

DO HEALTH SELF-EVALUATIONS IN URBAN AND RURAL AREAS IN LATVIA DIFFER?

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Abstract

Health self-evaluations are aspects analysed by researchers world-wide as from self-evaluation depend many aspects of person's feelings, satisfaction with life and motivation for active life. Researchers have identified that often health self-evaluation is better than reality and the person achieves many goals in their life even with not so good health, and there are many cases when the health self-evaluation is good, but reality is much worse. Comparative data analysis on health self-evaluations in EU countries, EEA countries and EU candidate countries are carried out in EU-SILC. The aim of this article is to investigate – do health self-evaluations differ statistically significant by inhabitants of Latvia in urban areas and in rural areas. Research methods applied: scientific publications analysis, analysis of data obtained in EU-SILC survey using different statistical indicators: indicators of descriptive statistics, cross-tabulations, statistical hypotheses test with t-test on equalities of arithmetic means. Results indicate that although the health self-assessment by inhabitants are higher in rural areas in Latvia in comparison with urban health self-assessment by inhabitants, the difference on averages of those evaluations is not statistically different with significance level 0.001.

Keywords: Latvia, health self-assessment; statistical analysis of survey data; urban and rural areas.

Introduction

Health self-evaluations are aspects analysed by researchers world-wide as from self-evaluation depend many aspects of person's feelings, satisfaction with life and motivation for active life. Researchers have identified that often health self-evaluation is better than reality and the person achieves

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many goals in their life even with not so good health, and there are many cases when the health self-evaluation is good, but reality is much worse. Comparative data analysis on health self-evaluations in EU countries, European Economic Area (EEA) countries and EU candidate countries are carried out in EU-SILC. The aim of this article is to investigate – do health self-evaluations differ statistically significant by inhabitants of Latvia in urban areas and in rural areas. Research methods applied: scientific publications analysis, analysis of data obtained in EU-SILC survey (EU Survey of Income and Living Conditions³ anonymised data) using different statistical indicators: indicators of descriptive statistics (indicators of central tendency or location: arithmetic mean, mode, median; indicators of variability – variance, standard deviation, range and standard error of mean; cross-tabulations, statistical hypotheses test with t-test on equalities of arithmetic means on health self-assessment of inhabitants in urban and rural areas in Latvia and finding confidence interval for self-assessment differences with probability 0.95.

Theoretical findings

Researchers world-wide have analysed inhabitant self-evaluations of their health depending from different aspects, of rural-urban evaluations of health self-evaluations depending from definitions (Dorélien, Xu, 2022) and also questions stated and included in the survey and used telephone interviews (Tagseth et al., 2019) as well as other important factors – mode of questions stated, as well as poverty and income level especially in rural areas (Ma et al., 2016), attitude to life and activities physical and social influencing health conditions and health self-assessment in cities of China (Li, 2006), as well as other influential factors like cross-sectoral study in Poland (Doroszkiwicz, 2022) where detailed aspects are raised by researchers and deeply analysed and evaluated. In Brazil (Peixoto et al., 2022; Martins-Silva et al., 2020) researchers have performed deep analysis where several aspects were analysed by different researchers in Brazil evaluating role of rural work with deep and detailed analysis. Researchers in United States of America (Ma et al., 2022) have found several influential factors and innovative methodology which could be taken into consideration also in other countries. Researchers in China (Zhou et al., 2020) have underlined and pointed out several cultural differences influencing also health self-assessment in different territories including importance of internet in rural areas. Researchers in Jordan (Almhdawi et al., 2022) where in their research there are several aspects have to be taken into account. Researchers from

³ Official Statistics Portal of Republic of Latvia (2022). EU-SILC.

Poland have raised several aspects influencing health self-assessment in cities of Poland (Marcinowicz et al., 2022) and researchers have found that differences are noticed for this aspect of health self-assessment in rural areas of Poland (Stelmach et al., 2004). Researchers have concluded that family life and life-style influence health self-assessment in urban and rural areas (Glendinning, 1998). Important aspect is active life (Nowak, 2006) in all age groups and important and researchers have stressed that very influential are daily living aspects (Xu et al., 2019) influencing health self-evaluation of the inhabitants. Researchers have raised several aspects of health inequality in Slovenia (Artnik, Premik, 2001) where the results of the research is corresponding with researcher's findings also in other countries where on great importance is income of the household taking into account cultural differences of inhabitants (Ahmed et al., 2002) – those factors influence health self-assessment.

Empirical Research Results

In Latvia self-assessment of health is evaluated differently by inhabitants which are surveyed in EU-SILC and anonymised survey data are available for deeper analysis. The main statistical indicators of health self-assessment in Latvia are reflected in Table 1.

Table 1. Main indicators of descriptive statistics of overall health self-evaluation in Latvia in 2019

Statistical indicators		Value of statistical indicator
N	Valid	10933
	Missing	0
Mean		2.81
Standard Error of Mean		0.008
Median		3
Mode		3
Standard Deviation		0.858
Variance		0.737
Range		4
Minimum		1
Maximum		5

Source: Authors calculations based on EU-SILC data, evaluation scale 1–5, where 1 – very good; 2 – good; 3 – average; 4 – bad; 5 – very bad

Survey data indicate that the most often health self-evaluation in Latvia was 3 (average) characterised by mode, half of population in Latvia evaluate

health on average (3) or less and half evaluate on 3 or more, characterised by median. Arithmetic mean of the health self-evaluations was 2.81, it means that there is rather big share of inhabitants influencing the value of arithmetic mean. Distribution of health self-evaluations by inhabitants in Latvia is included in table 2.

Table 2. Distribution of overall health self-evaluation in Latvia in 2019

Evaluations	Frequency	Percent	Valid Percent	Cumulative Percent
Very good	321	2.9	2.9	2.9
Good	3943	36.1	36.1	39.0
Average	4561	41.7	41.7	80.7
Bad	1733	15.9	15.9	96.6
Very bad	375	3.4	3.4	100.0
Total	10 933	100.0	100.0	

Source: Authors calculations based on EU-SILC data, evaluation scale 1–5, where 1 – very good; 2 – good; 3 – average; 4 – bad; 5 – very bad

Data indicate that the biggest share of inhabitants (41.7 %) in Latvia assess their health as average and 36.1 % of inhabitants have assessed their health as good. Indicators of confidence interval on health self-assessment are included in Table 3.

Table 3. Confidence interval of arithmetic mean on overall health self-evaluation in Latvia in 2019

Statistical indicators		Statistic	Standard Error
Mean		2.81	0.008
95 % Confidence Interval for Mean	Lower Bound	2.79	
	Upper Bound	2.82	
5 % Trimmed Mean		2.78	
Median		3	
Variance		0.737	
Std. Deviation		0.858	
Minimum		1	
Maximum		5	
Range		4	
Interquartile Range		1	
Skewness		0.426	0.023
Kurtosis		-0.089	0.047

Source: Authors calculations based on EU-SILC data, evaluation scale 1–5, where 1 – very good; 2 – good; 3 – average; 4 – bad; 5 – very bad.

The results of the calculations indicate that the confidence interval for arithmetic mean in health self-assessment by inhabitants in Latvia is between 2.79 and 2.82 (with 0.95 probability).

Table 4. Main statistical indicators on overall health self-evaluation by territories in Latvia in 2019

TERITORY	N	Mean	Standard Deviation	Standard Error Mean
Urban	7259	2.79	0.852	0.010
Rural	3674	2.85	0.869	0.014

Source: Authors calculations based on EU-SILC data, evaluation scale 1–5, where 1 – very good; 2 – good; 3 – average; 4 – bad; 5 – very bad

Table 4 indicates that higher average evaluations are by inhabitants in rural areas, but there are bigger variability of the evaluations. The question is – are those differences in arithmetic means of the evaluations statistically significant? Results of t-test of independent samples are included in Table 5.

Table 5. Main statistical indicators on t-test of equality of means in rural and urban areas on overall health self-evaluation by territories in Latvia in 2019

Levene's Test for Equality of Variances	t-test for Equality of Means								
	Main statistical indicators for hypotheses testing							95 % Confidence Interval of the Difference	
Variance	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	0.222	0.638	-3.241	10931	0.001	-0.056	0.017	-0.090	-0.022
Equal variances not assumed			-3.221	7249.628	0.001	-0.056	0.017	-0.091	-0.022

Source: Authors calculations based on EU-SILC data, evaluation scale 1–5, where 1 – very good; 2 – good; 3 – average; 4 – bad; 5 – very bad

As Table 5 shows, results of testing hypotheses indicate that the differences in evaluations of health self-assessment do not differ statistically significant in urban and rural areas in Latvia (with significance level 0.001) although the average evaluations in rural areas in Latvia are higher than in urban areas.

Conclusions

Academic research results world-wide have indicated that health self-assessment differ by countries, by territories (urban or rural), by cultural and religion differences, by possibility of internet use, but also by attitude to life and active living.

Health self-assessment is important for quality of life, ability to work and involvement in social life of the respective person.

Health self-assessment by inhabitants in Latvia rural and urban areas does not differ statistically significant although the evaluations in rural areas in Latvia are higher than in urban areas.

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