0.01	0.11	0.01	0.10	0.01	0.08
Job satisfaction (0 - extremely dissatisfied; 10 - extremely satisfied)	7.88	1.59	7.42	2.05	7.06	2.19
Satisfied with balance between time on job and time on other aspects (0 - extremely dissatisfied; 10 - extremely satisfied)	7.13	1.87	6.58	2.26	6.50	2.25
Total contracted hours per week	33.00	12.62	36.40	11.92	40.14	10.02
Total hours normally worked per week	36.60	14.79	39.88	14.21	42.07	12.48
Number of years of education	13.56	4.32	13.05	4.06	11.88	3.76
Marital status: 1 - married	0.49	0.50	0.52	0.50	0.50	0.50
2- divorced	0.11	0.31	0.08	0.28	0.11	0.32

3 - widow / widower	0.07	0.25	0.08	0.28	0.13	0.34
4 - never married	0.33	0.47	0.31	0.46	0.25	0.43
Children living at home (1 - yes, 0 - no)	0.36	0.48	0.38	0.48	0.41	0.49
Religiosity (0 - not believe, 10 - very religious)	4.39	3.05	4.70	3.07	4.86	3.14
How often socially meet with friends, relatives or colleagues, days per week (0 - 0 day, 7 - everyday)	5.43	1.30	4.73	1.57	4.48	1.75
Physically active for 20 minutes or longer last 7 days (0-7 days)	4.67	2.33	4.94	2.39	4.93	2.43
Subjective general health (1- very good, 5- very bad)	2.03	0.85	2.21	0.92	2.47	0.94
Number of observations	N=4206		N=14774		N=19170	

5 Results

In this paper ordered logit models of happiness were estimated for three age groups: under 40, 40–60, over 60 for the 3 clusters. All the estimated models were statistically significant at the 1% significance level, LR-statistics for each model are shown in Tables 4–6, the percentage of correctly classified cases for all models made up more than 80%.

Age group "over 60". The estimated ordered logit models of happiness (Table 5) showed that the material welfare of the respondents was among the significant characteristics in the cluster 2 and 3. Income satisfaction and paid work had a positive effect on happiness, but the impact of these variables were insignificant in cluster 1. This effect can be explained by the fact that in the countries of the cluster 1, respondents older than 60 years in general have a high income and do not need to worry about their material condition. The education effect in this age group was not statistically significant. Gender was significant only in cluster 3, which it may be associated with features of sex-age structure of the sample in the cluster 3. Women aged over 60 in the cluster 3 outnumbered men by a factor of 1.5.

Job satisfaction and satisfaction with the balance between work and time off work were also important and had a positive impact. Subjective health was also an important factor, the worse the respondents rated their health, the less happy they were. Physical activity led to a happy life only in the cluster 3. Family characteristics were also important for a happy life. Married respondents were happier than others. This effect was statistically significant for all groups. Communication with family, friends and relatives was a significant characteristic only for respondents in cluster 2. Religiosity and living together with children as a whole were positive determinants of happiness, but statistically insignificant.

Table 5. Ordered logit model of happiness (age group "over 60")

Variable	All sample	All sample (60+)	Cluster 1 (60+)	Cluster 2 (60+)	Cluster 3 (60+)
Gender	0.133***	0.0984	0.0001	0.0668	0.337**
	(0.0290)	(0.104)	(0.259)	(0.168)	(0.166)
Income satisfaction:					
«Living comfortably»	1.480***	1.325***	-0.099	1.427**	0.933**
	(0.0789)	(0.318)	(1.271)	(0.667)	(0.428)
«Coping»	0.974***	0.771**	-0.261	1.050	0.701*
	(0.0741)	(0.303)	(1.267)	(0.655)	(0.360)
«Difficult»	0.315***	-0.0772	-0.586	0.534	-0.107
	(0.0764)	(0.317)	(1.384)	(0.701)	(0.367)
Paid work	-0.215***	0.379**	-0.550	0.630**	0.603**
	(0.0747)	(0.182)	(0.428)	(0.290)	(0.279)
Job satisfaction	0.233***	0.294***	0.503***	0.357***	0.201***
	(0.0087)	(0.032)	(0.107)	(0.051)	(0.048)
Satisfied with balance between time on job and time on other aspects	0.0733***	0.144***	0.233***	0.136***	0.161***
	(0.0079)	(0.0299)	(0.080)	(0.0484)	(0.0461)
Total contracted hours per week	-0.007***	-0.0071*	0.0066	-0.0081	$1.51*10^{-5}$
	(0.0014)	(0.004)	(0.0105)	(0.0059)	(0.0073)
Education	0.0083**	0.0040	-0.015	0.0071	0.029
	(0.0041)	(0.0124)	(0.0280)	(0.0209)	(0.0207)
Marital status:					
divorced	-0.560***	-0.753***	-1.057***	-1.082***	-0.603***
	(0.0463)	(0.142)	(0.344)	(0.237)	(0.223)
widow / widower	-0.812***	-0.734***	-1.291***	-1.018***	-0.401*
	(0.087)	(0.157)	(0.487)	(0.271)	(0.220)
never married	-0.294***	-0.799***	-1.692***	-0.942***	-0.581*
	(0.0359)	(0.204)	(0.639)	(0.313)	(0.318)
Children living at home	0.161***	-0.0519	-0.126	-0.177	0.176
	(0.0311)	(0.119)	(0.369)	(0.190)	(0.173)
Religiosity	0.0321***	0.0389**	0.0288	0.0397	0.0238
	(0.00481)	(0.0169)	(0.0433)	(0.0278)	(0.0264)
Meeting with friends	0.180***	0.107***	0.0611	0.146**	0.0595
	(0.00967)	(0.0332)	(0.0969)	(0.0571)	(0.0487)
Physical activity	0.0054	0.0058	-0.0198	-0.0225	0.0691**
	(0.0064)	(0.0228)	(0.0585)	(0.0389)	(0.0346)
Subjective health	-0.474***	-0.425***	-0.294*	-0.378***	-0.365***
	(0.0195)	(0.0661)	(0.153)	(0.111)	(0.114)
Number of observations	16231	1369	261	541	567
LR-statistic	5312.50	591.37	86.74	230.11	164.86

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

The essential difference between the countries, where the happiness in the older age group significantly increased (as in Norway), countries the happiness a slight increased (as in France) or decreased (as in Russia) was determined, above all, by the level of material well-being and subjective health.

Table 6. Ordered logit model of happiness (age group "40–60")

Variable	All sample	All sample (40-60 years)	Cluster 1 (40-60 years)	Cluster 2 (40-60 years)	Cluster 3 (40-60 years)
Gender	0.133***	0.109***	0.461***	0.117*	0.162***
	(0.0290)	(0.0414)	(0.119)	(0.0659)	(0.0613)
Income satisfaction:					
«Living comfortably»	1.480***	1.601***	1.698***	1.806***	1.104***
	(0.0789)	(0.109)	(0.574)	(0.213)	(0.153)
«Coping»	0.974***	1.059***	1.471**	1.358***	0.806***
	(0.0741)	(0.101)	(0.573)	(0.208)	(0.122)
«Difficult»	0.315***	0.381***	0.646	0.569***	0.348***
	(0.0764)	(0.104)	(0.604)	(0.217)	(0.122)
Paid work	-0.215***	-0.539***	-0.182	-0.374*	-0.958***
	(0.0747)	(0.137)	(0.307)	(0.201)	(0.258)
Job satisfaction	0.233***	0.236***	0.394***	0.219***	0.217***
	(0.0087)	(0.012)	(0.044)	(0.018)	(0.018)
Satisfied with balance between time on job and time on other aspects	0.0733***	0.073***	0.149***	0.087***	0.063***
	(0.0079)	(0.011)	(0.0336)	(0.017)	(0.017)
Total contracted hours per week	-0.0067***	-0.005**	0.0157**	-0.0007	-0.0022
	(0.0014)	(0.002)	(0.0064)	(0.0031)	(0.0033)
Education	0.0083**	0.002	-0.0084	-0.0127	0.0112
	(0.0041)	(0.006)	(0.0135)	(0.0082)	(0.0099)
Marital status:					
divorced	-0.560***	-0.498***	-0.803***	-0.742***	-0.351***
	(0.046)	(0.057)	(0.161)	(0.098)	(0.079)
widow / widower	-0.812***	-0.835***	-2.054***	-0.948***	-0.620***
	(0.087)	(0.112)	(0.440)	(0.216)	(0.138)
never married	-0.294***	-0.390***	-0.844***	-0.511***	-0.352***
	(0.036)	(0.0599)	(0.146)	(0.0896)	(0.104)
Children living at home	0.161***	0.132***	0.213*	0.101	0.065
	(0.031)	(0.042)	(0.116)	(0.068)	(0.062)
Religiosity	0.032***	0.035***	0.021	0.049***	0.028***
	(0.005)	(0.007)	(0.019)	(0.011)	(0.01)
Meeting with friends	0.180***	0.178***	0.131***	0.167***	0.152***
	(0.01)	(0.013)	(0.044)	(0.022)	(0.019)
Physical activity	0.005	-0.01	0.0139	-0.0353**	0.019
	(0.006)	(0.009)	(0.024)	(0.014)	(0.014)
Subjective health	-0.474***	-0.481***	-0.471***	-0.338***	-0.583***
	(0.0195)	(0.028)	(0.078)	(0.0408)	(0.043)
Number of observations	16231	8262	1172	3394	3696
LR-statistic	5312.50	2887.43	360.31	961.69	1074.40

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

Age group "40–60". The estimated ordered logit models of happiness (Table 6) for the age group 40–60 indicated that gender (women were more happy), income satisfaction, job satisfaction, satisfaction with balance between work and time outside work, marital status (married people were the most happy) were important positive characteristics of a happy life.

Children living at home were statistically significant and had a positive impact on happiness only for respondents of cluster 1. In this age group, the positive role of religion (for respondents of cluster 2 and 3) and communication with relatives increased. Subjective health, as in the over 60 age group, had a negative effect. Paid work for cluster 2 and 3 also had a negative impact, but for cluster 1 each additional hour worked under contract increased happiness.

Table 7. Ordered logit model of happiness (age group "under 40")

Variable	All sample	All sample (<40 years)	Cluster 1 (<40 years)	Cluster 2 (<40 years)	Cluster 3 (<40 years)
Gender	0.133***	0.153***	0.115	0.141*	0.232***
	(0.029)	(0.045)	(0.128)	(0.074)	(0.064)
Income satisfaction:					
«Living comfortably»	1.480***	1.402***	0.493	1.589***	1.013***
	(0.0789)	(0.125)	(0.474)	(0.269)	(0.165)
«Coping»	0.974***	0.943***	0.241	1.194***	0.733***
	(0.0741)	(0.117)	(0.472)	(0.262)	(0.139)
«Difficult»	0.315***	0.323***	-0.577	0.539**	0.289**
	(0.076)	(0.121)	(0.513)	(0.272)	(0.141)
Paid work	-0.215***	-0.143	0.199	0.0517	-0.529**
	(0.075)	(0.105)	(0.193)	(0.174)	(0.231)
Job satisfaction	0.233***	0.219***	0.235***	0.226***	0.196***
	(0.009)	(0.0136)	(0.0402)	(0.0215)	(0.0201)
Satisfied with balance between time on job and time on other aspects	0.0733***	0.0658***	0.0948**	0.0764***	0.0835***
	(0.0079)	(0.0122)	(0.0375)	(0.0187)	(0.0185)
Total contracted hours per week	-0.007***	-0.008***	-0.00335	-0.0002	-0.0039
	(0.0014)	(0.0023)	(0.00608)	(0.0038)	(0.0034)
Education	0.0083**	0.0174**	-0.0316*	-0.011	0.0402***
	(0.0041)	(0.0071)	(0.0167)	(0.011)	(0.0119)
Marital status:					
divorced	-0.560***	-0.587***	-1.878***	-0.679***	-0.340***
	(0.0463)	(0.102)	(0.367)	(0.207)	(0.125)
widow / widower	-0.812***	-1.242***	0.786	-3.003***	-0.874*
	(0.0866)	(0.456)	(1.588)	(1.001)	(0.516)
never married	-0.294***	-0.281***	-0.255*	-0.414***	-0.258***
	(0.0359)	(0.0582)	(0.153)	(0.0916)	(0.0889)
Children living at home	0.161***	0.295***	0.413***	0.433***	0.130
	(0.0311)	(0.0565)	(0.148)	(0.0911)	(0.0856)
Religiosity	0.0321***	0.0295***	0.0206	0.0305**	0.0346***
	(0.0048)	(0.0076)	(0.0208)	(0.0122)	(0.0111)
Meeting with friends	0.180***	0.190***	0.175***	0.174***	0.174***
	(0.0097)	(0.0158)	(0.0558)	(0.0269)	(0.0216)
Physical activity	0.0054	0.0251**	0.0486*	0.0116	0.0476***
	(0.0064)	(0.0101)	(0.0276)	(0.016)	(0.015)
Subjective health	-0.474***	-0.432***	-0.532***	-0.418***	-0.418***
	(0.0195)	(0.0319)	(0.0944)	(0.0497)	(0.0474)
Number of observations	16231	6600	931	2584	3085
LR-statistic	5312.50	1845.20	205.51	641.27	770.81

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

Age group "under 40". (Table 7) Women of this age group were happier than men. Income satisfaction was only important for the respondents of cluster 2 and 3. Paid work was only important for respondents of cluster 3 and had a negative effect. However, job satisfaction and the balance between work and time outside of work were statistically significant for all clusters. The level of education was significant, but had the negative effect for cluster 1 and positive for cluster 3, living with children had positive effect for clusters 1 and 2. Respondents' religiosity (positive effect for clusters 1 and 3), meeting with friends, subjective health (negative effect) were important determinants.

6 Conclusion

Happiness is an important indicator of welfare and non-material well-being of the population. The age effect on happiness was investigated. The results testified that happiness changes with age, but the age effect varied greatly by country. In some countries (Belgium, Switzerland, Cyprus, Denmark, Finland, Israel, Italy, Sweden), people were equally happy throughout life and their feelings did not depend on age-related changes; a similar effect was obtained Realo and Dobewall (2011) for Finland and Sweden. In another group of countries (Iceland, Netherlands, Norway) the age effect had a U-shape. These countries are characterized by a high standard of living for the elderly. In the UK, Germany, Ireland, Spain, Poland, Slovakia, and France a stable parabolic age-happiness relationship was found, there was a "midlife crisis" effect. Finally, the last group of countries, which included Russia, Albania, Hungary, Kosovo, Lithuania, Portugal, Slovenia, Ukraine, the Czech Republic, and Estonia, is characterized by decreased happiness in the older age groups. It is a negative signal regarding the conditions and life quality of the elderly. These results were consistent with results of Guriev and Zhuravskaya (2009). In our work for the first time the countries participating in the ESS survey were divided into clusters according to the degree of age influence on happiness and a comparative analysis of happiness determinants was conducted. As the results showed, one of the important differences in the determinants of happiness in older age groups was satisfaction with financial situation and subjective health. Unfortunately, in Russia, in 2012 only 3% of people over 60 years said that they lived comfortably on their present income, while, for example, in Norway 67% of people said so. The results in Russia can be compared with Kolosnitsyna et al. (2014) for the older age group on RLMS data. The self-rated health status (only for females) and personal income also were a strong predictor of happiness. A similar effect was found according to ESS data, not only for Russia (for the older age group), but for the group of countries as a

whole. Health was an important determinant for almost all countries and age groups. Future research could examine this effect in more detail.

All analysis was conducted according to ESS data (2012). Further study of this issue could involve the analysis of previous and subsequent waves of ESS to reveal the dynamics: how stable over time our results are. Perhaps the age effect on happiness for each country has a permanent character and also depends on the macro-economic and political changes in society.

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Apendix 1

Socioeconomics determinants of happiness: descriptive statistics of sample

Variable	Obs	Mean	Std. Dev.	Min	Max
Happiness (0-Extremely unhappy, 10-Extremely happy)	53860	7.12	2.098	0	10
Age of respondent (15-99 years)	53860	48.26	18.58	15	103
Gender (1-male, 2-female)	53860	1.55	0.51	1	9
Feeling about household income:					
1- Living comfortably on present income	53228	0.24	0.43	0	1
2- Coping on present income	53228	0.43	0.495	0	1
3- Difficult	53228	0.22	0.42	0	1
Paid work (1 - yes, 0 -no)	53326	0.48	0.5	0	1
Job satisfaction (0 - extremely dissatisfied; 10 - extremely satisfied)	26422	7.43	2.04	0	10
Satisfied with balance between time on job and time on other aspects (0 - extremely dissatisfied; 10 - extremely satisfied)	26384	6.72	2.21	0	10
Total contracted hours per week	44949	37.47	11.59	0	168
Number of years of education	53468	12.55	4.03	0	51
Marital status: 1 - married	53696	0.19	0.39	0	1
2- divorced	53696	0.03	0.18	0	1
3 - widow / widower	53696	0.03	0.17	0	1
4 - never married	53696	0.11	0.31	0	1
Children living at home (1 - yes, 0 - no)	53860	0.39	0.49	0	1
Religiosity (0 - not believe, 10 - very religious)	53368	4.76	3.08	0	10
How often socially meet with friends, relatives or colleagues, days per week (0 - 0 day, 7 - everyday)	53605	4.796	1.63	1	7
Physically active for 20 minutes or longer last 7 days (0-7 days)	53118	4.76	2.45	0	7
Subjective general health (1- very good, 5- very bad)	53789	2.24	0.94	1	5

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