WEALTHY AND HEALTHY: AN EMPIRICAL ANALYSIS OF THE IMPACT OF SOCIOECONOMIC CONDITIONS ON SELF-RATED HEALTH IN UKRAINE

by

Yevheniia Pampukha

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Thesis Supervisor: _____ Professor Maksym Obrizan

Approved by _____
Head of the KSE Defense Committee, Professor

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Date _____

Kyiv School of Economics

Abstract

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This research aims to investigate key factors that affect the assessment of health by Ukrainians by using up to 1,040 observations from the World Values Survey (WVS) collected in 2020.

For estimation we use ordered logit model and apply an instrumental variable (IV) approach to address the endogeneity, which arises from the simultaneous determination of health, assessing importance of God and income.

The results obtained demonstrate that people who do not borrow money assess their health as "good" and "very good" more often than others. Level of education is statistically significant only for males, and those with higher education estimated their health better more often that those with primary education. Among the Ukrainians surveyed, employment status has no statistical significance and number of working hours does not matter.

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INTRODUCTION

Nowadays self-rated health (SRH) state is an essential indicator to observe changes in response to economic, social and political conditions in every country.

Many empirical studies are based on SRH data and even the World Health Organization (WHO) in 1996 has recommended to use SRH as one of the main indicators to monitor health state and quality of life. High reliability of this indicator implies a strong correlation with other health measures including objective health state.

The Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference in New York in 1946 defines the health state "as complete physical, mental and social well-being, not merely as the absence of disease or infirmity". Moreover, the WHO launched the Committee of Social Determinants of Protecting Health in 2006 to eliminate health inequalities for local communities and nations and throughout the world.

Self-rated health state is considered to be a comprehensive and precise instrument for assessing the real state of health of the population as there is a direct relation between SRH and mortality, morbidity and health care use in the population.

The comprehensive nature of the assessment is justified by the fact that the answer to the simple question, "How would you describe your state of health these days?", reflects not only physical state of the respondent, but also mental state, social and economic welfare. However, subjective character of this indicator may lead to systematical overstatement or understatement self-

perceived health across population subgroups, even if real health status is identical.

Phenomenon of existence of systematic differences when answering the question about self-esteem of the heath of different groups of respondents is called "heterogeneity" (Lindeboom and van Doorslaer 2004).

One of the illustrative examples of the heterogeneity existence in assessing health is the systematic underestimation of their health by people with a low level of income. Thus, people who perceive a lack of economic resources to meet their basic needs are more likely to have poor perceived self-rated health state.

Another "paradox" described in the literature is that women tend to report poor health more often than men. According to Benyamini and Leventhal (2000), compared with men, women consider a broader set of factors when making general ratings of health. Women are more likely to take into account psychological factors and the evidence of mild diseases.

Every year more attention is also paid to the role of employment status in relation to self-assessment of health. It is thought that people who have non-permanent or part-time work is accompanied by job insecurity and income instability which negatively affects health.

In this research, we are aimed at testing the following hypotheses on the example of Ukraine:

- Relationship between employment status and self-rated health vary by gender (Cho et al. 2015);

- Individuals with higher income are more likely to assess their health as good than lower income individuals;

- Part-time workers` perceived health is worse than full-time workers`.

In the end, comparing the conclusions we want to answer the primary question: "Which factors affect self-assessment of health in Ukraine?". In the literature, the influence of various determinants on the health are studied mainly by individual factors; there is no comprehensive analysis of the socio-economic determinants of the health. Moreover, there are no such studies in case of Ukraine.

The World Value Survey revealed that in 2020 the largest number of people in Ukraine rated their health as "very good" and "good" – 45.4%. A similar dynamic was in 2006 when about 43% of Ukrainians highly rated their health. 1996 and 2008 were those when the smallest number of people positively assessed their health – 27% and 29.5%, respectively. Despite the fact that over the years, Ukrainians tend to assess their health as "good" and "very good" more often, it still remains one of the lowest rate among European countries. For example, in 2020 people in Greece rated their health the highest, 80.3% of population feel great. Greece is followed by Spain (78.4%), Cyprus (75.8%) and Austria (74.4%). The lowest rates of self-assessment of health state are in Ukraine (45.4%) and Georgia (37.3%) (Figure 1).
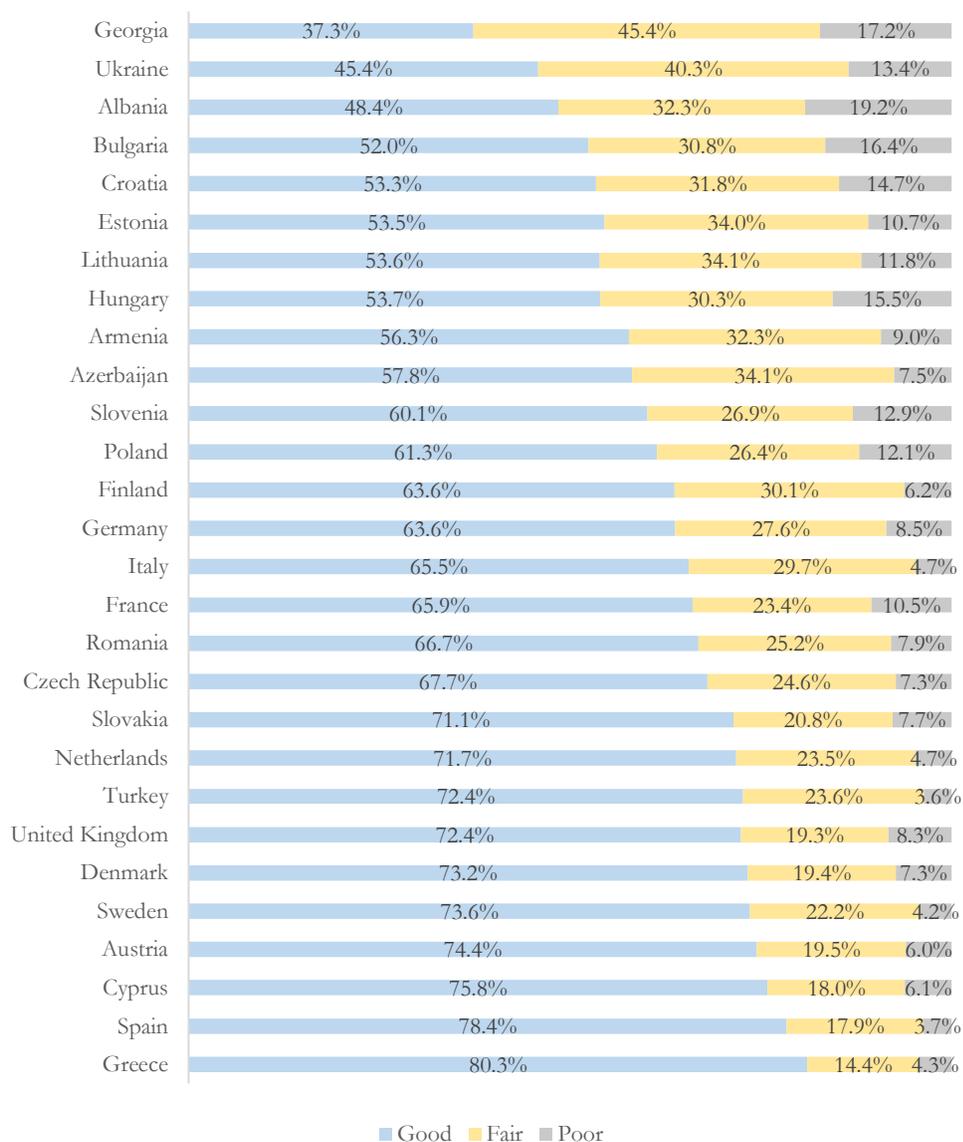
Country	Good	Fair	Poor
Georgia	37.3%	45.4%	17.2%
Ukraine	45.4%	40.3%	13.4%
Albania	48.4%	32.3%	19.2%
Bulgaria	52.0%	30.8%	16.4%
Croatia	53.3%	31.8%	14.7%
Estonia	53.5%	34.0%	10.7%
Lithuania	53.6%	34.1%	11.8%
Hungary	53.7%	30.3%	15.5%
Armenia	56.3%	32.3%	9.0%
Azerbaijan	57.8%	34.1%	7.5%
Slovenia	60.1%	26.9%	12.9%
Poland	61.3%	26.4%	12.1%
Finland	63.6%	30.1%	6.2%
Germany	63.6%	27.6%	8.5%
Italy	65.5%	29.7%	4.7%
France	65.9%	23.4%	10.5%
Romania	66.7%	25.2%	7.9%
Czech Republic	67.7%	24.6%	7.3%
Slovakia	71.1%	20.8%	7.7%
Netherlands	71.7%	23.5%	4.7%
Turkey	72.4%	23.6%	3.6%
United Kingdom	72.4%	19.3%	8.3%
Denmark	73.2%	19.4%	7.3%
Sweden	73.6%	22.2%	4.2%
Austria	74.4%	19.5%	6.0%
Cyprus	75.8%	18.0%	6.1%
Spain	78.4%	17.9%	3.7%
Greece	80.3%	14.4%	4.3%

■ Good ■ Fair ■ Poor

Figure 1. Assessment of one`s own health, comparison with other countries

Source: Ukraine in World Value Survey Wave 7

Note: answers "very good" and "good" are combined for the "good"; answers "poor" and "very poor" are combined for the "poor" to the question from the

World Value Survey Wave 7, "All in all, how would you describe your state of health these days? Would you say it is ... "?

All of the above makes it important and relevant to conduct a comprehensive analysis of the socio-economic determinants of the health of Ukrainians.

The thesis is organized as follows: Chapter 2 starts with a review on the relevant to association between socioeconomic conditions and self-assessment of health literature. Chapter 3 is dedicated to the description of data, required for the respective econometric model. In Chapter 4 the authors develop a methodological framework used for investigating the relationship between socioeconomic, demographic conditions and self-rated health state in Ukraine. Empirical results are discussed in Chapter 5. Finalizing the thesis, Chapter 6 summarizes its findings and provides a brief discussion of possible further research.

LITERATURE REVIEW

The existence of systematic differences in the health status of people with different socioeconomic status has been confirmed in many studies.

There are two main hypotheses for explaining the relationship between socioeconomic status and self-assessment of health. The material hypothesis is that low socioeconomic status does not provide enough resources to obtain such fundamental conditions for good health as food, housing, access to health services etc. (Lynch et al. 2000). The psychosocial hypothesis explains the existence of differences in the health of the population as a direct or indirect effect of stress caused by the fact that an individual occupies a relatively lower position in the socioeconomic hierarchy (Marmot and Wilkinson 2001).

Mackenbach et al. (2008) made research among 22 European countries on comparison of the magnitude of inequality in mortality and self-reported health. Study concluded that in the vast majority of countries the prevalence of lower self-reported health state was significantly higher in groups of people who have lower socioeconomic status. Authors had the aim to measure the relationship between socioeconomic status and health scores using regression-based inequality indices.

According to McFadden (2008), respondents with lower level of education or income and unemployed are more likely to assess their health state as poor. The aim of the study was to investigate the relation between social position and self-reported health at different ages in men and women in United Kingdom using logistic regression. Results showed strong association between SRH and social class in both men and women.

There are many researchers who made cohort studies to investigate an association between self-rated health and socioeconomic conditions. Massa and Filho (2020) analyzed association between income inequality and SRH in older adults, and separately for the young-old and very-old groups in Brazil. Considering results of Bayesian multilevel models, author found that association between poor SRH and living in a high-income inequality capital city is very strong and reversed association for medium income inequality cities.

Molarius et al. (2007) investigated association between self-rated health, socioeconomic conditions, and lifestyle factors on cohorts of men and women in Sweden. Findings are that women rated their health as poor more often than men (9% and 7% among women and men, respectively). Poor or very poor self-rated health was most common assessment among people who had poor financial situation or who had not enough support from social institutions. Considering education, there was association between low education level and poor self-assessed health state among men, but not among women.

Ryngach and Lukina (2016) stated that the reason for falling life expectancy in Ukraine with increasing index of education was due to low quality of education, its weak focus on forming the system knowledge about the human body and specifics of its development, personal responsibility in general and the protection of own health in particular.

The country's low socio-economic development that led to a long period of underfunding of the education system and reduction of wages; reduced reliability for professor's (teacher's) working results, weakening of control function of studying.

Overall, the literature findings suggest almost the same results among homogeneous groups regardless of country.

DATA DESCRIPTION

3.1. Description of the World Value Survey

The relation between socioeconomic conditions and self-rated health was investigated in a population sample of men and women aged 18 and older. The data were obtained during July–August 2020 using Computer-Assisted Personal Interviewing (CAPI) by InfoSapiens and NGO "Social Monitoring Centre" within the World Values Survey Wave 7.

The sampling was random and nationwide stratified, so at the end the representative sample was designed. Sample allowed to cover the whole territory of the country, excluding temporary uncontrolled by the Ukrainian government territories of Donetsk and Luhansk oblasts and the Autonomous Republic of Crimea (Figure 2). A total of 1 289 subjects answered the questionnaire.
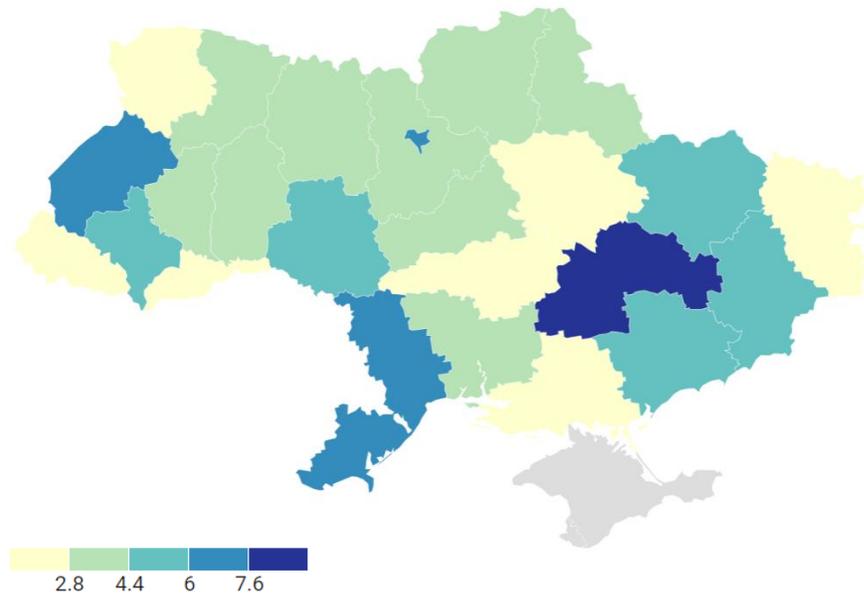
Figure 2. Graphical representation of the Ukrainians regions where respondents live

3.2. Data Cleaning

It is important to clear data before estimating the model as we have ordered answers and values with negative signs (-1, -2, etc.) will affect the results. First of all, we had to exclude observations where the answer on key questions was "I don't know" or no answer at all. We also excluded observations where at least one response was "Other" as it is outlier but we want to see the general picture.

In some questions two or more answers were combined into one because too detailed answers in these cases were inappropriate for estimating the model. For example, in question about marital status respondents had 6 options to choose, but we decided to combine some of them. For us it does not matter whether

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couple only live together or they are already married. If they are a couple, then they support each other and must have lived in love. With divorced and separated people is analogical situation. They are not couple anymore

After all manipulations our final sample consist of 1041 observations.

3.3. Dependent variable

Dependent variable formed by a response of question "How would you describe your state of health these days?" and it ranges from 1 to 5 where the numbers mean very good, good, fair, poor and very poor, respectively. As for the research there is no need to look at "good" and "very good" responses separately, we decided to group it and mark as 1, and the rest (fair, poor, very poor) – as 0.

Distribution of answers by sex is shown in Table 1.

Table 1. Distribution of Self-Reported Health Level by gender

	Very good	Good	Fair	Poor	Very poor
Male	9.6%	38.3%	42.3%	8.3%	1.5%
Female	5.9%	43.8%	39.0%	9.9%	1.5%

3.4. Main independent variables

The main independent variables in this study are employment status and income level. In the survey, employment status was assessed by using one question, "Are you employed now or not? If yes, about how many hours a week?".

The answers were divided in 7 categories, full time employed (30 hours a week or more), part time employed (less than 30 hours a week), self-employed, retired, householder, student and unemployed. Figure 3 shows the distribution of responses on that question.
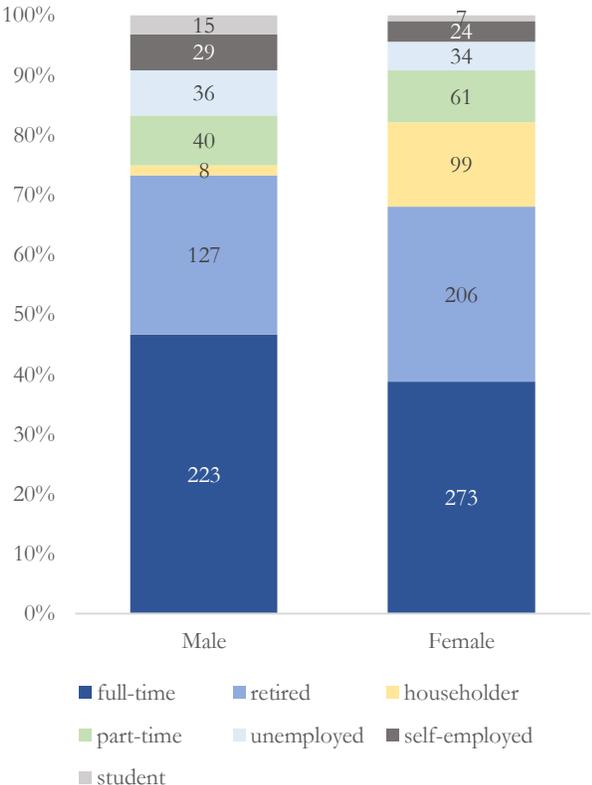

Figure 3. Distribution by employment status and gender

To estimate income level interviewed were asked to specify the appropriate number on an income scale, counting all wages, salaries, pensions and other incomes that come in. On scale 1 indicates the lowest income group and 10 the highest income group. Income level was recoded in three groups, low-income group (1-3), medium-income group (4-7) and high-income group (8-10). Figure 4 shows the distribution of responses on that question.
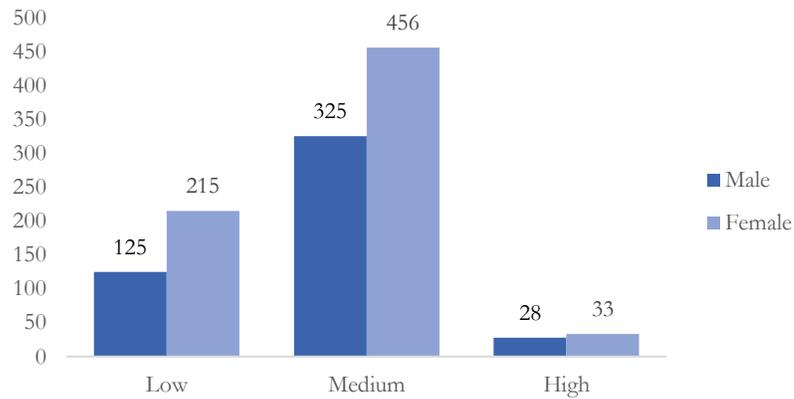
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Figure 4. Distribution by income level

3.5. Other independent variables (control variables)

Demographics and socio-economics variables such as age, marital status, education, type of settlement, number of children, household size as well as importance of God were used as control variables (see Figure 5).

Marital status was defined in terms of being married (or living with a partner) – 1, divorced/separated – 2, being widowed – 3, single – 4.

Settlement type was defined in terms of living in rural area (0) or urban (1).

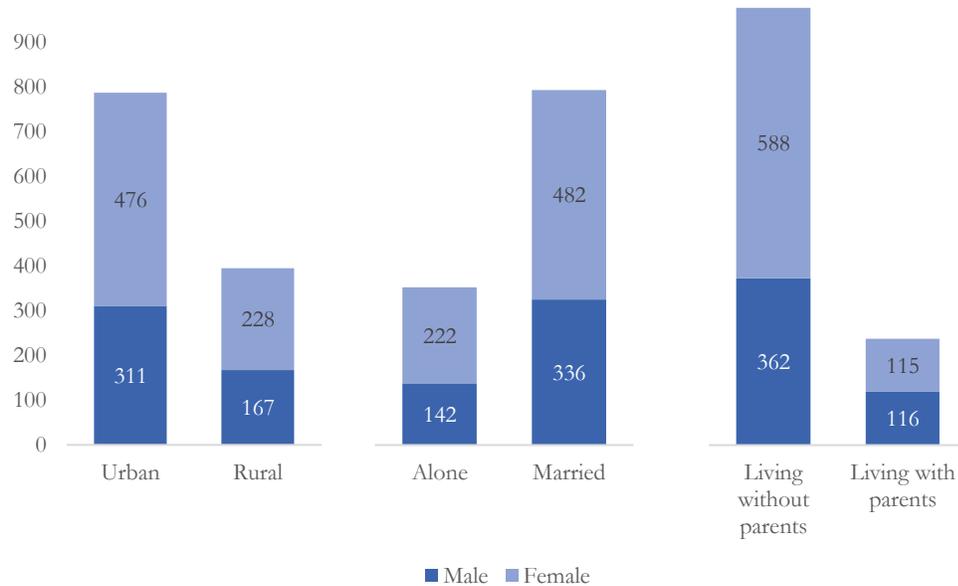For sex in dataset, we have 0 for males and 1 for females.

Figure 5. Distribution of settlement, marital status and living with parents or not by gender

Education was assessed by using question, "What is the highest educational level that you have attained?". For the current research three levels of education were created: primary school and no education, secondary school or equivalent (lower and upper secondary education, post-secondary non-tertiary education and short-cycle tertiary education) and university (bachelor, master or doctoral).

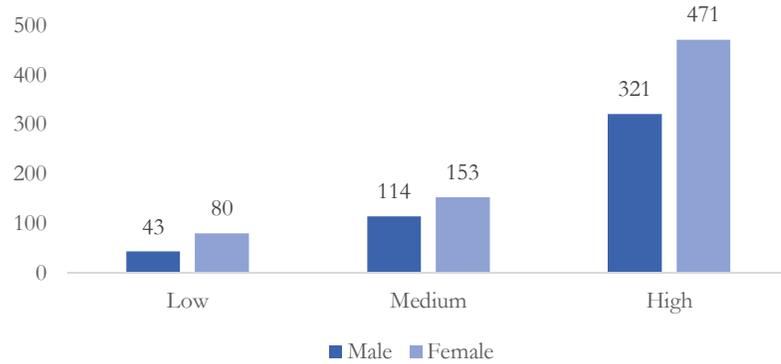Figure 6 shows the distribution of responses on that question.

Figure 6. Distribution by educational level and gender

Importance of God was assesed by asking question, "How important is God in your life?". On scale 1 indicates "not at all important" and 10 means "very important".

Summary statistics for abovementioned independent variables can be found in Table 2.

Table 2. Descriptive statistics of variables

	Male				Female			
	Min	Max	Mean	St. Dev.	Min	Max	Mean	St. Dev.
Age	18	86	47.5	16.13	19	84	48.99	16.72
Children	0	6	1.2	0.97	0	7	1.4	0.94
Income	1	3	1.79	0.54	1	3	1.73	0.54
Household size	1	11	2.83	1.27	1	9	2.92	1.38
Importance of God	1	10	6.09	3.28	1	10	7.01	3

Instrumental variable for the previous one is the frequency of prayer as it is objective answer but not subjective. Respondents had a question, "Apart from weddings and funerals, about how often do you pray?" with different options to choose.

From the Figure 7 we can see that women tend to pray more often than men. 28.8% of male respondents stated that they never or practically never pray while almost 33% of surveyed women said that they pray once a day or even several times each day.
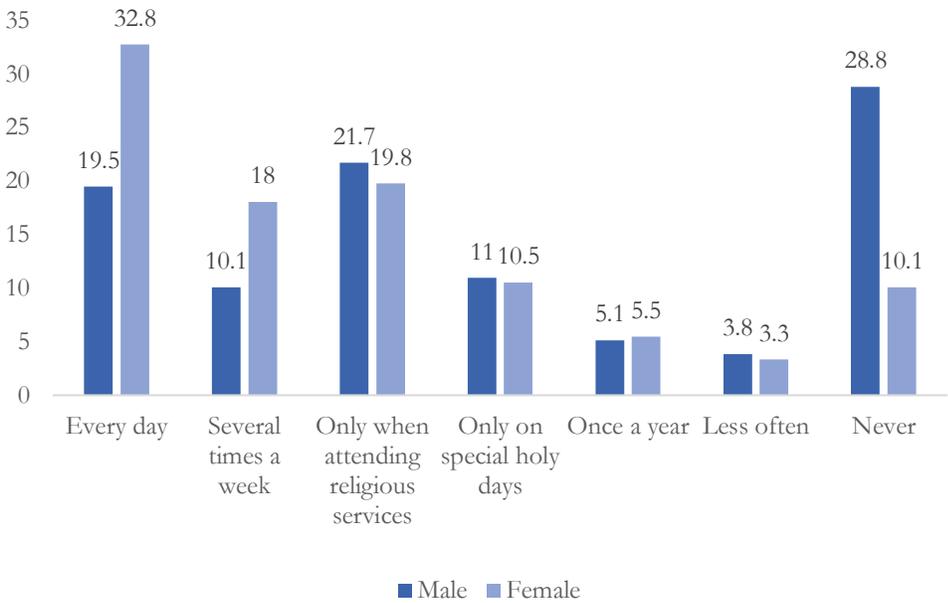

Figure 7. The frequency of prayer in Ukraine, %

Instrumental variable for the income level received by asking respondents a question, "During the past year, did your family…". They had options "save

money", "just get by", "spent some savings", "spent savings and borrowed money".

The intuition is that high income people obviously have money for their lives and do not need to borrow, and they have enough resources even to save some amount. Analogically with low-income people – they do not have finance resource to buy at least goods of necessity which force them to borrow money.
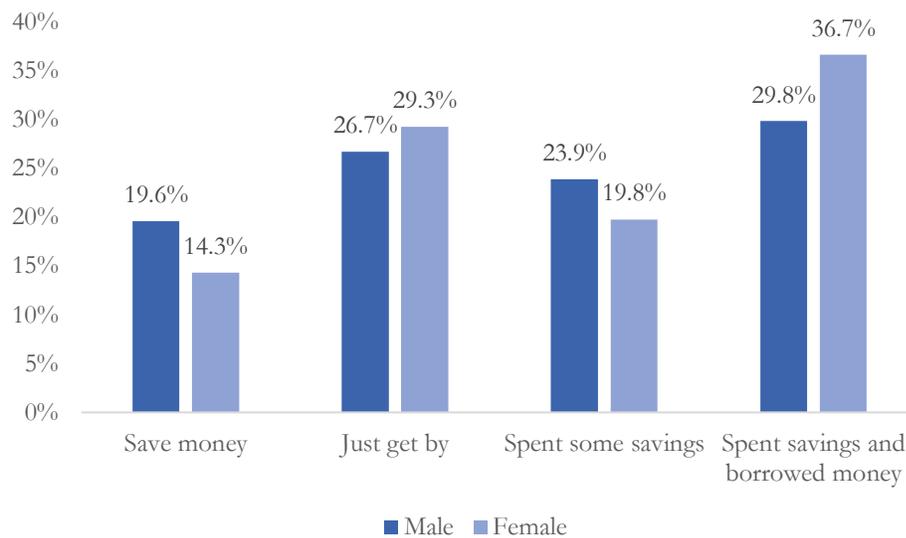
Financial situation is depicted on Figure 8.

Figure 8. Financial situation of Ukrainians in 2020

As we see in 2020 in Ukraine, every fifth man and every seventh woman (19.6% and 14.3% respectively) reported that its family had opportunity to save money during the past year, while every third Ukrainian responded that they have no money to meet their needs and that they need to borrow.

METHODOLOGY

When dependent variable occurs with more than two ordered values, the estimation of the parameters can be made through ordered logit or probit models. In this paper, ordered logit model is preferred as an empirical approach. In a basic form, ordered logit model is specified as follows:

$$SRH_i = SEV_i\alpha + DV_i\beta + LV_i\gamma + e_i \, , \qquad (1)$$

where the variable of SRH_i is a dependent variable formed by a response of question "How would you describe your state of health these days?" and it ranges from 1 to 5 where the numbers mean very good, good, fair, poor and very poor, respectively. DV_i represents the demographic variables; SEV_i displays the socioeconomic variables; LV_i – love variables; α, β and γ are the parameters; e_i is the error term of the model.

Age, gender and marital status are described under the demographic variables. Education groups, income groups and employment status are specified under the socioeconomic variables; number of children, household size, living alone or with parents and importance of God are love variables (family and religious love, respectively).

We applied an instrumental variable (IV) approach to address the endogeneity, which arises from the simultaneous determination of some variables.

If we want to estimate the model:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + W_{1i} + u_i, \qquad (2)$$

where X_{1i} and X_{2i} are endogenous regressors for which we have to find instrumental variables Z_{1i}, Z_{2i}, Z_{3i}; W_{1i} is an exogenous regressor.

The equations will be:

$$y \sim x_1 + x_2 + w_1 \mid w_1 + z_1 + z_2 + z_3 \qquad (3)$$

We need to find some variable z, which satisfies two properties:

- Exogeneity: variable is not correlated with random errors

$$Cov(z_i, \varepsilon_i) = 0 \qquad (4)$$

- Relevance: variable correlated with regressor
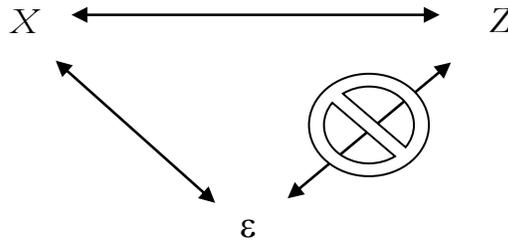
$$Cov(x_i, z_i) \neq 0 \qquad (5)$$

X

Z

ε

Figure 9. Requirements to instruments

Then we can get a consistent estimate of the parameter β_2 using Two-Stage Least Squares.

Instrumental variable method should be implemented in health, assessing importance of God and income. It is obvious with the first two variables, but income variable should be explained more detailed.

To report the income level, the respondent was asked to specify the appropriate number on an income scale on which 1 indicated is the lowest income group and 10 the highest income group in Ukraine.

From this statement it is clear that every citizen of Ukraine may perceive the same income differently.

The choice of instrumental variables. IV should be correlated with the endogenous variable (i.e., SRH, income level, importance of God), and uncorrelated with the error term. In this context, we use two instruments for income and importance of God not to change dependent variable.

Instruments for family income include state unemployment rate, work experience, parental education, spouse characteristics and savings (Lecluyse and Ourti 2005). We decided to take savings characteristic using the question from the same survey "During the past year, did your family…" with possible options

"Saved money", "Just get by", "Spent some savings" and "Spent savings and borrowed money".

The intuition of this IV is that people with high current incomes save money as they earn enough to cover their expenditures and at the same time to set aside some amount. Besides people who have high income level as a rule are more financially educated. Similarly, low-income class has a lack of money for their survival and they forced to spend their savings and sometimes even borrow money.

Instruments for indicating importance of God are frequency of attending religious services or frequency of praying. We decided to choose the IV of pray frequency as it is very accurate index whether the person is really religious.

We used the question from World Value Survey "Apart from weddings and funerals, about how often do you pray" with options "Several times a day", "Once a day", "Several times each week", "Only when attending religious services", "Only on special holy days", "Once a year", "Less often" and "Never, practically never".

Correlation between variables is shown in Table 3.

Table 3. Correlation of IV variables

	Savings	*Pray*
Income	-0.7995	
Importance of God		-0.5475

Chapter 5

ESTIMATION RESULTS

The chapter presents estimation results of the regression models described in the previous chapter. The results can be seen in the tables depicted in the chapter.

Table 4 present Binomial Logistic models estimates with log odds converted to odds, which now possible to interpret, without considering the endogeneity issues.

Middle class men rated their health state as good 2.3 times more often, while the rich did so almost 5 times often in the survey in comparison to the low-income class.

Medium-level income women rated their health state as good/very good 3.5 times more often than the poor (at 1% level significance); women with high income rated their health as good 2.5 times more often than women with low income.

Men who have high education (bachelor, master, PhD) rated their health state as good/very good 2.4 times more often in comparison to men with secondary education.

The variable of God importance showed that each additional point increase of importance of God on scale of females is associated with 6% decrease in the odds of estimating their health as good/very good.

As pointed in previous chapter, the results of the analysis may be biased, since they suffer from endogeneity. Using an IV approach, we address this problem and present the IV estimates in Table 5.

Table 4. Estimation results of Binomial Logistic models for cohorts of males and females

	SRH male			SRH female		
Predictors	*Odds Ratios*	*CI*	*p*	*Odds Ratios*	*CI*	*p*
(Intercept)	3.15	0.50 – 20.20	0.223	13.77	2.53 – 78.18	**0.003**
Income [medium]	2.33	1.34 – 4.11	**0.003**	3.45	2.15 – 5.62	**<0.001**
Income [high]	4.72	1.71 – 13.95	**0.004**	2.45	0.93 – 6.40	**0.066**
Employment [full-time]	1.09	0.47 – 2.55	0.833	0.94	0.47 – 1.86	0.853
Employment [self-employed]	1.09	0.34 – 3.55	0.889	0.48	0.15 – 1.51	0.210
Employment [retired]	1.27	0.46 – 3.62	0.644	1.11	0.47 – 2.65	0.817
Employment [householder]	0.47	0.05 – 3.08	0.444	0.73	0.32 – 1.63	0.441
Employment [student]	1.34	0.24 – 11.03	0.754	0.29	0.02 – 7.23	0.361
Employment [unemployed]	0.68	0.22 – 2.07	0.499	0.70	0.25 – 1.95	0.489
Education [middle]	1.41	0.55 – 3.84	0.491	1.27	0.56 – 2.96	0.577
Education [higher]	2.42	1.02 – 6.13	**0.051**	1.77	0.84 – 3.88	0.144
Age	0.95	0.93 – 0.98	**<0.001**	0.92	0.90 – 0.95	**<0.001**
Marital Status [married/living together]	0.86	0.39 – 1.86	0.695	1.29	0.56 – 2.92	0.543
Marital Status [divorced/separated]	0.79	0.27 – 2.23	0.657	1.10	0.38 – 3.18	0.856
Marital Status [widowed]	0.90	0.16 – 4.06	0.892	1.25	0.43 – 3.60	0.684
Settlement [urban]	1.08	0.66 – 1.75	0.762	1.16	0.76 – 1.77	0.501
Children	1.02	0.76 – 1.38	0.886	1.14	0.88 – 1.48	0.324
Household size	0.97	0.78 – 1.20	0.767	0.87	0.71 – 1.06	0.184
Importance of God	0.95	0.89 – 1.02	0.163	0.94	0.88 – 1.01	**0.080**
Observations	418			622		

Table 5. Estimation results of Binomial Logistic models for cohorts of males and females using IV

Predictors	SRH male			SRH female		
	Odds Ratios	CI	p	Odds Ratios	CI	p
(Intercept)	1.56	0.22 – 11.09	0.654	10.57	1.93 – 60.73	**0.007**
Savings [save money]	2.84	1.42 – 5.80	**0.004**	2.43	1.29 – 4.63	**0.007**
Savings [just get by]	1.53	0.83 – 2.83	0.170	2.23	1.35 – 3.71	**0.002**
Savings [spent some savings]	1.96	1.04 – 3.74	**0.039**	2.91	1.65 – 5.17	**<0.001**
Employment [full-time]	1.08	0.46 – 2.55	0.860	0.93	0.46 – 1.86	0.837
Employment [self-employed]	0.96	0.29 – 3.21	0.943	0.62	0.19 – 2.05	0.437
Employment [retired]	1.17	0.42 – 3.35	0.766	1.23	0.52 – 2.96	0.635
Employment [householder]	0.52	0.06 – 3.42	0.506	0.65	0.28 – 1.49	0.312
Employment [student]	1.27	0.22 – 10.52	0.799	0.18	0.01 – 4.61	0.211
Employment [unemployed]	0.68	0.22 – 2.05	0.496	0.66	0.23 – 1.89	0.433
Education [middle]	1.43	0.54 – 4.00	0.483	1.09	0.48 – 2.59	0.835
Education [higher]	2.62	1.08 – 6.84	**0.039**	1.63	0.76 – 3.62	0.217
Age	0.95	0.93 – 0.98	**<0.001**	0.92	0.90 – 0.94	**<0.001**
Marital Status [married/living together]	0.85	0.39 – 1.86	0.689	1.25	0.54 – 2.90	0.597
Marital Status [divorced/separated]	0.80	0.27 – 2.30	0.683	0.99	0.33 – 2.91	0.985
Marital Status [widowed]	0.81	0.14 – 3.83	0.796	1.32	0.44 – 3.93	0.614
Settlement [urban]	1.10	0.67 – 1.80	0.703	1.08	0.70 – 1.69	0.719
Children	1.02	0.75 – 1.39	0.891	1.11	0.85 – 1.46	0.432
Household size	0.97	0.77 – 1.21	0.783	0.87	0.70 – 1.06	0.171
Pray [several times each week]	1.52	0.63 – 3.71	0.351	1.90	1.07 – 3.41	**0.030**
Pray [only attending religious services]	1.37	0.68 – 2.81	0.381	3.30	1.87 – 5.90	**<0.001**
Pray [only on special holy days]	2.00	0.86 – 4.74	0.110	1.56	0.79 – 3.06	0.199
Pray [once a year]	2.10	0.77 – 5.90	0.152	2.98	1.25 – 7.27	**0.015**
Pray [less often]	1.80	0.50 – 6.26	0.357	0.85	0.27 – 2.72	0.786
Pray [never]	1.91	0.97 – 3.81	0.063	2.56	1.21 – 5.50	**0.014**
Observations		418			622	

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For males there are *age*, *savings* (save money, spent some savings), *higher education* variables significant. For females: *age*, *savings* (save money, just get by, spent some savings), *pray* (several times each week, only attending religious services, once a year, never).

Age has odds ratio less than 1 for both men and women, which means that with higher age there is less chance to rate self-health as good or very good (at 1% level significance).

To quantify the change in the odds we can use the following formula:

$$Change\ in\ Odds\ \% = (OR - 1) * 100\ , \qquad\qquad (6)$$

For male the odds ratio (OR) for age is 0.95, for female – 0.92. Thus, we could calculate:

This means that each additional increase of one year in age of males is associated with an 5% decrease in the odds of estimating their health as good/very good, and with 8% decrease in the odds for females.

Men who have high education (bachelor, master, PhD) rated their health state as good/very good 2.6 times more often in comparison to men with secondary education.

Men whose families saved money during the past year assess their health as good/very good almost 3 times more often in comparison to men whose families only spent savings and borrowed money, while men who stated that during past year, they just got by estimated their health as good/very good 1.53 times more.

Men who never pray estimated their health state as good/very good almost 2 times more often that those who pray every day or even several times a day (at 10% level significance).

Women who pray several times each week stated that their health is good/very good 1.9 times more often that those who pray once or several times a day, while women who pray only attending religious services did so 3.3 times more often (1% significance level). Women who pray once a year or do not pray at all estimated their health 2.5-2.9 times more often than reference group of women.

Women whose families saved money during past year assessed their health state as good/very good 2.43 times more often in comparison to women whose families only spent savings and borrowed money, while women who said that they just got by and women whose families spent some of their savings did so 2.23 and 2.91 (1% significance level) times more often respectively.

C h a p t e r   6

CONCLUSIONS

In our research income have significant influence on self-rated health, especially among women. Among men income is also significant, but the results are very different from the model for females.

Our research also confirms the association between self-reported health and education among men.

In the sample some factors, including marital status, settlement, household size, number of children, employment status, importance of God did not significantly influence the risk of low self-rated health.

There are two possible explanations for such results. First is that the old and rich part of population in Ukraine may indeed be healthier. At the same time, good self-rated health may be used by wealthy individuals to justify huge expenses on medical services.

If we compare results before applying instrumental variable approach and after we see that estimates do not really differ. The main difference is the variable of prayer. Using IV method we receive totally different result for this factor. Women who pray less often than every day it is more likely to assess their health state as good or very good, when for the question of God`s importance we had the opposite result. The more God is important for women, the less chance for them to rate their health as good.

Such a difference in results with seemingly similar variables may be explained by the fact that considering God important may not mean anything. Much more important is how often a person turns to God and talks to him. That is why we consider the variable with the frequency of prayers to be more indicative.

The fact that people who pray every day most often do not consider themselves healthy can be explained by the fact that they are either really in trouble, or they have an unhealthy perception of religion.

For future research on this topic an enhanced dataset could be used. Another larger survey (i.e., European Values Study) may reveal more precise estimates.

Additionally, it would be interesting to investigate pandemic effect on self-reported health of Ukrainians since it had a substantial effect not only on general health of the population, but also on mental health. In Wave 7 of the World Value Survey, we have data for the period of the pandemic, but to see the whole picture we need the data before and also after some years.

During the coronavirus SARS-CoV-2 people have depressive and anxiety-related symptoms more often relative to baseline (Peters et al. 2020). Moreover, perceived stress increased because of uncertainty, fear of death, loss of loved ones etc.

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