

# **SOCIAL-ECONOMIC CONDITIONS AND HEALTH SELF-ASSESSMENT IN LATVIA – IS THERE ANY RELATIONSHIP?**

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## **Abstract**

This article presents analysis of subjective health of Latvian population in the context of their social-economic life conditions. The results show that despite age, people's social-economic living conditions play significant role in evaluations of their health situation. The current social economic circumstances tend to be positively related to subjective health evaluations. People who live in better social economic circumstances tend to evaluate their health better than people, who's social economic circumstances are worse. Social economic circumstances are described by net earnings, household's average income, education level and purchasing preferences. In total age and social economic circumstances factors explain about 40 % of variation in subjective health. This interrelationship could be viewed in that way, that inequality in people's living conditions can reproduce inequality in evaluation of their health. As well it is possible to look at the problem from the completely different angle – inequality in health influence social-economic living conditions. Both of them could indicate the inequality problem possibilities.

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**Keywords:** Health, health inequality, social- economic conditions, self-rated health, subjective health

## **Introduction**

When we compare with the situation in the past, people on average have higher life expectancy and their health is significantly better. This tremendous improvement in health is mainly related to societal development in general: vaccination, more affordable health care, better living condition etc. However at the same there is empirical evidence to talk about increased health inequalities that accompanied this societal development. Some authors speak about increasing health inequality in some countries, some about

different social-economic groups (Crombie et al.,2005; World Health Organization, (n.d.); Blomqvist et al., 2014). Increased inequalities in objective living conditions created inequalities in health of the people within society.

The health inequalities exist in most regions of the world, despite the improvement in the market in terms of health and living standards (OECD, 2008). Health inequality refers to the links between individual social-economic position and health. Health and health inequality could be characterized by its multi-dimensional nature. It means that health affects and is affected by different social- economic conditions. Differences in the health or in the social- economic conditions can indicate health inequality problematic. Studies about health inequalities can identify and explain the problematic what is very important in the context of tendencies and resource limitations. From the other hand, explanation could be done only partly, because of health multidimensional nature.

In this article we are going to present multidimensional nature of health and health inequality. We are going to test, based on the existing data possibilities and limitations, relationship between health self-assessment and social- economic conditions in Latvia. For that purpose we are going to employ data collected by M.Banceviča in dissertation development framework. The task of our research is to investigate the interrelation between health self-assessment and social- economic conditions in Latvia.

### **The multidimensional nature of health**

Health inequality reflects the variations of health status in the individual, group or regional level (Kawachi et al., 2002). Distribution of health has a particular pattern that is related to social economic living circumstances. The worse health tends to be concentrated in groups of society that has relatively smaller amount of resources. And more affluent groups or countries tend to possess better health (Riekert et al., 2008). Concept of health inequality is attributed to the fact, that there are systematic differences between individuals in the health because of their unequal position in society (Graham. 2009).

Health includes physical, mental and social functioning of an individual's and well-being (Stewart and Ware, 1998). Health is affected by different risk factors, which also lays down conditions for inequality. Individuals within their behavior are able to at least partially remove the risk factors (World Health Organization, 2002). Risk factors could be determined by the environment (Eyal et al., 2013). Risk factors affects the health, increases the opportunities for morbidity, worsens health and a negatively impacts good health preconditions (Mackenbach, 2002).

Also, the health can be assessed from two perspectives - the objective and subjective, which both can determine the objective interpretation of the content. With subjective factors are generally understood variables that characterize individual's quality of life and well-being self-assessment, the individual's functional ability, action ability and their capacity self-esteem. For example, happiness and satisfaction with life, physical or mental health self-assessment (Sīlis, 2010). The use of subjective factors are based on the assumption, that well-being depends on the individual self-assessment, because the individual is best able to assess what is most important to him, what is good and what is bad and what could be better (Noll, 2000).

Results of several studies indicates that the health self-assessment can be a variable for predicting and determining the public health care system advantages and opportunities, mortality and other relevant variables characterizing the health (DeSalvo et al., 2005). As one of the arguments of variable importance is that health self-assessment includes all aspects characterizing the health. It also includes health impairment symptoms, individual and environmental risk factors. These points to the fact that the health self-assessment includes not only the current health assessment, but also health influencing aspects and health assessment in future perspective. It shows importance of health self- assessment (Wahl, 2006). The second argument is related to subjective perspective impact on the health, where is assumed that if a man feels good (good health self-assessment) it protects individuals from deterioration of health. Negative feeling (bad health self-assessment) has negative impact on the health, for example, in the context of depression (Diener, 2009).

Overall, the health and health self-assessment is influenced by many factors. For example, resources affect the health, setting the conditions of prosperity, which may contribute the preconditions of the health. The resources can be different not only in terms of material living conditions, but as well in terms of interactions between individuals, mutual trust and security (Fritzell and Lundberg, 2007). They can be different as well in terms of resources in the physical environment that affects the health, promote a healthy life and individual well-being (Luker et al., 2011). However, there are different directions of interaction between social – economic conditions and health. On the one hand researchers emphasize that social-economic conditions determinate health and on the other, the opposite direction –health determinate social - economic conditions of a person. For example, income can affect a person's possibilities to buy the necessary medicines and health can determine a person's ability to work only low-paid jobs or even the inability to work (Power and Matthews, 1997).

There are several approaches that analyze the different factors that influence the health. One of them is materialist approach. Materialist

approach provides the theory that poverty, financial situation and their differences contribute the health inequality. Thus inequality in standard of living results into health inequality (Asthana and Halliday, 2006). It states that the cause of health inequality is low income or its consistency (Turrell, 2001).

There are several studies which prove that there is a link between the health inequality and the living conditions (Marmot et al., 1991). This approach is linked to the structural approach understanding (Abel, 2007). People with relatively lower income often have poor health and lower life expectancy (Marmot et al., 1991). In this approach is deemed that the material conditions, material situation has a direct impact on health inequality (Bambra, 2011). However, we can not speak about direct relationship between individual expressions and material risk factors, because these factors which may be identified as material, apparently does not directly affect the health (Mullahy et al., 2004). In this article we analyze whether there is a relationship between social-economic conditions and health self-assessment in Latvia.

## **Methods**

### **Data**

Data collection was made by M.Banceviča in dissertation development framework. Survey was made directly in the respondents homes. General group in accordance with the planned study is population of Latvia. Sample of 1007, according to the statistical error of about +/- 3% (Manheim and Rich, 2006). Sampling was made in accordance with the general group representativeness. The required number of respondents was defined by proportion of the population in the statistical regions, republic cities and counties. The sample was selected randomly, according to the route method. Survey as a whole was extensive, because of extended dissertation research. For the publication was used small portion of the available data of research, according to the set research interests and theoretical framework.

There have been used five questions to measure subjective health. The first question is “How you evaluate your current health?” With a five possible answers: very good, good, average, bad, and very bad. The other four questions used in the analysis are “Do you feel physically well to do, what you want to?”, “Do suffer of a stress on a daily basis?”, “In general, do you have problems with your health?”, “Do those problems with health restricts your everyday life?”. For all of those four questions there are five possible answers: yes, mainly; yes, sometimes; partly; not, almost never; not, never.

Social-economic conditions are described by four variables: the current monthly earnings of respondent; respondent's household's disposable income; respondent's education level, respondents purchasing preferences.

### **Data analysis methods**

Contingency tables were used for defining relationship between subjective health and social-economic circumstances. As subjective health indicator the survey question "How you evaluate your current health?" was used. The original response categories "very good" and "good" were merged to a new category "high subjective health". The category "average subjective health" was left as it is. And the categories "very bad" and "bad" were merged to a new category "low subjective health". As social economic circumstances indicators were used data on net earnings, household income and education level. The net earnings and household income variables were used to define quintiles and based on that to distinguish five groups of respondents according to monetary value. Those original five groups in the analysis process were rearranged in to three groups. For the net earnings and household income were created three groups: low (earnings; income), average (earnings; income), and high (earnings; income). The education variable was recoded to a three categories scale: primary, secondary and tertiary education. Table percentages and chi square statistics were used to define the relationships.

To define interrelationship between age and subjective health graphical examination of subjective health level variation through age groups was established and correlation coefficients were computed.

Multiply linear regression model was used to create overall model of interrelationship between subjective health, age and social economic circumstances. The dependent variable in that model was subjective health as defined by the question variable "How you evaluate your current health?". As independent variables were used age variable and social economic conditions variable that was created through the factor analysis combining individual's net earnings, household average income, education level and purchasing preferences.

### **Subjective health – age and income perspective**

According to survey statistical data people in general described their health as being equal to an average level. In most of times respondents feel healthy enough to do what they want. Occasionally they experience stress in their daily life and have problems with their health. And that those problems with the health in some ways restrict their daily lives. The subjective health survey data profile is described in Table 1.

Table 1. Subjective health survey data profile

<b>SUBJECTIVE HEALTH ASPECTS</b>	<b>AVERAGE POINTS</b>	<b>MODE POINTS AND IT'S DEFINITION</b>
Self-rated state of health (D)	3,1	3 (Average)
Feeling healthy to do what person wants (G)	4,2	5 (Yes, mainly)
Daily stress	2,4	2 (Yes, sometimes)
In general problems with health (I)	2,5	2 (Yes, sometimes)
Problems with health hinder daily activities (J)	3	3 (Partly)

Source: own data and calculations

This fairly expected picture of an average person's subjective health tends to change with his/her age (Figure 1). Younger individuals feel healthier than the older ones on all measured aspects of subjective health. Especially it is obvious for the case of self-rated state of health (correlation between age and self-rated state of health is equal to 0,6,), general problems with health (correlation 0,5), problems with health hinder daily activities (correlation 0,4). And less obvious for case of daily stress (correlation 0,1). Thus aged persons are more pessimistic about their health than younger ones. That could be related with more frequently occurring objective problems with the health are reflected in subjective evaluations.

Beside age, person's subjective health varies with his/her current social-economic situation. And this situation is important predictor of his/her subjective health as well. To portray that as a subjective health measure we use self-rated status of health variable. As a social-economic situation measure we use individual's net earnings, his/her household's average income, his/her education attainment level. Statistical cross-tabulation proves statistically significant interrelationship between the subjective health and social-economic status.

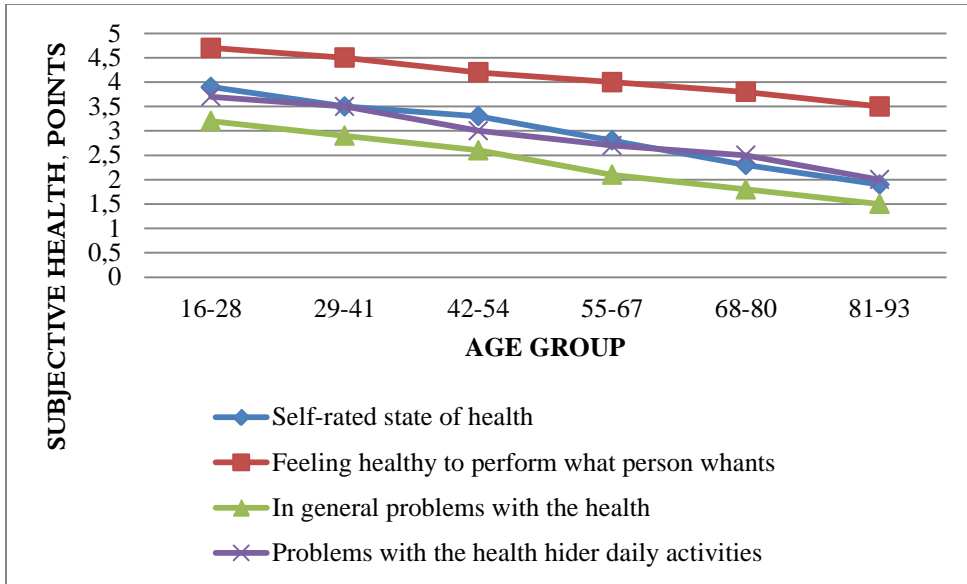


Figure 1. Subjective health and age Source: own data and calculations

Table 2 describes statistically significant interrelationship between individuals’ subjective health and his/her earnings. Figures show that higher net earnings of an individual corresponds to higher probability that he/she will have low subjective health. High net earnings group contains much more individuals who report high subjective health than low net earnings group.

Table 2. Interrelationship between subjective health and net earnings of the respondents

		Net earnings groups			Total	
		Low	Average	High		
Subjective health groups	Low	Count	176	40	31	247
		% within subjective health	71,3%	16,2%	12,6%	100,0%
		% within net earnings	42,6%	20,9%	7,7%	24,5%
	Average	Count	153	84	171	408
		% within subjective health	37,5%	20,6%	41,9%	100,0%
		% within net earnings	37,0%	44,0%	42,4%	40,5%
	High	Count	84	67	201	352
		% within subjective health	23,9%	19,0%	57,1%	100,0%
		% within net earnings	20,3%	35,1%	49,9%	35,0%
Total		Count	413	191	403	1007
		% within subjective health	41,0%	19,0%	40,0%	100,0%
		% within net earnings	100,0%	100,0%	100,0%	100,0%

Source: own data and calculations

Table 3 describes interrelationship between subjective health of an individual and the disposable income of his/her household. Statistical data show that the higher individual’s household disposable income correspond to higher subjective health of an the individual. High household disposable income group contains much more respondents who reports high subjective health than low household disposable income group.

Table 3. Interrelationship between subjective health and the disposable income of individuals household

		Household disposable income groups			Total	
		<i>Low</i>	<i>Average</i>	<i>High</i>		
Subjective health groups	<i>Low</i>	Count	207	18	22	247
		% within subjective health	83,8%	7,3%	8,9%	100,0%
		% within household disposable income	49,9%	7,6%	6,2%	24,5%
	<i>Average</i>	Count	151	112	145	408
		% within subjective health	37,0%	27,5%	35,5%	100,0%
		% within household disposable income	36,4%	47,5%	40,7%	40,5%
	<i>High</i>	Count	57	106	189	352
		% within subjective health	16,2%	30,1%	53,7%	100,0%
		% within household disposable income	13,7%	44,9%	53,1%	35,0%
Total	Count	415	236	356	1007	
	% within subjective health	41,2%	23,4%	35,4%	100,0%	
	% within household disposable income	100,0%	100,0%	100,0%	100,0%	

Source: own data and calculations

Table 4 indicates interrelationship between subjective health and individual's education level. The higher education level group corresponds to higher percentage of individuals reporting high subjective health and lower percentage of individuals reporting low subjective health. This interrelationship could be explained through the correlation between education and income. Higher level of education corresponds to higher level of income. And the interrelationship between income and subjective health is already established above.

Table 4. Interrelation between subjective health and level of education

		Education level			Total	
		<i>Primary</i>	<i>Secondary</i>	<i>Tertiary</i>		
Subjective health	<i>Low</i>	Count	75	96	75	246
		% subjective health	30,5%	39,0%	30,5%	100,0%
		% within Education level	57,3%	26,4%	14,7%	24,5%
	<i>Average</i>	Count	44	147	217	408
		% subjective health	10,8%	36,0%	53,2%	100,0%
		% within Education level	33,6%	40,4%	42,5%	40,6%
	<i>High</i>	Count	12	121	219	352
		% subjective health	3,4%	34,4%	62,2%	100,0%
		% within Education level	9,2%	33,2%	42,9%	35,0%
Total	Count	131	364	511	1006	
	% subjective health	13,0%	36,2%	50,8%	100,0%	
	% within Education level	100,0%	100,0%	100,0%	100,0%	

Source: own data and calculations



Similar tendencies between social-economic situation could be observed for the variables other variables such general problems with the health and problems with the health hinder daily activities. Thus theoretically it was possible to combine those separate variables as a single latent factor, but practically when only self-rated state of health variable is used the regression analysis explain bigger percentage of health. Finally it is possible to create regression model that describes interrelation between age, current social economic circumstances and current subjective health of an individual (Fig. 2). Social-economic status in that model is a latent variable that have been created through the factor analysis. This latent variable contains such raw variables as households net income, person's education level and purchasing preferences. The coefficients in that model are standardized, indicating that age has bigger impact on subjective health than the social-economic circumstances. This model has limitation, as it does not include some other aspects that might have an impact on subjective health such as impact of genetics; objective health; past social economic status; random environmental circumstances. However, this model explains part of the story that could be used for the further analysis that would include a broader range of variables. The age and social economic circumstances of an individual explain 40 % of variation in his/her subjective health.

$$\text{SUBJECTIVE HEALTH} = 1,6 - 0,48 \text{ AGE} + 0,23 \text{ SOCIAL AND ECONOMIC CIRCUMSTANCIES}$$

Age and social economic circumstances are important factors for the individuals subjective health. Those factors account for more than a half of all variation in subjective health. The higher age, the lower subjective health of an individual. Social-economic circumstances have impact on subjective health in an opposite direction. The better social-economic circumstances that describe individual's life the higher his/her subjective health. The age and social economic circumstances may impact subjective health through objective health situation. The link between objective and subjective health was established previously by A. Gataūlinas and M. Banceviča (2014).

## Conclusion

Concept of health inequality is attributed to the fact, that there are systematic differences between individuals in the health because of their unequal position in society (Graham, 2009).

Unequal position could be connected with different kinds of social – economic conditions. Health includes physical, mental and social functioning of an individual's and well-being (Stewart and Ware). Health is affected by different risk factors, which also lays down conditions for inequality. Also there are different directions of interaction between social – economic conditions and health. On the one hand researchers emphasize that social-

economic conditions determinate health and on the other, the opposite direction. Both of them could indicate the inequality problem possibilities.

Survey includes sample of 1007 from general population of Latvia. Results shows that subjective health is significantly related to person's age and his/her social economic circumstances. Based on the survey data there is statistical evidence that age is negatively interrelated with person's evaluation of his/her own health. Due to worse objective health situation older persons tend to evaluate their health situation more negatively than younger persons. Especially it is obvious for the variables that are expressed by the categories - self-rated state of health; general problems with health; problems with health hinder daily activities. The current social economic circumstances tend are positively related to subjective health situation. People who live in better social economic circumstances tend to evaluate their health more positively than people, who's social economic circumstances are worse. Social economic circumstances are described by net earnings, household's average income, education level and purchasing preferences. In total age and social economic circumstances factors explain about 40 % of variation in subjective health.

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