

AGE COHORTS AND HAPPINESS IN
UKRAINE: WHAT MATTERS IN
WHAT AGE

by

Kseniia Alekankina

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Thesis Supervisor: _____ Professor Hanna Vakhitova

Approved by _____
Head of the KSE Defense Committee, Tymofiy Mylovanov

Date _____

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Abstract

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David Cameron, ex-Prime Minister of the United Kingdom (2010-2016):
“It's time we admitted that there's more to life than money, and it's time we focused not just on GDP, but on GWB - general well-being. Well-being can't be measured by money or traded in markets. It's about the beauty of our surroundings, the quality of our culture and, above all, the strength of our relationships. Improving our society's sense of well-being is, I believe, the central political challenge of our times.”

This work tests the connections between different economic, social and demographic factors and level of happiness among Ukrainians. There is a lot of in-depth studies that analyze happiness and social determinants across age cohorts in different countries, but there are no such papers for Ukraine. My hypothesis is that the same factors are significant for Ukraine. To test it, I use the data from 18 waves of the survey conducted by KIIS (2005-2017). The analysis shows that only some of the factors (in particular those linked with family and income) that were used in researches for other countries have a predictable power for Ukrainians, while others are not significant or have opposite direction.

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LIST OF ABBREVIATIONS

GDP — Gross domestic product

NGO — Non-governmental organizations

KIIS — Kyiv International Institute of Sociology

Chapter 1

INTRODUCTION

In the modern world, a person's quality of life¹ in the country depends not only on material indicators such as GDP per capita, life expectancy, crime rate etc., but also on quality characteristics — gender equality, freedom to make life choices, and happiness.

The latter is extremely important because it is linked with the personal attitude to life, as well as “counted things”. Multiple studies show that happiness leads to numerical economic results, such as greater wealth (De Neve and Oswald, 2012), better health (Como, 2011), higher productivity (Oswald, Proto, and Sgroi, 2015), and stable job (Pryce-Jones, 2013). The level of happiness affects not only economic indicators, but also life expectancy: for aged people mortality is inversely associated with the number of occasions on which participants reported high enjoyment of their lives (Zaninotto et al., 2016). The risk of passing away in the next five years is 35% lower for the happiest old people², claims³ Andrew Steptoe, a psychologist and epidemiologist of the University College London (UCL). “*If happiness were to supplant GDP as a leading measure of societal well-being, public policy might perhaps be moved in a direction more meaningful to people's lives*”⁴, — said

¹ According Quality of Life Index for Country 2018 (NUMBEO) Ukraine takes 56th place out of 60 (https://www.numbeo.com/quality-of-life/rankings_by_country.jsp) and 69th out of 80 in the overall ranking of Best Countries (<https://www.usnews.com/news/best-countries/overall-full-list>)

² <http://www.sciencemag.org/news/2011/10/happiness-associated-longer-life>

³ 1.Happiness Associated With Longer Life <http://www.sciencemag.org/news/2011/10/happiness-associated-longer-life> By Helen Fields, Science, 2011

⁴ <http://theconversation.com/the-science-of-happiness-can-trump-gdp-as-a-guide-for-policy-57004>

Richard Easterlin, an economist at the University of Southern California, the author of the Easterlin Paradox⁵.

Economic development and happiness are correlated but not perfectly well. Klaus F. Zimmermann, a labour economist, during his speech at the conference “People matter”⁶ recalls that, according to the World Value Survey (1981–2004), Germans are as happy (2,98) as citizens in Bangladesh (2,96), while there is a great economic gap between these countries (GDP per capita, PPP, USD, 2004: Germany — 32633.96, Bangladesh — 1713.09)⁷.

Unfortunately, Ukraine with its GDP of \$8269.6 per capita, PPP (current international \$, 2016)⁸ is neither economically prosperous nor particularly happy. An important fact is that countries in transition show *ceteris paribus* lower level of happiness in comparing with their developed “colleagues.” (Guriev, Zhuravskaya, 2009). At the conference “People Matter” (2017) Sergiy Guriev made an update that for now transition is no longer a factor that influences the level of happiness of Ukrainians⁹. Approximately since 2012, people in Eastern European and Western European countries with the same income level have roughly the same level of satisfaction with their life. Nevertheless, Ukraine takes

⁵ The Easterlin Paradox is based on 2 contradictory facts that were found: 1) Within a country, people with higher income tend to be happier than people with lower income. 2) At the same time, rich societies tend not to be happier than societies with less income. Richard Easterlin connects this with the fact that life satisfaction and happiness rise with income but only up to a certain point, beyond that the marginal growth in happiness declines.

⁶ <http://www.kse.org.ua/en/about/kse-news/?newsid=2063>,
<https://youtu.be/ScTgWXISdEc>

^{7,8} <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>

⁹ <https://youtu.be/qPtbjSPe9IE>

only 132nd place (out of 155) in the Ranking of Happiness 2014-2016¹⁰. In The Happy Planet Index, the country is defined closer to the unhappy part of the scale (Appendix A).

While economic growth in general may require a long time and substantial resources, some of its steps such as decreasing unemployment or stabilizing and decreasing inflation can be achieved quite quickly and can have a significant (compared to other actions) effect on the people's level of happiness (Blanchflower, 2007).

In order to increase the level of happiness in Ukraine, both the society and the state should take into account the factors that could potentially influence it. Thus, it is critically important to understand whether the state can build policies for Ukraine based on international researches and experiences or they are irrelevant in the Ukrainian conditions. Previous surveys by KIIS show that in general the traditional determinants are significant for Ukraine – family, health status, level of education and income¹¹. But there is no analysis of whether or not these factors are equally important throughout life, so in my research I concentrate on this question.

¹⁰ World Happiness Report 2017 <https://s3.amazonaws.com/happiness-report/2017/HR17.pdf> (p.24)

¹¹ Speech of Vladimir Paniotto at the conference “People Matter” in September, 2017: <https://medium.com/@KSE/%D1%94%D0%BB%D0%B5%D0%BD%D0%B0-%D0%BD%D1%96%D0%BA%D0%BE%D0%BB%D0%BE%D0%B2%D0%B0-%D1%82%D0%BE%D1%82%D0%B0%D0%BB%D1%96%D1%82%D0%B0%D1%80%D0%BD%D0%B8%D0%BC-%D1%83%D1%80%D1%8F%D0%B4%D0%B0%D0%BC-%D0%B2%D0%B8%D0%B3%D1%96%D0%B4%D0%BD%D0%BE-%D1%81%D0%BF%D0%B8%D1%80%D0%B0%D1%82%D0%B8%D1%81%D1%8F-%D0%BD%D0%B0-%D0%BF%D1%80%D0%B0%D0%B2%D0%BE%D1%81%D0%BB%D0%B0%D0%B2%D1%8F-c25eb3be2e58>

If incentives to be happy at different ages are the same, stakeholders (international organizations working in Ukraine, government, policy-makers, and NGOs) should focus their efforts on policies similar to all citizens regardless of age. If incentives are not identical, applying the same policy to all citizens is not effective. Instead, different policies for different age groups should be developed.

In analyzing the determinants of the level of happiness, it is important to remember that happiness is not the most objective indicator of personal well-being. This problem is well-known from the first researches about happiness. The relevance of survey results was checked in two ways. First, the researchers checked how today's mood influences the survey results and found out that if these persons were surveyed two more times (two weeks ago and six months ago), the results changed insignificantly (Robinson and Shaver, 1969). The second way to make the reported results more objective is an external review of the person's level of happiness by psychologist, peers etc. The comparison of such evaluation and self-reported level of happiness showed (Wilson, 1967) that if we had a big sample of such judges – in general, results of their and self-evaluation would be similar.

One more important problem is that people from vulnerable groups could designate themselves as happy, but it does not mean that their problems should be ignored (at any level of happiness). This issue is also present in my study. 14.2% of all respondents reported their households as “do not have enough money even for food,” but 36.3% of them considered themselves as a happy or rather happy person¹². This result is important in the context of the fact that

¹² 5201 respondents from the sample of 36495 said that “do not have enough money even for food”, 1888 out of 5201 reported themselves as happy or rather happy (question ‘Do you consider yourself a happy person?’)

taking care of the level of happiness of Ukrainians is not everything that is required from the state. Although scientists claim (Adler et al., 2015) that being happy means more to people than earning well or having a successful career, the state's task is to contribute to the economic well-being of citizens, which does not only positively correlate with their level of happiness, but also provides the country's economy with resources.

The rest of the thesis is structured in the following way. Chapter 1 explains why the level of happiness is an important measurement in the world and why citizens of Ukraine have to take it into account. Chapter 2 describes the studies on relation between determinants of happiness and age of the respondents; Chapter 3 provides the methodology of the analysis; Chapter 4 describes the data that were used for the research; the main results can be found in Chapter 5; Chapter 6 gives a short summary and discusses the ways of increasing the level of happiness of Ukrainians.

Chapter 2

LITERATURE REVIEW

2.1 Easterlin paradox

In early studies, the level of happiness has often pointed to income as a key factor. In 1974, Richard Easterlin found that, while within a country, individuals with higher incomes often reported a higher level of happiness, this did not work at a national level. This result received a name of Easterlin paradox. After that publication, other scientists understood that the link between income and happiness is not so straightforward and marginal gain in happiness changes when a person or a country achieves a certain level of income. Castriota (2006) in his working paper tried to explain Easterlin Paradox through education: the higher the person's education level is, the less the income level (in absolute values) weights in life-satisfaction.

Ten years ago Stevenson and Wolfers (2008) published a critique to the Easterlin paradox. Using time-series data, the scientists showed that absolute income increase in their research is linked to a subjective level of happiness (on the individual and country level). The authors wrote that there is no "satiation point", only the level of happiness (in logarithm) is rising more slowly than the level of income.

In 2010, R. Easterlin published the paper that revisited the happiness-income paradox and showed that a long-term happiness does not rise with income. However, in the short term, the level of happiness and changes in income go together, happiness falls in economic contractions and increases in expansions.

Di Tella and MacCulloch (2008) try to explain this paradox through adaptation — in poor nations, a higher level of per capita income leads to a greater happiness, but there is no such pattern in rich countries. The same trend exists for poor and rich categories of citizens: people with low income are more sensitive to its increasing.

2.2 Happiness and socio-demographic characteristics

Over the last 20 years, a lot of interesting studies which take into account the links between happiness and socio-demographic factors were published.

In 2016, Mallory Montgomery publishes a job market paper where he figures out why women in surveys report a higher life satisfaction than men even if they have a worse education, job, health and lower income. Data (2011-2014) from the Gallup World Poll shows that men and women use different response scales and if they are normalized, in general women are less happy than men. The research (Khodarahimi, 2013) that analyzed the role of gender and age on happiness using the data from Iran verifies these findings. Siamak Khodarahimi finds that men show the higher level of happiness than women (controlled by age). But not everything is clear. Pagnol and Easterlin (2008) decided to take a look at the level of happiness over the lifecycle and found out that both age and gender influence on the reported level of happiness: early in the adult life women are happier than men because they are closer to fulfilling their family and material goods (car, house, trips to other countries) aspirations. Later in life men come closer to their goals in the named fields, so they become to be happier than women.

Approximately at the same time, in the 2000s, many papers studying the factors of happiness at different age periods were published. Lelkes (2008) wrote that different levels of life satisfaction over the life cycle could be explained by changing preferences (through decreasing the importance of work, increasing the role of religion, increasing the importance of marriage). Interestingly, Hsu et al. (2015) find that in Taiwan the level of happiness is no different across the age cohorts, but the factors, which influence it, differs: for youngsters social trust and control over their life are important; for middle-aged person's family status and social capital are significant; for older people a higher economic status is what matters most. If we talk about economic factors, Blanchflower (2007) points out that young and old people have different reasons for being more or less happy. For example, the former category is concerned about inflation, whereas the latter group is concerned about unemployment.

It is also interesting to understand the picture more broadly - how satisfaction in different parts of life influences the person's happiness in general. In his study, Nordenmark (2017) tested the influence of a gender in countries with different gender regimes on the family life and workplace evaluation which influenced one's level of happiness in general. The two major results are obtained: i) family satisfaction is more important than job satisfaction for the general level of happiness in both – men and women, ii) in countries with a conservative gender regime, the level of happiness among women is lower in general; for men in such countries the level of family life satisfaction appears less important for the level of happiness. The research that was conducted in Thailand (Senasu, Singhapakdi, 2014) studied the linkages between family, health, job satisfaction, and happiness using the poll data of employed people proportioned to the population, age, and household income in each region of Thailand. The analysis results indicate that all three types of satisfaction (i.e., family, health, and job satisfaction) have

positive effects on the present happiness, but only family satisfaction has a significant influence on the future happiness in Thailand.

A research for Latin America expanded the topic of studying (Terrazas-Carrillo et al., 2016) by adding parenthood indicator to the list of other indicators: impact of gender, work-family satisfaction on general life happiness. Overall, men were happier than women, but women reported higher levels of family life satisfaction. Results indicate that being male, having a full-time decent job and family satisfaction, and the presence of children in the household are positive predictors of happiness. One more factor that can influence the level of happiness is the place of living. One research that examines housing conditions from the point of city size is by Glaese et al. (2014). It shows that residents of declining cities are less happy than their fellow citizens from blooming settlements, although the former people do not reallocate to better places. Such a situation can be related to lower housing costs in declining cities. For Ukraine, this factor can also be significant through the fact that many cities are now failing, due to the fact that they were developed around large industrial enterprises which are closed now.

Quite recently, scientists (Adler et al., 2015) decided to check if people are really aimed to happiness or they are willing to sacrifice happiness for other attributes in their lives that are commonly considered as determinants of happiness (income, health, education, career, family satisfaction). Using the information obtained from a large sample of the United Kingdom and the United States citizens, they find that individuals prefer all types of happiness to other attributes except health. And what is important for my study, people prefer affective happiness (feeling good) over evaluative (life satisfaction) and eudemonic (worthwhileness) components.

2.3 Happiness and external factors

It is possible to distinguish external factors which have a significant effect on the person's level of happiness. Some researchers look into the influence of natural disasters and war, which could influence the level of happiness, either directly, or through the effect on other factors: the availability of work, housing, health, loss of loved ones.

Yamamura (2012) studied a long-term effect of disasters on those who managed to survive in the event, using the example of Hanshin-Awaji earthquake (1995) and individual-level data of Japan 2000-2008. The results show that people who went through the earthquake experience *ceteris paribus* are happier than people who did not meet this disaster and that the effect disappears with time. The fully opposite result was obtained by Calvo et al. (2015) who studied the effect of Hurricane Katrina on women who were surveyed 1 year before and 1 and 4 years after the event. The research shows that happiness fell down from pre-Katrina to 1 year after Katrina, but the reported level of happiness is very similar between the pre-disaster and 4 years' post-disaster (except for women who lived alone and could not overcome the consequences of the disaster such as a house destroying, losing a loved one, etc.). Ukraine has had an experience of a big technological disaster – Chernobyl catastrophe in 1986 – which has a long-term effect on the well-being of affected individuals (Danzer and Danzer, 2014).

It is interesting to compare this finding with results of researches about the effects of war. On the one hand, these events are fairly similar – both lead to shambles, infrastructure collapse, job loss, house destroying and physical damage. But on the other hand, natural disasters, as a rule, occur unexpectedly and do not last long. After this, the process of restoration of what was destroyed begins. While

the war covers territories gradually, but can go on for several months and even years. Shemyakina and Plagnol (2012) concentrated on the armed conflict in Bosnia and Herzegovina (1992-1995). The analysis is based on the individual-level and region-level variation to determine the changes made by the war. The traumatic experience has a negative, long-term and significant effect on the subjective level of happiness and this effect is even more stronger for displaced people.

This issue is very relevant for Ukraine, which in 2014 faced the occupation of the Crimea and continues to live in the conditions of the military conflict in the Donbas (Donetsk and Luhansk regions). At the same time, the paper that studied the effect of these events on the level of happiness of Ukrainians already exists. Coupe and Obrizan (2016) tested how the war affected happiness in Ukraine and found that the war has at most a small negative effect on the level of happiness of Ukrainians apart from the Donbas region, which directly suffered from the war activities. Taking into account this finding, I will not dwell on this issue in my work. Instead, my work is concentrated on economic and socio-demographic predictors that determine the level of people`s happiness.

Chapter 3

METHODOLOGY

3.1 Basic model

The hypothesis of the study is that in Ukraine, like in other countries (for example, European countries (Lelkes, 2008) or Taiwan (Hsu et al., 2015), different factors determine the level of happiness in different age groups.

In order to check it, I use the methodology based on the one used in the paper by Coupe and Obrizan (2016). The scientists use a probit model and controls for a set of mainly exogenous characteristics including age, gender, indicators for employment and higher education, and a dummy for respondents living in a city.

My estimations are based on a two type of models: logit and ordered logit. The logit model defines the dependent variable using a cumulative distribution function of the logistic distribution.

- 1) Simple logit model with only 2 possible states of the dependent variable: happy and other (1 or 0). Respondents who are get into the “happy” group asked “Yes” or “Rather yes than no” on the question “Do you consider yourself a happy person?”, “Other” - all other answers in particular “Hard to say”.

This model helps to estimate which factors are significant for prediction the happy self-feeling of individuals.

- 2) Ordered logit model that includes the 5 possible states of the dependent variable: no; more likely no, than yes; yes, and no; more likely no, than yes; rather yes, than no; yes.

Here I will be able to observe that changes in independent variables will increase or decrease the level of happiness in one category.

3.2 Potential problems

Going to the territory of learning happiness, we face well-known econometric problems - endogeneity, simultaneity, multicollinearity, heteroscedasticity¹³. There are a few variables that can cause the problem. The level of happiness influences the job status and the job status influences the level of happiness. Or maybe both of them are influenced by the level of education and health? Does higher income make individuals happier or are happier individuals with a better career path? Do happy people live longer, so aged people look happier due to the «paradox of the survivor»?

The reason for the potential problems is the likelihood that the model does not include controls that influence the dependent and independent variables simultaneously due to the limited size of information in the surveys, and that there is a loop of causality between the explanatory and response variables. These problems could be resolved by using fixed effect model, all controls (that is probably impossible in the real life with the available data) proxies, and instrumental variables. In some models with panel data scientists use lagged

¹³ The presence of heteroscedasticity in logit models is a nontrivial task and scientists continue to discuss how it is better to struggle with it (Allison (1999), Williams (2009))

values of predictors as an instrument (Wooldridge, 2009), but I have time-series data so I cannot use this method.

On the other hand, adding too many controls could lead to a multicollinearity, which occurs when the regression includes a lot of explanatory variables correlated to each other. It increases standard errors of coefficients and decreases a significance of them making variables statistically insignificant when they are expected to be significant. Correlation matrices can help to assess the problem.

3.3 Estimated regression

To compare the effects of factors for selected age cohorts, I estimated four separate regressions – one for each age group (18-29 years; 30-39, years; 40-59 years; 60+ years). They are formed from the 6 age cohorts in the KIIS surveys (18-29, 30-39, 40-49, 50-59, 60-69, 70+) by collated 40-49 and 50-59 in the one category “40-59 years”, which can be called as “experienced specialists” - people who probably have an established career. One more cohort 60+ years combined from two cohorts “60-69” and “70+” proceed in such a way through 2 reasons: i) before the pension reform voted in 2017¹⁴ 55 years was the retired age for women, 60 years - for men, so these age cohorts can be named as “retired people”. ii) By Ukrstat¹⁵ in Ukraine an average life expectancy at birth is 66.73 years for men and 76.46 years for women, which can be a reason for unbalanced in terms of gender cohort “70+”, where could be present predominantly women

¹⁴ http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=62088

¹⁵ http://www.ukrstat.gov.ua/operativ/operativ2007/ds/nas_rik/nas_u/nas_rik_u.html

and men who are untypical (long-livers) that could lead to some selection problem.

Logit basic model:

$$\begin{aligned} \text{level of happiness} = F(\beta_0 + \beta_1 \text{gender}(\text{man}) + \beta_2 \text{family status} + \beta_3 \text{family size} + \\ \beta_4 \text{education} + \beta_5 \text{health} + \beta_6 \text{city size} + \beta_7 \text{region} + \beta_8 \text{life satisfaction} + \beta_9 \text{personal life} \\ \text{satisfaction} + \beta_{10} \text{job status} + \beta_{11} \text{work satisfaction} + \beta_{12} \text{loss job} + \beta_{13} \text{unemployment} + \\ \beta_{14} \text{income perception} + \beta_{15} \text{inflation} + \beta_{16} \text{money loss} + \beta_{17} \text{year}), \end{aligned}$$

Where,

level of happiness – 1 if happy, 0 otherwise in the first model, or expressed in 5 categories from “unhappy” to “happy” in the second model.

β_0 – intercept

The explanatory variables are grouped as following:

Socio-demographic characteristics

gender(man) – 1 if man, 0 – otherwise. The sign of the coefficient must be positive because men, in general, are happier than women (based on previously listed studies: Montgomery (2016), Khodarahimi (2013)).

family status – 1 if married, 0 – otherwise.

family size – 1–5 persons or more

education – education in dummies. There are 8 categories from primary education (less than 7 classes) to full higher education. The recent studies (Albert and Davia, 2005; Blanchflower and Oswald, 1994) showed contradictory results, so I can expect a positive sign if it is correlated with more paid and interesting job, or

negative, if education increases person's future expectations about income and job position, but there is no such a demand on the market.

health – health evaluation by the respondent (1 – “bad”, 4 – “very good”).

citysize – size of city measured in the number of citizens (in dummies). Based on the paper by Glaese et al. (2014) the bigger city size might lead to the bigger level of happiness (the biggest part of the effect can be indirect - through the higher income, more opportunities for making a career and so on).

region – East, West, Centre, South, North of Ukraine (Appendix B).

Life satisfaction as a predictor for the level of happiness

life satisfaction – satisfaction with life, 5 categories from “Not at all satisfied” (1) to “Fully satisfied” (5).

personal_life_satisf – satisfaction with personal life, 5 categories from “Not at all satisfied” (1) to “Fully satisfied” (5).

Factors linked to work and economics

job status - type of /un/employment.

work_satisf – satisfaction with work, 5 categories from “Not at all satisfied” (1) to “Fully satisfied” (5). Previous researchers show that this indicator should correlate with the level of happiness.

lost job – 1 if had a loss job in the previous year, 0 – otherwise. Probably loss job could have a negative effect on the level of happiness.

unempl – looking for a job (unemployed) (1 – “yes”, 0 – “no”).

income perception – an answer to the question “Please look at this card and tell me which of the judgments best fits your household's finances?” from 1 – “We do not have enough money even for food” to 5 – “We can afford everything we want”. Researches show that in a short-run income could be a good predictor for the level happiness.

inflation – cumulative inflation from the beginning of the year to the month of the survey. By Blanchflower (2007) it can hurt younger and more educated people.

money loss – 1 if had a money loss in the previous year, 0 – otherwise. Probably money loss could have a negative effect on the level of happiness.

I also include variable *year* for controlling significance of external unobserved factors (for example war, political environment, victories in sports championships etc.)

These variables were selected following the studies discussed in the previous chapter. A lot of variables that are based on the self-evaluation which is simultaneously advantage and disadvantage of the model. Such things are hard to measure, but they are really adequate predictors for the level of happiness, which are also subjective variable. The full description of the variables is available in Appendix C.

Chapter 4

DATA DESCRIPTION

This study is based on the Omnibus organized by Kyiv International Institute of Sociology (KIIS). There are 18 waves for the period December 2005 – May 2017 conducted with frequency 1-3 surveys per year. This survey was conducted in 26 Ukrainian regions during the period 2005-2013. From 2014 polls are not conducted in the occupied Autonomous Republic of Crimea and in the occupied territories of the Luhansk region. At the same time, polls are conducted in the occupied and unoccupied parts of the Donetsk region. Each set contains around 2 thousand of individual observations and the question “Do you consider yourself a happy person?”, together it provided 36,495 observations. If we drop responses of individuals who do not report their level of happiness at all, 36,461 observations are left in the dataset.

Preparation of the data included such actions:

- 1) Pooling all datasets into one;
- 2) Unification of the record of answers for different years;
- 3) Construction of new variables;
- 4) Data cleaning.

More than half of respondents who represent all Ukraine¹⁶ (by random multistage sampling for the survey) reported themselves as a “happy” or “rather happy” person – 57.2%. I would like to note that in Ukraine pensioners are less happy than middle-aged and young people (see Figure 1) that contradicts the researches

¹⁶ From 2014, except Crimea and part of the Luhansk region

for other countries that report “U-curve” (Blanchflower, 2017; Graham and Pozuelo, 2016) and the same level of happiness for all age cohorts (Hsu et al., 2015) (see Figure 1).

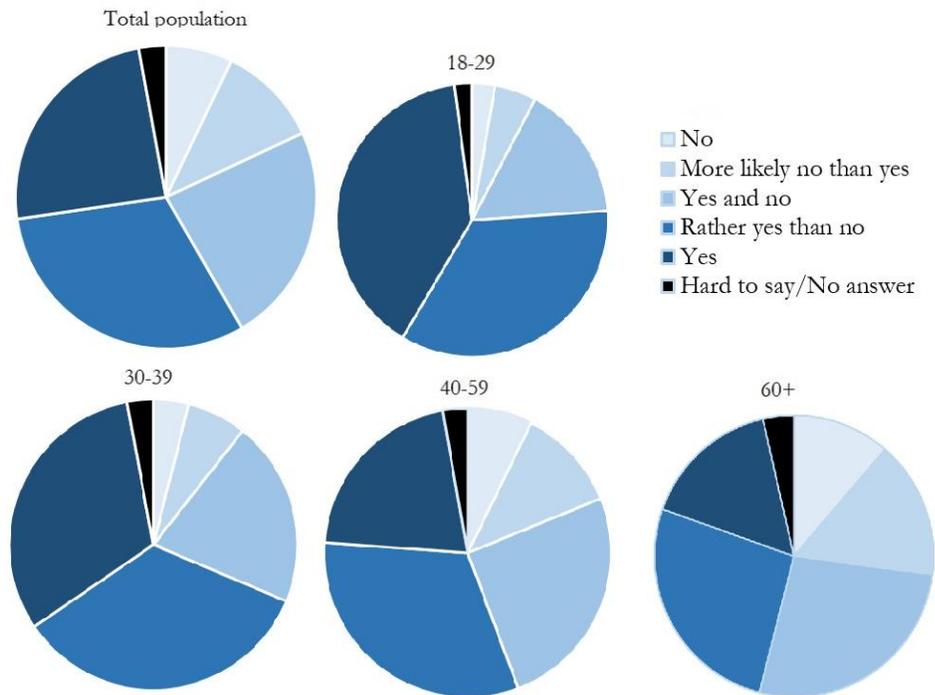


Figure 1. Answer to the question “Do you consider yourself a happy person?” divided by age cohorts (%)

Given the features of the dataset - it does not have continuous and traditional discrete numerical variables (Appendix C). All data (except inflation) is either categorical or dummy variables (see Table 1).

Table 1. Descriptive statistics of variables distribution

Variable	Responses	Frequency	Percent
<i>Level of happiness</i>		35,396	
Do you consider yourself a happy person?	No	2,614	7.4
	More likely no than yes	3,973	11.2
	Yes and no	8,577	24.2
	Rather yes than no	11,338	32
	Yes	8,894	25.1
<i>Gender</i>		35,396	
	Woman	21,906	61.9
	Man	13,490	38.1
<i>Family status</i>		7,839	
	Other	2,812	35.9
	Married	5,027	64
<i>Education</i>		35,131	
What kind of education do you have?	Primary (less than 7 classes)	1,087	3.1
	Incomplete secondary	1,687	4.8
	RU, FZU, vocational school after grades 7-8	1,014	2.9
	Complete secondary, general (grades 10-11)	7,521	21.4
	SPTU, vocational school after grades 10-11	3,289	9.4
	Secondary special	10,724	30.5
	Incomplete higher education	1,443	4.1
	Full higher education	8,366	23.8
<i>Health</i>		23,376	
How are you evaluate your health?	Bad	2,122	9.1
	Medium (neither good nor bad)	9,451	40.4
	Okay	8,079	34.6
	Very good	3,724	15.9
<i>City size</i>		35,396	
	Village	11,526	32.6
	Urban-type settlement	2,988	8.4
	A small town (up to 20 thousand inhabitants)	1,462	4.1
	Average city (20 - 99 thousand)	5,745	16.2
	Large city (100 - 499 thousand)	7,649	21.6
	Very large city (more than 500 thousand)	6,026	17

Table 1 — Continued

Variable	Responses	Frequency	Percent
<i>Region</i>		35,396	
	Crimea	1,056	3
	East Ukraine	6,753	19.1
	South Ukraine	5,934	16.8
	North Ukraine	5,643	15.9
	Central Ukraine	7,299	20.6
	West Ukraine	8,711	24.6
<i>Life satisfaction</i>		14,803	
Tell me, to what extent do you not satisfied or satisfied your life as a whole now?	It does not matter to me	42	0.3
	Not at all satisfied	734	5
	More unsatisfied, than satisfied	2,128	14.4
	Neither satisfied, nor unsatisfied	5,714	38.6
	More satisfies than does not satisfy	4,861	32.8
	Fully satisfied	1,324	8.9
<i>Personal life satisfaction</i>		10,656	
Tell me, to what extent do you not satisfied or satisfied by your personal life	It does not matter to me	1,096	10.3
	Not at all satisfied	558	5.2
	More unsatisfied, than satisfied	685	6.4
	Neither satisfied, nor unsatisfied	1,818	17.1
	More satisfies than does not satisfy	2,735	25.7
	Fully satisfied	3,764	35.3
<i>Job status</i>		30,346	
What is your main work?	Worker, agricultural worker	4,476	14.8
	Employee (occupation, not requiring higher education)	2,956	9.7
	Specialist (occupation requiring higher education)	3,412	11.2
	Busy with self-employment	759	2.5
	Entrepreneur, owner of his business, farmer	599	2
	Military man, servant of law enforcement bodies	141	0.5
	Housewife/househusband	2,530	8.3
	I am retired (by age, disability)	11,359	37.4
	I'm studying (student)	989	3.3
	Looking for a job (unemployed)	2,529	8.3
	Other	596	2

Table 1 — Continued

Variable	Responses	Frequency	Percent
<i>Work satisfaction</i>		6,276	
	It does not matter to me	451	7.2
	Not at all satisfied	233	3.7
	More unsatisfied, than satisfied	477	7.6
	Neither satisfied, nor unsatisfied	1,577	25.1
	More satisfies than does not satisfy	2,006	32
	Fully satisfied	1,532	24.4
<i>Loss job</i>		11,859	
(during year)	No	10,960	92.4
	Yes	899	7.6
<i>Unemployed</i>		35,396	
Job status	No	32,867	92.9
	Yes	2,529	7.1
<i>Income perception</i>		34,836	
Please look at this card and tell me which of the judgments best fits your household's finances?	We do not have enough money even for food	5,043	14.5
	We have enough money for food, but it is already difficult to buy clothes	15,703	45.1
	We have enough money for food and clothes, and we can postpone a certain amount, but this is not enough to buy expensive things (such as a TV or a refrigerator)	11,950	34.3
	We can afford to buy some expensive things (such as a TV or a refrigerator)	2,041	5.9
	We can afford everything we want	99	0.3
<i>Family_ec_fut</i>		13,204	
Do you think a year later your family will live better or worse than it is now?	Much worse than now	545	4.1
	Much worse	2,789	21.1
	Just like now	6,619	50.1
	Somewhat better	2,544	19.3
	Much better	707	5.4
<i>Year</i>		35,396	
Year when the survey was conducted	2005-2017	1938 - 3931 per year	5.5 - 16.7 per year

Table 1 — Continued

Variable	Responses	Frequency	Percent
<i>Inflation</i>		35,396	
Cummulative inflation from the beginning year till the month of survey	Min	-0.002	
	Mean	0.0654842	
	Std. Dev.	0.0824087	
	Max	0.332	

In such case the mean, min, max, standard deviation have not a lot of meaning, therefore, in addition to distribution statistics, I make the graphic analysis of the distribution of answers to the questions (Appendix D).

In the initial dataset respondents are divided into 6 age cohorts: 18-29, 30-39, 40-49, 50-59, 60-69, 70+. I have combined them to get four cohorts: 18-29, 30-39, 40-59, 60-70+ (the motivation is present in the previous chapter) (Figure 2).

Regarding a gender structure of a dataset, we will see that women are prevailed among respondents (61.9% - female, 32.1% - male), this situation is explained by the demographic structure of Ukrainian society, where the total number of women is larger than the number of men (total population, 2017 – 42.4 million citizens, 51.4% - women, 48.6% - men (Appendix E).

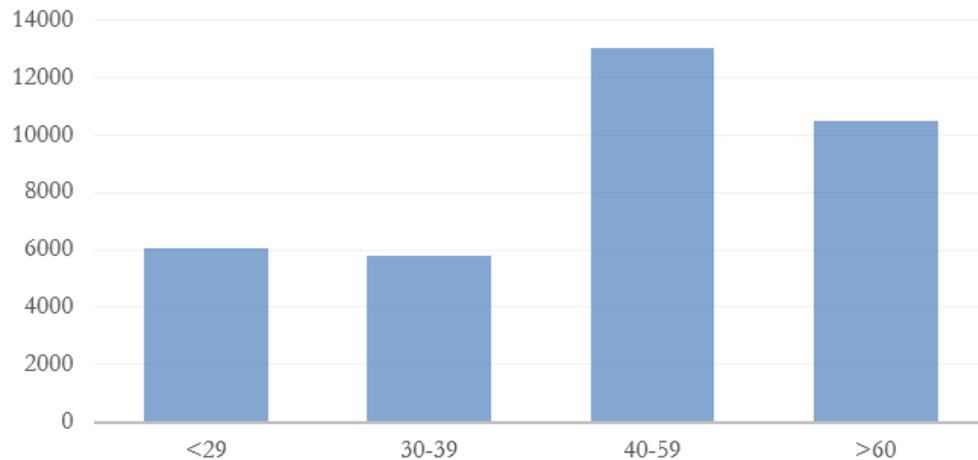


Figure 2. Age cohort`s distribution in the dataset

An important fact is that the absolute number of young men (below the age of 30) is higher than women, but later on, the situation is opposite. Due to higher mortality among men at a young age, the share of women exceeds the share of men at older age¹⁷. Following the fact that only adult Ukrainians (over 18 years of age) participated in KIIS survey, it is expected to observe the predominance of female responses. Nevertheless, it is not a problem for the study because of a large enough number of male responses in the dataset.

The age structure of the dataset corresponds to the country's situation. In 2017 in Ukraine there were nearly 26 million people of working age (15-70 years old)¹⁸ and 11.9 million pensioners (by age and by disability, in case of loss of

¹⁷ Table according to census data in 2001:

http://2001.ukrcensus.gov.ua/results/demografic_population/demografic_1/sel_21?box=2.1W&rz=1.1&k_t=00&botton=cens_db

Population Pyramid according to census data in 2001:

http://2001.ukrcensus.gov.ua/results/demografic_population/graphic

¹⁸ <https://www.ukrinform.ua/rubric-society/2154419-reva-ozvuciv-kilkist-pracuucih-v-ukraini.html>

breadwinner)^{19 20}. Approximately the same number of respondents are in the “18-29” and “30-39”, but twice more at “40-59” and “60+” categories (Figure 2). This clearly shows the problem of the aging of the population in Ukraine.

Consistent with the literature (Clark, Oswald (1996), Stevenson and Wolfers (2008)), in a short-run income perception is significant for the level of happiness, the statistical analysis of the data confirms that the higher income is also associated with higher level of happiness in Ukraine (see Table 2). Previous research (Coupe and Obrizan, 2016; Glaese et al., 2014) takes into account the place of residence of respondents.

Table 2. The connections between income and happiness

Cohorts	# of people in the cohort	"happy", "rather happy" in a cohort, # of people	happy, "rather happy" in a cohort, %	High income*, # of persons	High income*, %	"happy", "rather happy" among people with a high income, # of people	"happy", "rather happy" among people with a high income inside a cohort, %
Cohorts 1-3	25578	15616	61.05	1958	7.66	1543	78.80
Cohort 4	10883	4616	42.41	208	1.91	134	64.42

* Define for respondents who either answer: "We can afford to buy some expensive things (such as a TV or a refrigerator)", "We can afford everything we want"

In Ukraine, this factor also can be important through the bad quality of life and lack of resources in the villages and small towns. Statistics show that in cities the

¹⁹ http://www.ukrstat.gov.ua/operativ/operativ2007/sz/sz_u/srp_07rik_u.html

²⁰ These category crossed through the fact that person in working age can be retired and there is more than 26 mln persons older than 15 due to the fact that pension age does not ended in 70, so elder citizens just do not counted in the report by the Ministry of a social policy

percent of “happy” or “rather happy” people is higher than in the villages (see Table 3).

Table 3. The connections between the size of a city and the level of happiness

City size	Total number of respondents who live there	"happy" or "rather happy", # of people	"happy" or "rather happy", %
Village	11924	6213	52.10
Urban-type settlement	3066	1562	50.95
A small town (up to 20 000 inhabitants)	1497	820	54.78
Average city (20 - 99 000)	5911	3455	58.45*
Large city (100 - 499 000)	7887	4591	58.21*
Very large city (more than 500 000)	6176	3590	58.13*

The dataset also contains other possible predictors, in particular, the level of satisfaction by different spheres of life (life in general, work, personal life), but because of the fact that different sets of questions were present in different waves of the survey, the size of subsamples with such responses is limited. The variables that describe the level of inflation was taken from the website of the State Statistics Service of Ukraine²¹. For the regression, I used not the yearly inflation, but cumulative inflation – from the beginning of the year until the month of conducting the survey. More detailed distribution of questions by survey waves can be found in Appendix F.

²¹ http://www.ukrstat.gov.ua/operativ/operativ2006/ct/cn_rik/isc/isc_u/isc_gr_u.htm

Since the level of happiness is a subjective indicator, I suppose there is a lot of non-obvious factors that affect the level of happiness and are not included in the regression. Nonetheless, many variables in the dataset are real predictors of the level of happiness (that was showed in the previous chapter) and should help to estimate a model.

Chapter 5

EMPIRICAL RESULTS

This chapter describes the estimation results of two type of logit model which are presented in Chapter 3.

5.1 First model (logit): 2 possible states of the dependent variable: “happy” and “other”

Due to the fact that not all variables are present in each dataset, I should split the basic regression into several ones, in order to check the influence of variables which do not cross in different waves of the survey. So, first of all, I check economic variables, and after I will work with socio-demographics.

For Ukrainians of all age cohorts, income is an important and significant predictor of the level of happiness (see Table 4). The higher is income, the more positively it affects the person`s self-feeling. The effect is larger in magnitude for the two middle categories (increasing the probability to be a happy person by 39-180%).

But for the richest people the level of income loses its predictable power and the indicator is significant only for the youngest and pre-retired age cohorts, which is a good proof of the results obtained by Di Tella and MacCulloch`s paper (2008) – through the effect of adaptation poor and vulnerable groups of citizens are more susceptible to income growth in comparison with rich Ukrainians.

Table 4. Marginal effects of economic factors (simple logit model)*

	age_cohort_1 9-29	age_cohort_30 -39	age_cohort_4 0-59	age_cohort_60+
dummy_happyness				
<i>Income perception (base - We do not have enough money even for food)</i>				
2. We have enough money for food, but it is already difficult to buy clothes	0.454* (0.194)	0.677*** (0.194)	0.423*** (0.108)	0.392*** (0.095)
3. We have enough money for food and clothes, but this is not enough to buy expensive things	0.726*** (0.195)	1.243*** (0.201)	0.752*** (0.116)	1.024*** (0.117)
4. We can afford to buy some expensive things (such as a TV or a refrigerator)	1.307*** (0.260)	1.427*** (0.266)	1.411*** (0.177)	0.943*** (0.271)
5. We can afford everything we want	1.702* (0.775)	1.815 (1.121)	1.691** (0.54)	1.431 (0.878)
<i>Inflation</i>				
Cummulative (from the beginning of the year to the month of survey)	0.711 (1.116)	-0.740 (1.114)	-0.465 (0.687)	0.406 (0.741)
<i>Job status</i>				
8.I am retired (by age, disability)	0.406 (0.703)	-0.710 (0.455)	-0.219 (0.098)	-0.114 (0.297)
10. Looking for a job (unemployed)	0.031 (0.204)	-0.071 (0.195)	-0.205 (0.125)	0.541 (0.892)
<i>Loss job (last year; base – yes)</i>				
0. No	0.2 (0.193)	0.232 (0.168)	0.214 (0.117)	0.027 (0.319)
<i>Money Loss (last year; base – yes)</i>				
0. No	0.198 (0.229)	0.737*** (0.209)	0.404** (0.137)	0.745*** (0.18)
N	1794	1590	3848	3352

Note: The full results are available in Appendix G.

For Ukrainians, one more factor is important – it is also related to the money - loss of money in the previous year. Its effect is higher for middle-aged (30-39) and oldest (60+) individuals. I suppose that it is due to such factors: i) persons in age 30-39 often have a child(ren) who are in the care of parents, so the loss of money is reflected not only on them but also on other (non-earning) members of the family; ii) aged people do not have a lot of opportunities to cover losses by new revenues.

Blanchflower says *«I find that unemployment depresses well-being more than inflation. The .. old are more concerned about unemployment than inflation. Conversely, the young ... are more concerned about inflation.»* But my research shows that economic predictors, present in Blanchflower (2007), are not important for Ukrainians.

These findings highlight the important role of the level of income on Ukrainians, it is more influential than other analyzed economic factors (job status, unemployment, inflation).

It is interesting that some years (2005, 2010, 2011, 2014) have a significantly positive effect on level of happiness (Appendix H), it means that there are external factors which are important for the person's self-feeling. The reasons should be analyzed in further researches.

A lot of studies (Senasu, Singhapakdi (2014), Glaese et al. (2014) etc.) attach great importance to the non-economic factors of determining the level of happiness, for example, to a place of living, health, family status, and gender. In Ukraine, the important indicators are the same as all over the world (see Table 5).

Table 5. Marginal effects of socio-demographic factors (simple logit model)*

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
<i>City size (village –base)</i>				
2. Urban-type settlement	-0.223 (0.156)	0.192 (0.146)	-0.154 (0.09)	-0.164 (0.101)
3. A small town (up to 20 thousand inhabitants)	0.026 (0.195)	0.426* (0.203)	-0.040 (0.116)	0.247* (0.129)
4. Average city (20 - 99 thousand)	0.292* (0.118)	0.497*** (0.113)	0.164* (0.071)	0.191* (0.079)
5. Large city (100 - 499 thousand)	0.152 (0.103)	0.248* (0.096)	0.224*** (0.064)	0.175* (0.071)
6. Very large city (more than 500 thousand)	0.431*** (0.117)	0.197 (0.109)	0.111 (0.071)	0.097 (0.077)
<i>Gender (woman - base)</i>				
Man	0.211** (0.076)	0.135 (0.073)	0.260*** (0.048)	-0.158** (0.054)
<i>Health evaluation (bad –base)</i>				
2. Medium (neither good nor bad)	0.781*** (0.187)	0.730*** (0.141)	0.926*** (0.067)	0.874*** (0.054)
3. Okay	1.822*** (0.184)	1.730*** (0.143)	1.964*** (0.077)	1.749*** (0.099)
4. Very good	2.644*** (0.236)	2.749*** (0.263)	2.843*** (0.229)	1.843*** (0.305)
N	4007	3843	8523	7003

Note: The full results are available in Appendix G.

Being a male predicts a higher level of happiness during the whole life except the most later ages. It is not surprising that health self-evaluation is significant for all age cohorts. In comparing with a bad health evaluation, healthier people are 70-

280% more likely to be happy, the size of effect approximately the same among all age groups.

Although Ukraine is considered as a country with a strong agrarian sector, it is important to note that living in villages and urban-type settlement decreases the level of happiness of Ukrainians. Average and very large cities is a good predictor of for higher probability to be happy among youngest persons (29% and 43% respectively), old Ukrainians prefer to live in small and not very large cities.

I would like to highlight the great role of family in provision of life contentment (see Table 6, Table 7).

Table 6. Marginal effect of the family status (simple logit model)

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
<i>Family status (married – base)</i>				
0. Other	-0.387**	-0.513***	-0.655***	-0.437***
	(0.129)	(0.143)	(0.087)	(0.084)
<i>_cons</i>	1.433***	0.877***	0.400***	-0.005
	(0.094)	(0.067)	(0.045)	(0.058)
<i>N</i>	1386	1323	2798	2332

There is a strong significant difference between married (officially) and unmarried persons. The other statuses have the most negative effect on middle-aged people. And this fact is consistent with Leikes' (2008) findings that the importance of marriage is increasing over the life cycle.

Not only status by itself but also a family size is important for Ukrainians, Especially after midlife (see Table 7). My estimations show that for two oldest cohorts, the more family members live with the respondent (the question in the survey was: “How many people, including you, live with you?”), the happier he/she is (increasing the probability to be happy on 30-90%). It can be an indicator of a lack of social interaction outside of the family for old people. At the same time, for the youngest Ukrainians, having a big family (five and more members) is insignificant for the youngest age cohort.

Table 7. Marginal effect of the family size (simple logit model)

	age_cohort_1 9-29	age_cohort_30- 39	age_cohort_40- 59	age_cohort_60+
dummy_ happyness				
<i>Family size (1 person – base)</i>				
2. Two persons	0.647* (0.327)	-0.008 (0.317)	0.371** (0.141)	0.331*** (0.099)
3. Three persons	0.601 (0.309)	0.278 (0.300)	0.633*** (0.143)	0.429** (0.139)
4. Four persons	0.639* (0.316)	0.299 (0.304)	0.748*** (0.153)	0.458** (0.171)
5. Five persons	0.530 (0.352)	0.392 (0.338)	0.797*** (0.183)	0.599** (0.228)
6. More	0.530 (0.352)	0.288 (0.372)	0.993*** (0.220)	0.946*** (0.260)
<i>_cons</i>	0.49 (0.291)	0.560* (0.280)	-0.378** (0.124)	-0.552*** (0.075)
<i>N</i>	1418	1232	2879	2338

Obtained results attract the attention to the most important determinants of happiness for Ukrainians – the income, living in a comfortable conditions (of a middle or a big city), and having a family. For policymakers, these should be the beacons that show where to turn their attention and on the development of which areas to direct efforts.

Young Ukrainians need city developing and social elevators to be more happy and productive and they are worried about development, whereas adults rather need stability - low inflation, stable job, family.

5.2 Second model (ordered logit): 5 possible states of the dependent variable “level of happiness”: from “no” to “yes”

The second model helps to highlight the factors which are further from one level of happiness to another.

Similar to the previous model, ordered logit shows that income perception (having enough money for the life) has the strong positive influence on increasing the level of happiness (especially for middle-aged people). The increase of the income on one category leads to raising the level of happiness to 0.1 – 1.5 categories (Appendix G). The income perception (having enough money for a living) and losing money in the previous year (that can decrease the category of happiness on 0.7) are the only two permanent significant indicators in the dataset.

For ordered regression, the level of happiness is strongly connected with the size of a city (the difference between people who live in villages in comparing with urban citizens reaches 0.2 happiness categories) (Appendix G). I would like to add that in my research the geographic component is not significant.

Official marriage positively and significantly affects all age cohorts, raising the level of happiness by 0.2 - 0.6 (the more strong effect for people 40-59 years old) (Appendix G). The big family (there are 416 respondents in my dataset who answer that have six or more members in a household) could raise the level of happiness on 0.6 – 1 category. The effect is insignificant only for the second age cohort. Probably such strong effect can be linked with some unobserved effects²² and should be studied separately.

5.3 Connection between the prediction of happiness and different satisfaction measurements

A lot of scientists suggest to use the different satisfaction measures to evaluate the level of happiness. Such method was tested by Nordenmark (2017) who find that family and job satisfaction are good predictors for the happiness for both – men and women, and by Thai researchers (Senasu, Singhapakdi, 2014), who show that three types of satisfaction (i.e., family, health, and job satisfaction) have positive effects on the present happiness.

I have tested whether these predictors have power for estimation of happiness among Ukrainians using simple logit model (see Table 8).

The table shows that in Ukraine the most of satisfaction types cannot be used as a substitute for the question of the level of happiness. Only the life satisfaction variable can be a predictor of happiness of a respondent.

²² More than 80% from these families have middle income, so probably this effect is not associated with high income.

Table 8. Marginal effect of satisfaction indicators (simple logit model)

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
<i>Life satisfaction (base - Not at all satisfied)</i>				
2. More unsatisfied, than satisfied	0.490 (0.605)	-0.032 (0.524)	0.791* (0.387)	-0.571 (0.725)
3. Neither satisfied, nor unsatisfied	0.141 (0.543)	0.401 (0.468)	1.180*** (0.353)	0.441 (0.585)
4. More satisfied than unsatisfied	1.542** (0.546)	1.570*** (0.477)	2.094*** (0.361)	2.126*** (0.635)
5. Fully satisfied	1.702** (0.628)	2.433*** (0.636)	2.518*** (0.417)	3.663*** (1.001)
<i>Work satisfaction (base - Not at all satisfied)</i>				
2. More unsatisfied, than satisfied	0.245 (0.472)	-0.025 (0.483)	-0.395 (0.297)	-0.990 (0.764)
3. Neither satisfied, nor unsatisfied	0.497 (0.377)	0.258 (0.373)	0.072 (0.237)	-0.078 (0.405)
4. More satisfied than unsatisfied	0.422 (0.356)	0.537 (0.369)	0.230 (0.231)	-1.188** (0.454)
5. Fully satisfied	0.544 (0.373)	0.43 (0.374)	0.267 (0.240)	-0.582 (0.469)
<i>Income satisfaction (base - Not at all satisfied)</i>				
2. More unsatisfied, than satisfied	-0.19 (0.398)	-0.082 (0.329)	-0.112 (0.21)	-0.405 (0.493)
3. Neither satisfied, nor unsatisfied	0.025 (0.387)	0.148 (0.315)	0.201 (0.197)	0.214 (0.471)
4. More satisfied than unsatisfied	0.709 (0.433)	0.816* (0.366)	0.492* (0.235)	0.684 (0.552)
5. Fully satisfied	0.727 (0.575)	1.392* (0.698)	0.483 (0.337)	0.39 (0.706)

Table 8 - Continued

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
<i>Health satisfaction (base - Not at all satisfied)</i>				
2. More unsatisfied, than satisfied	0.801 (0.701)	0.017 (0.531)	0.192 (0.299)	-0.647 (0.483)
3. Neither satisfied, nor unsatisfied	0.389 (0.595)	-0.035 (0.455)	0.055 (0.266)	0.012 (0.465)
4. More satisfied than unsatisfied	0.856 (0.578)	0.463 (0.456)	0.487 (0.278)	0.497 (0.521)
5. Fully satisfied	1.058 (0.603)	0.475 (0.497)	0.974** (0.331)	-0.311 (0.864)
<i>_cons</i>	-1.068 (0.734)	-1.321* (0.62)	-1.783*** (0.427)	-1.279 (0.772)
<i>N</i>	683	705	1372	301

Chapter 6

CONCLUSIONS

In my thesis, I have investigated main predictors of the level of happiness for different cohorts of Ukrainians. I have found, that among economic factors income and loss of money last year are the most important determinants of the level of happiness. In contrast to Blanchflower (2007), inflation and unemployment are insignificant predictors of the level of happiness in Ukraine. Money loss is most depressing for the aged people. At the same time, young people take it more easily.

Among socio-demographic factors, the good predictors of level of happiness are health status, size of the city where a respondent lives, a family status, and a number of family members who live with an individual. It is also important to highlight the strong differences between age cohorts of Ukrainians. The level of happiness of youngest Ukrainians is strongly connected with a large cities; big family is a not significant factor for them and they are less hurt by an absence of an official partner. Mid-aged persons (30-39 years old) are most happy in smaller cities, but they depend on family status but not size. The importance of family becomes stronger with age – family is a very strong predictor of the level of happiness for people of third (40-59 years) and fourth (60+ years) age cohorts. These results echo with Hsu et al.'s (2015) findings — factors, which influence the level of happiness, differs for different age cohorts. Hsu at al report that social trust and control over their life are more important for youngsters; for mid-years persons, family status and social capital are significant; for older people, a higher economic status is what matters most.

The different types of satisfactions (except life satisfaction) are not significant for Ukrainians. It could indicate that people feel unsecure about their future, and their current high health status or income do not translate into the satisfaction into these spheres.

To make different age cohorts of Ukrainians happy, policymakers should develop well-considered policies designed for specific age groups. Citizens who are at the beginning of their career path have to be encouraged to move to big cities and start independent life. Middle-aged people need conditions for family building, so the state should push policies aimed for it, probably through the labour and family legislation (Wharton and Blair-Loy, 2006; Burton Peter and Phipps Shelley, 2011). Oldest citizens want to be a part of a big family (or community) and be protected from losing money. The latter goal should be obtained through the financial insurance and education programs that will be aimed at explaining how to protect themselves from fraud.

My findings could be a starting point for a deeper study of the factors that are able to make Ukrainians happier and as a result healthier, more productive and long-living and for development of policies that can help to achieve these goals.

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APPENDIX A

Level of happiness of Ukrainian citizens

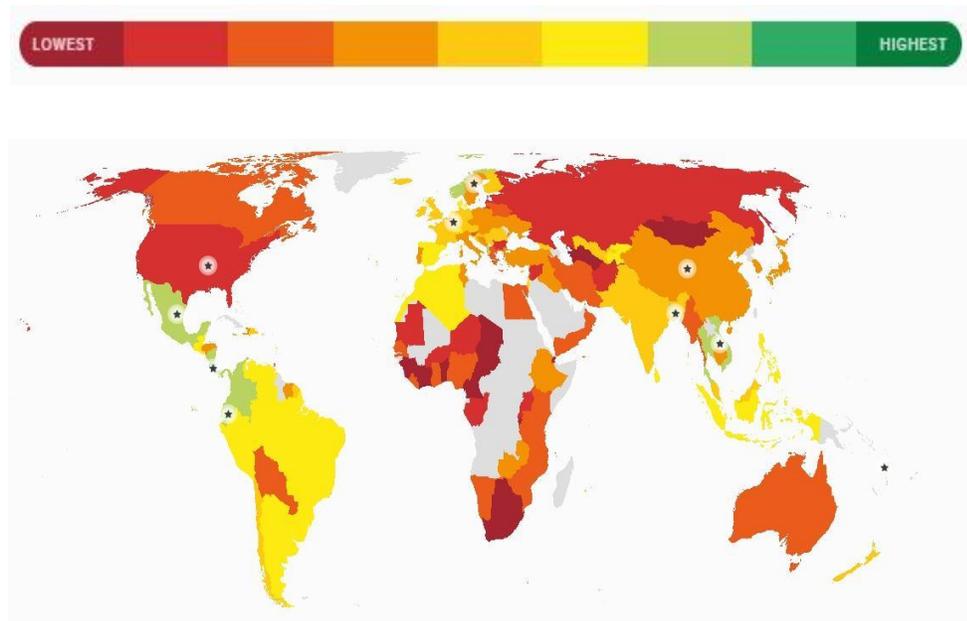


Figure 3. Level of wellbeing due to The Happy Planet Index

Source: <http://happyplanetindex.org>

The measurement is based on subjective wellbeing, life expectancy, inequality of outcomes and Ecological Footprint (global hectares (gha) per person)

APPENDIX B

The division of Ukraine into geographical regions

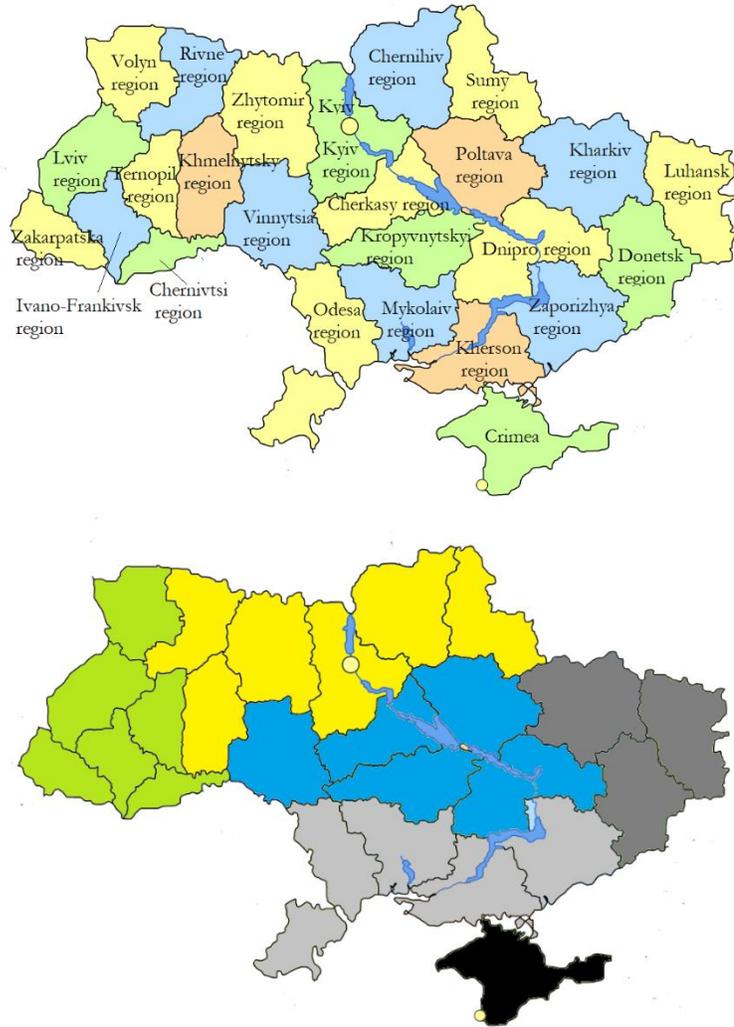


Figure 4. Dividing for the variable “region”

Crimea – black, East – dark grey, South – light grey, West – green, Center – blue, Nord – yellow.

APPENDIX C

KIIS survey's questions

Table 9. Variables and corresponding questions from the survey

Variable	# of obs.	Question	Answers	
<i>response variable</i>				
level of happiness	36461	Do you consider yourself a happy person?	No	1
			More likely no than yes	2
			Yes and no	3
			Rather yes than no	4
			Yes	5
			Hard to say/No answer	6
<i>regressors</i>				
gender	36461	Specify the gender of the respondent	man woman	1 0
family status	8054	Your marital status?	married other	1 0
education	36234	What kind of education do you have?	Primary (less than 7 classes)	1
			Incomplete secondary	2
			RU, FZU, vocational school after grades 7-8	3
			Complete secondary, general	4
			SPTU	5
			Secondary special	6
			Incomplete higher education	7
			Full higher education	8
			Hard to say/No answer	97
health	24270	How are you evaluate your health?	Bad	1
			Medium (neither good nor bad)	2
			Okay	3
			Very good	4
			Hard to say/No answer	6
citysize	36461	Type and size of the city	Village	1
			Urban-type settlement	2
			A small town	3
			Average city	4
			Large city (100 - 499 thousand)	5
			Very large city (more than 500 thousand)	6

Table 9 — Continued

Variable	# of obs.	Question	Answers	
region	36461	Geographical regions	Crimea	1
			East	2
			South	3
			Nord	4
			Central	5
			West	6
life satisfaction	15882	Tell me, to what extent do you not satisfied or satisfied your life as a whole now?	It does not matter to me	0
			Not at all satisfied	1
			No longer satisfies, than satisfies	2
			As far as satisfies, so does not satisfy	3
			More satisfies than does not satisfy	4
			Fully satisfies	5
			Hard to say/No answer	7
personal life satisfaction	12039	Tell me, to what extent do you not satisfied or satisfied your personal life as a whole now?	It does not matter to me	0
			Not at all satisfied	1
			No longer satisfies, than satisfies	2
			As far as satisfies, so does not satisfy	3
			More satisfies than does not satisfy	4
			Fully satisfies	5
			Hard to say/No answer	7
jobstatus	31504	What is your main work?	Worker, agricultural worker	1
			Employee (occupation, not requiring higher education)	2
			Specialist (occupation requiring higher education)	3
			Busy with self-employment	4
			Entrepreneur, owner of his business, farmer	5
			Military man, servant of law enforcement bodies	6
			Housewife/househusband	7
			I am retired (by age, disability)	8
			I'm studying (student)	9
			Looking for a job (unemployed)	10
			Other	11
			Hard to say/No answer	97

Table 9 — Continued

Variable	# of obs.	Question	Answers	
work_satisf	5760	Tell me, to what extent do you not satisfied or satisfied your work as a whole now?	It does not matter to me	0
			Absolutely not satisfied	1
			No more satisfying than satisfying	2
			How satisfying is not so satisfactory	3
			More satisfying than not satisfying	4
			Quite satisfying	5
Loss job	12140	Loss job (during year)	Yes	1
			No	0
unempl	13924	unemployed (looking for a job)	yes	1
			no	0
income perception	36338	Please look at this card and tell me which of the judgments best fits your household's finances?	We do not have enough money even for food	1
			We have enough money for food, but it is already difficult to buy clothes	2
			We have enough money for food and clothes, and we can postpone a certain amount, but this is not enough to buy expensive things (such as a TV or a refrigerator)	3
			We can afford to buy some expensive things (such as a TV or a refrigerator)	4
			We can afford everything we want	5
			Hard to say/No answer	8
inflation	36461	Cumulative inflation from the beginning of a year to the month of survey	Size in shares of 1	"_0.002"- "0,332"
family_ec_fut	16159	Do you think a year later your family will live better or worse than it is now?	Much worse than now	1
			Much worse	2
			Just like now	3
			Somewhat better	4
			Much better	5
			Hard to say/No answer	97
year	36461	Year of survey		2005-2017

APPENDIX D

Variables distribution

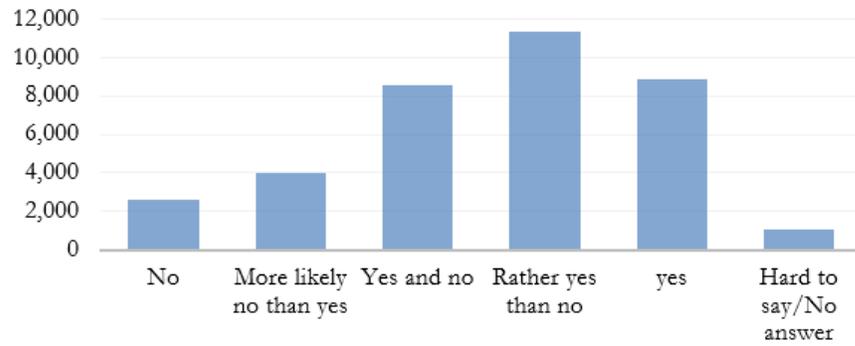


Figure 5. Distribution of the “level of happiness” variable

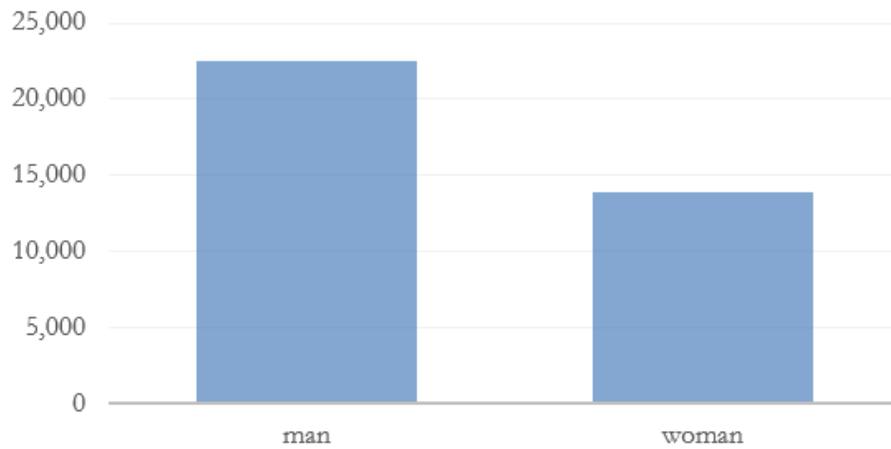


Figure 6. Distribution of the “gender” variable

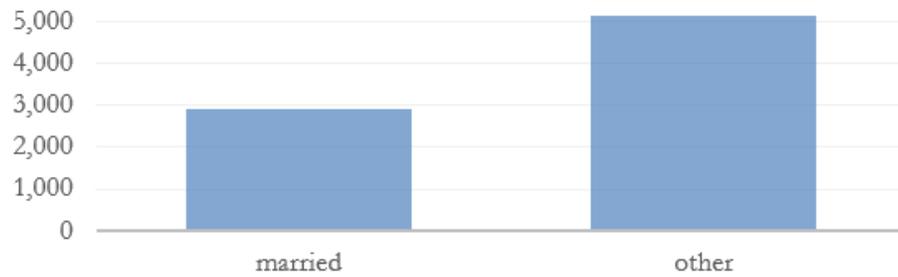


Figure 7. Distribution of the “family status” variable



Figure 8. Distribution of the “life satisfaction” variable

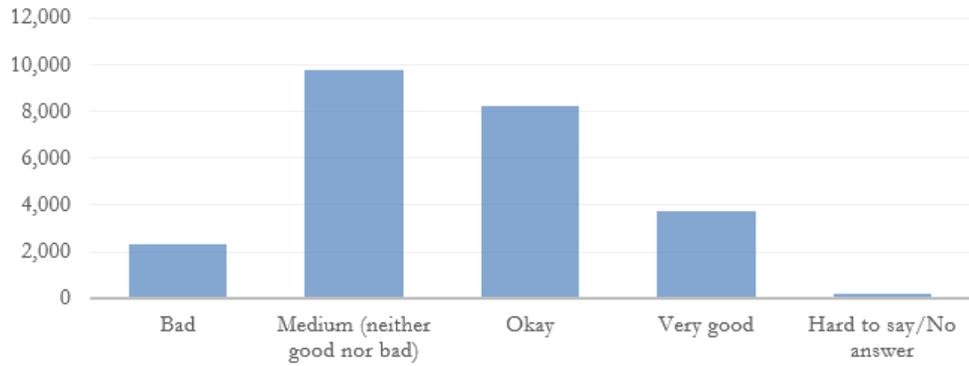


Figure 9. Distribution of the “health” variable

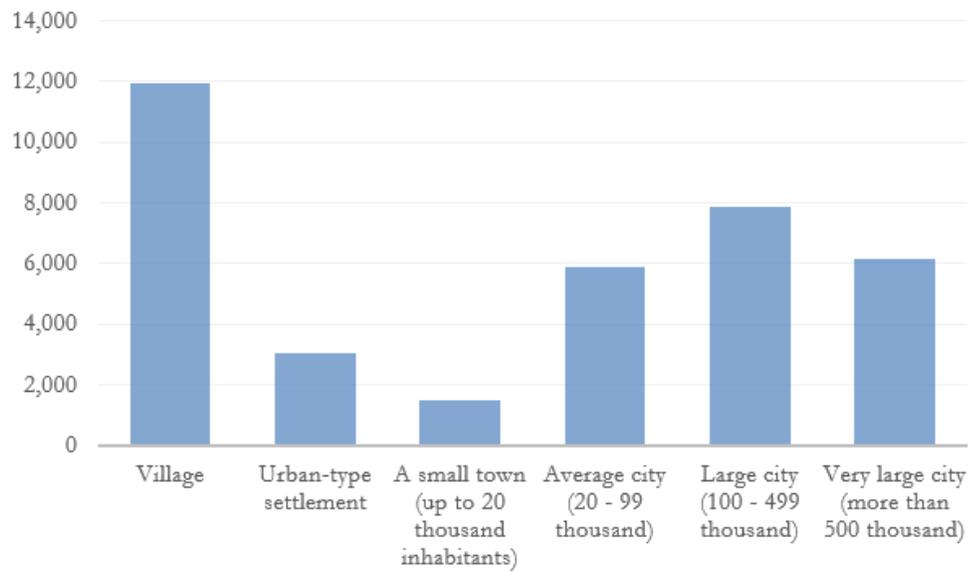
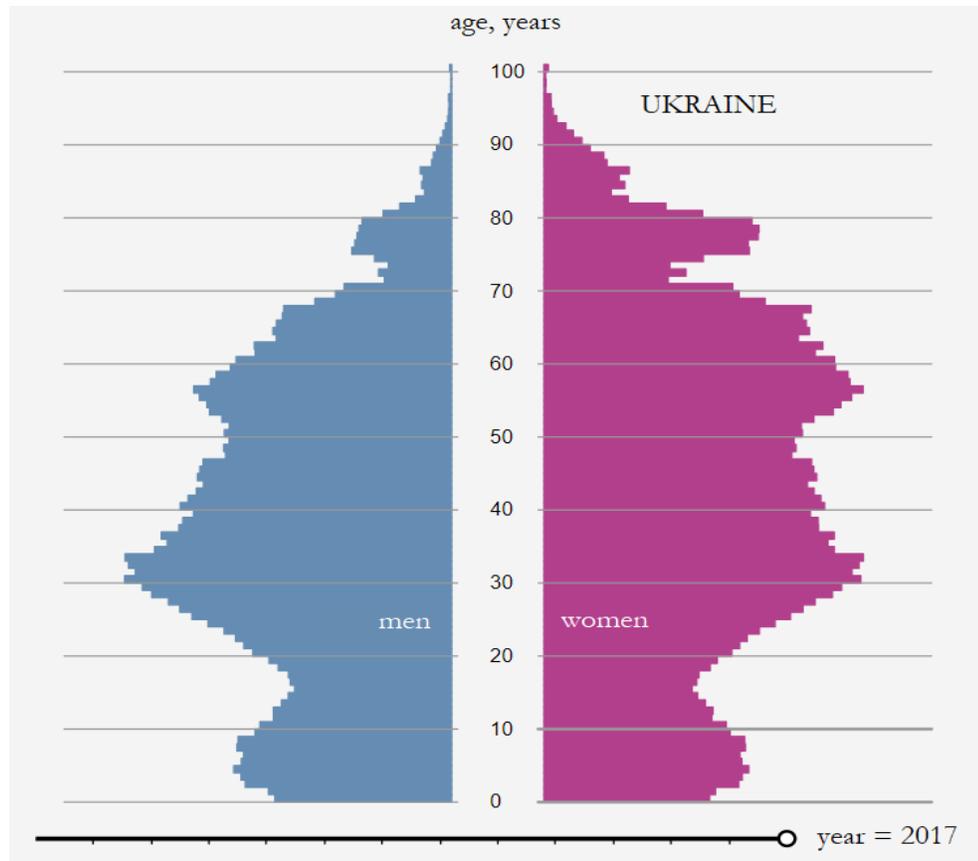


Figure 10. Distribution of the “city size” variable

APPENDIX E

Age and gender structure of the population of Ukraine



Figures 11. Age structure of the population of Ukraine

Notes: number of permanent residents (as of January 1 of the respective year), 2017. Men: 19644580, Women: 22770325, Together: 42414905 (persons), ratio of w / m: 1.159

Source: <http://www.lv.ukrstat.gov.ua/dem/piramid/all.php> (also dynamic model for 1989 -2017 is available)

Table 10. Population of Ukraine

Age	#		%	
	men	women	men	women
0-15	3 529 850	3 326 461	51.48	48.52
16-59	12 834 304	13 483 054	48.77	51.23
>60	3 353 727	6 063 483	35.61	64.39

Source: The data bank of the State Statistics Service of Ukraine, 2016

http://database.ukrcensus.gov.ua/MULT/Database/Population/databasetree_uk.asp

APPENDIX F

Variables presence in waves

Table 11. Presence of dependent and independent variables in survey waves

Measure	2005	2006	2007	2008	2009	2010	2011	2012_2	2012_11	2013_2	2013_5	2013_11	2014_2	2014_10	2015	2016_05	2016_12	2017
<i>dependent variables</i>																		
level of happiness	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
dummy happiness	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>independent variables and controls</i>																		
<i>Economics/ income</i>																		
family_income	-	-	+	-	-	+	-	+	-	-	+	-	-	-	-	+	+	+
Income_satisf	-	+	+	+	-	-	-	-	-	+	-	-	+	+	-	-	-	+
Econom_satisf	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	+
inflation (total, year)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
inflation (cumulative from beg of year to survey month)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Probl_econom_Ukr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
lost money	+	+	+	+	-	-	-	-	-	-	-	+	-	-	-	-	+	-
Income perception	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Ec cond now	-	-	-	-	-	-	-	+	+	-	+	-	+	-	+	+	+	+
Family_e_c_fut	-	-	-	-	-	-	-	+	+	-	+	+	+	-	-	+	+	+
<i>work</i>																		
work_satisf	-	+	+	+	-	-	-	-	-	+	-	-	+	+	-	-	-	+
job status	+	+	+	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+

Table 11—Continued

Measure	2005	2006	2007	2008	2009	2010	2011	2012_2	2012_11	2013_2	2013_5	2013_11	2014_2	2014_10	2015	2016_05	2016_12	2017
unemployed	+	+	+	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+
Lost job	+	+	+	+	-	-	-	-	-	-	-	+	-	-	-	-	+	-
<i>family</i>																		
personal_life_satisf	-	+	+	+	-	-	-	-	-	+	-	-	+	+	-	-	-	+
Family_satisf	-	+	+	+	-	-	-	-	-	+	-	-	+	+	-	-	-	+
family_status	-	+	+	-	-	+	-	-	-	+	-	-	-	-	-	+	-	-
Family_size	-	-	-	-	-	+	-	+	-	-	+	-	-	-	-	-	-	-
<i>personal</i>																		
age	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
age cohorts	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
gender	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
education	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
nationality	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
health	+	+	+	-	-	-	-	+	+	-	+	+	+	-	+	+	+	+
vacation	-	-	-	-	-	+	-	-	-	-	+	-	-	-	+	+	-	+
pets	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
dogs	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
cats	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
other animals	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
speech	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
faith	-	-	+	-	-	+	-	+	-	+	-	-	-	-	-	-	-	+
faith_dummy	-	+	+	-	-	+	-	+	-	+	-	-	-	-	-	-	-	+
Lost health	+	+	+	+	-	-	-	-	-	-	-	+	-	-	-	-	+	-
<i>Satisfaction</i>																		
Life_satisfaction	-	+	+	+	-	-	-	-	-	+	+	-	-	+	+	-	-	+
Housing_satisf	-	+	+	+	-	-	-	-	-	+	-	-	+	+	-	-	-	+
health_satisf	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 11—Continued

Measure	2005	2006	2007	2008	2009	2010	2011	2012_2	2012_11	2013_2	2013_5	2013_11	2014_2	2014_10	2015	2016_05	2016_12	2017
Eco_satisf	-	+	+	+	-	-	-	-	-	+	-	+	-	+	-	-	-	+
Future_stab_satisf	-	+	+	+	-	-	-	-	-	+	-	-	-	+	-	-	-	+
skills_satisf	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	+
freedom_satisf	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	+
life_control_satisf	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	+
social_satisf	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	+
Security_satisf	-	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-	-	+
<i>geography</i>																		
city size	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
oblast	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
region	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>other</i>																		
Life_now	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
perception_direct	-	-	-	-	-	+	+	+	+	-	+	+	+	-	+	-	-	+
corruption	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
ec_percept	-	-	-	-	-	-	-	+	+	-	+	-	+	-	+	+	+	+

*detailed transcription of each variables (question and answers) could be send upon request.

Note: “2012_2” – “_2” means the month when the survey was conducted if there were more than one wave per year

APPENDIX G

Results of two types of the logit regression

Table 12. Marginal effects of economic factors (simple logit model)

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
<i>Income perception</i>				
1. We do not have enough money even for food	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
2. We have enough money for food, but it is already difficult to buy clothes	0.454* (0.194)	0.677*** (0.194)	0.423*** (0.108)	0.392*** (0.095)
3. We have enough money for food and clothes, but this is not enough to buy expensive things	0.726*** (0.195)	1.243*** (0.201)	0.752*** (0.116)	1.024*** (0.117)
4. We can afford to buy some expensive things (such as a TV or a refrigerator)	1.307*** (0.260)	1.427*** (0.266)	1.411*** (0.177)	0.943*** (0.271)
5. We can afford everything we want	1.702* (0.775)	1.815 (1.121)	1.691** -0.54	1.431 -0.878
<i>Inflation</i>				
Cummulative (from the beginning of the year to the month of survey)	0.711 (1.116)	-0.740 (1.114)	-0.465 (0.687)	0.406 (0.741)
<i>Job status (base - Worker, agricultural worker)</i>				
2. Employee	0.087 (0.212)	0.102 (0.179)	-0.027 (0.119)	-0.392 (0.464)
3.Specialist	0.008 (0.235)	0.301 (0.216)	0.149 (0.141)	-0.126 (0.435)
4.Busy with self-employment	0.385 (0.341)	-0.012 (0.270)	0.066 (0.219)	-0.099 (0.878)
5.Entrepreneur, owner of his business, farmer	1.073 (0.548)	0.432 (0.323)	0.074 (0.222)	0.063 (0.971)
6. Military man, servant of law enforcement bodies	0.740 (0.776)	1.033 (0.649)	0.613 (0.542)	0 (.)
7. Housewife/househusband	0.090 (0.189)	0.240 (0.184)	0.286* (0.142)	0.563 (0.554)
8. I am retired (by age, disability)	0.406 (0.703)	-0.710 (0.455)	-0.219 (0.098)	-0.114 (0.297)

Table 12 - Continued

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
9. I'm studying (student)	0.147 (0.192)	0.000 (.)	-1.359 (1.323)	0.022 (1.068)
10. Looking for a job (unemployed)	0.031 (0.204)	-0.071 (0.195)	-0.205 (0.125)	0.541 (0.892)
11. Other	0.445 (0.321)	0.132 (0.311)	-0.31 (0.34)	-0.545 (0.941)
<i>Loss Job (last year; base – yes)</i>				
0. No	0.200 (0.193)	0.232 (0.168)	0.214 (0.117)	0.027 (0.319)
<i>Money Loss (last year; base – yes)</i>				
0. No	0.198 (0.229)	0.737*** (0.209)	0.404** (0.137)	0.745*** (0.18)
<i>Education (base – primary – 7 classes)</i>				
2. Incomplete secondary (less than 10 classes)	0.158 (1.272)	0.212 (0.915)	-0.623 (0.611)	-0.011 (0.143)
3. RU, FZU, vocational school after grades 7-8	0.078 (1.298)	0.220 (0.899)	-0.207 (0.622)	-0.178 (0.206)
4. Complete secondary, general (grades 10-11)	0.149 (1.237)	0.765 (0.840)	-0.513 (0.58)	-0.037 (0.127)
5. SPTU, vocational school after grades 10-11	0.256 (1.245)	0.803 (0.848)	-0.546 (0.585)	0.249 (0.185)
6. Secondary special (technical school etc.)	0.234 (1.237)	0.721 (0.834)	-0.257 (0.578)	0.242* (0.122)
7. Incomplete higher education (3 courses and more)	0.438 (1.244)	0.933 (0.891)	-0.296 (0.625)	0.157 (0.369)
8. Full higher education	0.460 (1.242)	0.866 (0.841)	-0.147 (0.583)	0.513*** (0.137)
<i>_cons</i>				
	-2.094* (1.282)	-0.291 (0.884)	-0.744 (0.602)	-1.705*** (0.475)
<i>N</i>	1794	1590	3848	3352

Table 13. Significance of years for the level of happiness

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
2005.year	-0.293	-0.278	-0.396***	-0.349**
	(0.176)	(0.162)	(0.105)	(0.122)
2006.year	-0.009	-0.151	-0.138	-0.003
	(0.183)	(0.156)	(0.107)	(0.119)
2007.year	-0.009	0.079	-0.082	0.027
	(0.180)	(0.164)	(0.105)	(0.118)
2008.year	0.272	0.184	-0.019	0.163
	(0.192)	(0.164)	(0.103)	(0.12)
2009.year	0.067	0.223	0.122	0.325**
	(0.184)	(0.164)	(0.105)	(0.119)
2010.year	0.441*	0.610***	0.420***	0.447***
	(0.197)	(0.166)	(0.107)	(0.116)
2011.year	0.558**	0.657***	0.275**	0.339**
	(0.199)	(0.169)	(0.105)	(0.12)
2012.year	-0.006	0.132	0.166	0.282**
	(0.163)	(0.139)	(0.091)	(0.101)
2013.year	0.232	0.305*	0.087	0.177
	(0.159)	(0.13)	(0.086)	(0.095)
2014.year	0.310	0.544***	0.417***	0.576***
	(0.172)	(0.141)	(0.092)	(0.101)
2015.year	-0.222	0.228	0.123	0.349**
	(0.186)	(0.161)	(0.106)	(0.116)
2016.year	0.031	-0.025	-0.019	0.11
	(0.167)	(0.134)	(0.091)	(0.102)
2017.year	0.000	0	0	0
	(.)	(.)	(.)	(.)
_cons	1.025***	0.539***	0.087	-0.454***
	(0.139)	(0.109)	(0.074)	(0.083)
N	6071	5813	13019	10493

Table 14. Marginal effects of socio-demographic factors (simple logit model)

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
<i>City size (base – village)</i>				
2. Urban-type settlement	-0.223 (0.156)	0.192 (0.146)	-0.154 (0.09)	-0.164 (0.101)
3. A small town (up to 20 thousand inhabitants)	0.026 (0.195)	0.426* (0.203)	-0.040 (0.116)	0.247* (0.129)
4. Average city (20 - 99 thousand)	0.292* (0.118)	0.497*** (0.113)	0.164* (0.071)	0.191* (0.079)
5. Large city (100 - 499 thousand)	0.152 (0.103)	0.248* (0.096)	0.224*** (0.064)	0.175* (0.071)
6. Very large city (more than 500 thousand)	0.431*** (0.117)	0.197 (0.109)	0.111 (0.071)	0.097 (0.077)
<i>Gender (woman - base)</i>				
Man	0.211** (0.076)	0.135 (0.073)	0.260*** (0.048)	-0.158** (0.054)
<i>Health evaluation (base – bad)</i>				
2. Medium (neither good nor bad)	0.781*** (0.187)	0.730*** (0.141)	0.926*** (0.067)	0.874*** (0.054)
3. Okay	1.822*** (0.184)	1.730*** (0.143)	1.964*** (0.077)	1.749*** (0.099)
4. Very good	2.644*** (0.236)	2.749*** (0.263)	2.843*** (-0.229)	1.843*** (0.305)
N	4007	3843	8523	7003

Table 15. Results of the ordered logit regression with economic factors and controls for different age cohorts

	age_cohort_1 9-29	age_cohort_30 -39	age_cohort_40- 59	age_cohort_6 0+
happyness (categories 1-5)				
<i>Income perception (base - We do not have enough money even for food)</i>				
2. We have enough money for food, but it is already difficult to buy clothes	0.358* (0.176)	0.948*** (0.173)	0.550*** (0.094)	0.558*** (0.079)
3. We have enough money for food and clothes, but this is not enough to buy expensive things	0.610*** (0.175)	1.439*** (0.178)	0.901*** (0.103)	1.185*** (0.101)
4. We can afford to buy some expensive things (such as a TV or a refrigerator)	0.996*** (0.208)	1.586*** (0.226)	1.488*** (0.149)	1.082*** (0.241)
5. We can afford everything we want	1.835*** (0.556)	3.217** (1.120)	2.898*** (0.531)	1.631 (0.866)
<i>Inflation</i>				
Cummulative (from the beginning of the year to the month of survey)	-0.252 -0.882	-1.216 (0.926)	-0.217 -0.597	-0.386 -0.625
<i>Job status (base - Worker, agricultural worker)</i>				
2. Employee (occupation, not requiring higher education)	-0.144 (0.171)	-0.013 (0.151)	0.014 (0.103)	-0.249 (0.401)
3. Specialist (occupation requiring higher education)	0.043 (0.189)	0.238 (0.182)	0.163 (0.122)	-0.226 (0.375)
4. Busy with self-employment	-0.401 (0.280)	0.081 (0.239)	0.139 (0.199)	0.084 (0.743)
5. Entrepreneur, owner of his business, farmer	0.507 (0.321)	0.370 (0.256)	0.084 (0.186)	0.097 (0.819)
6. Military man, servant of law enforcement bodies	0.517 (0.507)	1.020* (0.469)	0.328 (0.419)	14.532 (482.945)
7. Housewife/ househusband	0.090 (0.158)	0.240 (0.158)	0.177 (0.124)	0.598 (0.482)

Table 15 - Continued

	age_cohort_1 9-29	age_cohort_30 -39	age_cohort_40- 59	age_cohort_6 0+
happyness (categories 1-5)				
8. I am retired (by age, disability)	-0.327 (0.669)	-1.143** (0.395)	-0.187* (0.087)	-0.025 (0.254)
9. I'm studying (student)	0.064 (0.156)	0.496 (0.998)	-0.432 (1.255)	-0.166 (0.857)
10. Looking for a job (unemployed)	-0.108 (0.172)	-0.146 (0.169)	-0.236* (0.11)	1.048 (0.768)
11. Other	0.132 (0.242)	0.166 (0.277)	-0.069 (0.303)	-1.115 (0.773)
<i>Loss Job (last year; yes – base)</i>				
0. No	0.223 (0.163)	0.234 (0.146)	0.163 (0.101)	-0.097 (0.263)
<i>Money Loss (last year; base - yes)</i>				
0. No	0.052 (0.200)	0.689*** (0.179)	0.380*** (0.115)	0.658*** (0.131)
<i>Education (base - Primary (less than 7 classes))</i>				
2. Incomplete secondary (less than 10 classes)	-0.052 (1.054)	0.945 (0.803)	-0.384 (0.563)	-0.002 (0.121)
3. RU, FZU, vocational school after grades 7-8	-0.034 (1.075)	0.702 (0.800)	-0.283 (0.573)	0.193 (0.163)
4. Complete secondary, general (grades 10-11)	-0.057 (1.024)	1.349 (0.741)	-0.569 (0.538)	0.053 (0.106)
5. SPTU, vocational school after grades 10-11	0.052 (1.031)	1.275 (0.747)	-0.511 (0.542)	0.373* (0.155)
6. Secondary special (technical school etc.)	-0.075 (1.024)	1.313 (0.735)	-0.285 (0.537)	0.385*** (0.104)
7. Incomplete higher education (3 courses and more)	0.256 (1.029)	1.476 (0.778)	-0.313 (0.573)	-0.057 (0.32)
8. Full higher education	0.235 (1.027)	1.478* (0.742)	-0.233 (0.540)	0.535*** (-0.119)
N	1794	1593	3848	3353

Table 16. Results of the ordered logit regression with socio-demographic factors as predictors for different age cohorts

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
<i>City size (village – base)</i>				
2. Urban-type settlement	-0.202 (0.128)	0.077 (0.122)	-0.045 (0.077)	-0.173* (0.083)
3. A small town (up to 20 thousand inhabitants)	0.090 (0.161)	0.238 (0.168)	-0.010 (0.100)	0.232* (0.110)
4. Average city (20 - 99 thousand)	0.265** (0.093)	0.454*** (0.093)	0.174** (0.061)	0.155* (0.067)
5. Large city (100 - 499 thousand)	0.164* (0.082)	0.276*** (0.081)	0.201*** (0.055)	0.076 (0.061)
6. Very large city (more than 500 thousand)	0.191* (0.090)	0.220* (0.091)	0.129* (0.060)	0.123 (0.066)
<i>Gender (woman - base)</i>				
Man	0.173** (0.059)	0.176** (0.060)	0.247*** (0.041)	-0.177*** (0.046)
<i>Health evaluation (base – bad)</i>				
2. Medium (neither good nor bad)	1.053*** (0.178)	0.949*** (0.130)	1.157*** (0.058)	1.035 (0.263)
3. Okay	1.889*** (0.175)	1.790*** (0.131)	2.085*** (0.066)	1.035*** (0.047)
4. Very good	2.843*** (0.198)	2.991*** (0.193)	3.532*** (0.175)	2.084*** (0.256)
<i>Region (base – Crimea)</i>				
2. East Ukraine	0.033 (0.237)	-0.123 (0.215)	-0.135 (0.130)	-0.149 (0.144)
3. South Ukraine	0.026 (0.237)	-0.139 (0.215)	-0.065 (0.130)	0.005 (0.144)
4. North Ukraine	0.096 (0.239)	0.079 (0.219)	-0.095 (0.132)	-0.056 (0.146)
5. Central Ukraine	0.214 (0.235)	-0.038 (0.214)	-0.131 (0.128)	-0.169 (0.142)
6. West Ukraine	0.407 (0.232)	0.096 (0.211)	0.046 (0.127)	0.075 (0.141)
<i>_cons</i>	-4.334*** (0.262)	-4.547*** (0.268)	-1.235*** (0.137)	-3.683*** (0.293)
N	4007	3843	8523	7003

Table 17. Marginal effect of the family size (ordered logit model)

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
<i>Family size (base – one person)</i>				
2. Two persons	0.738**	-0.157	0.319*	0.352***
	(0.284)	(0.278)	(0.126)	(0.086)
3. Three persons	0.604*	0.133	0.561***	0.543***
	(0.271)	(0.262)	(0.127)	(0.122)
4. Four persons	0.675*	0.273	0.723***	0.488**
	(0.276)	(0.265)	(0.137)	(0.152)
5. Five persons	0.483	0.193	0.619***	0.771***
	(0.302)	(0.288)	(0.160)	(0.211)
6. More	0.690*	0.527	1.024***	0.823***
	(0.306)	(0.329)	(0.196)	(0.230)
N	1418	1232	2879	2338

Table 18. Marginal effect of the family status (ordered logit model)

	age_cohort_19-29	age_cohort_30-39	age_cohort_40-59	age_cohort_60+
dummy_happyness				
<i>Family status (base - married)</i>				
0. Other	-0.279**	-0.477***	-0.632***	-0.436***
	(0.100)	(0.128)	(0.079)	(0.074)
N	1386	1323	2798	2332

APPENDIX H

Correlations matrices

Table 19. Correlation between the level of happiness (ordered) and the different types of satisfactions

	Level of happiness	Income perception	Life satisfaction	Work satisfaction	Health satisfaction	Housing satisfaction
Level of happiness	1					
Income perception	0.2213	1				
Life satisfaction	0.4348	0.2514	1			
Work satisfaction	0.2207	0.2259	0.2487	1		
Health satisfaction	0.3193	0.2314	0.3616	0.2691	1	
Housing satisfaction	0.2001	0.2115	0.3062	0.1967	0.2528	1

Table 20. Correlation between some categorical regressors and the level of happiness (ordered)

	level of happiness	City size	Education	Health
City size	0.0742	1		
Education	0.1934	0.2909	1	
Health	0.4083	0.0898	0.2608	1