

# The influence of income on subjective well-being

The phenomena of materialism in science, led to the direct link of income to well-being. Despite dualism of well-being (subjective and objective), it was interpreted as mostly influenced by income, what led to uncontrolled worldwide economic growth explained by increase of welfare. The object of this article is the influence of income to happiness. The aim is to determine how economic factor of income influence subjective well-being (happiness) in the context of Europe. Following questions can reflect the problem of this article: Do inhabitants of wealthy countries have higher evaluation of happiness? Does higher income guarantee higher happiness? Does increase of income lead to the increase of happiness?

**Keywords:** income, welfare, subjective well-being, happiness, diminishing marginal utility, economics of happiness.

Materializmo reiškiny mokslė nulėmė tiesioginės sąsajos tarp gerovės ir pajamų atsiradimą. Nepaisant prigimtinio gerovės reiškiny dualumo (subjektyvios ir objektyvios gerovės), didėjančios pajamos tapo didėjančios gerovės sinonimu ir pretekstu. Straipsnio objektas – subjektyvios gerovės (laimės) ir pajamų sąryšis, kuris yra analizuojamas atsižėvgiant į 3 probleminius klausimus: Ar turtingų šalių gyventojai yra laimingesni? Ar aukštesnės pajamos lemia didesnę laimę? Ar didėjančios pajamos nulėmia didėjančią laimę?

**Raktiniai žodžiai:** pajamos, subjektyvi gerovė, laimė, mažėjančio naudingumo dėsnis, laimės ekonomika.

**JEL Classifications:** I31/C01/Z13/O52.

## Introduction

The question of how we can experience more satisfaction and less pain is the one, which was raised from times of ancient philosophy – the background of all modern sciences. Dilemma between scarce resources and infinite human needs became the ground stone of economic science. Individual or society well-being maximisation, which was reached by minimising costs and increasing all types of

utility, was analysed in early Mercantilism, Classical Economy and New Modern Economic School thoughts and branches. The relation between utility and costs or utility maximisation became the beginning idea of Utilitarianism and whole welfare economics.

Despite the fact that many ancient philosophers (Socrates, Plato, Aristotle), who formed the point of view of many later

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scholars, the satisfaction of human needs mostly related to dematerialised subjects and the feeling of happiness (eudemonia), the materialisation cult domination in science led to the symbiosis of welfare and wealth. Welfare economics became the branch of economics, which tries to explain human and society welfare dependence on material factors (such as GDP or income per capita).

Eventually utility, satisfaction and welfare (or well-being, which is used as synonym), in science and society became equivalent to wealth, to be precise – to income. This situation justified the increase and maximisation of welfare by free and uncontrolled worldwide economic growth. This led to the great inequality among nations – the wealth of ones and poverty of another.

However, welfare economics tried to explain objective part of societal welfare or, to be precise, the part of welfare, which depends on money. This led to the creation of welfare states in many Western countries. But small group of scientists, led by Richard Eatslerlin, gave some subjectivity to the notion of well-being. In the research field they introduced phenomena of well-being already mentioned in ancient Greece – happiness. This started revolutionary idea spread by new branch of science – Economics of happiness, which analyses the relationship between income and subjective well-being indicator – happiness.

Despite the fact that relation between income and happiness was studied in some cases, absence of answers to main problematic questions raised by studies of R. Easterlin (1995; 2001a), D. G. Blanchower and A. J. Oswald (2000), and others, lead to importance and significance of further investigations. These questions can be formed as Hypothesis of this article:

H<sub>1</sub>: Inhabitants of wealthy nations are happier compared to those in poor ones;

H<sub>2</sub>: In the giving period, individuals with higher income are happier than those with lower one;

H<sub>3</sub>: The increase of income leads to the increase of happiness.

The **object** of this article is the influence of income to happiness. **Target** is to determine how economic factor of income influence subjective evaluation of well-being (happiness) in the context of Europe.

For this reason, **tasks** for this objective have been raised:

- analyse how subjective well-being is influenced by the factor of income per capita in each and all given countries;
- compile econometric regression equation which reflects income influence on happiness in every nation and all of them;
- find the value of income per capita, which maximises happiness.

## The background of researches

The relationship between income and subjective well-being, which is usually measured as happiness, was analysed in many countries. R. Easterlin (1995; 2001a), D. G. Blanchower and A. J. Oswald (2000) analysed data based on USA, R. Di Tella et al. (1999) – European Union, B. S. Frey and A. Sutzer (2000) – Switzerland. Above mentioned researches showed that on concrete period of time, rich countries tended to be happier than poor ones. This relationship was explained by the fact that rich people have more and better opportunities to satisfy their needs, than these needs are linked with material (monetary) goods and services.

R. Easterlin, who is the founder of

Economics of happiness, in his research on 2001 found that statistic relationship (correlation) between income and happiness is equal to 0.2. This number shows very low, but still significant (according to scientist) correlation. After this analysis he came to the resolution that low correlation between income and happiness is caused by many other factors, which are also important and influence satisfaction of everyone's life.

However, B. Stevenson and J. Wolfers (2000) study neglected R. Easterlin findings about weak statistical correlation. Opinion that there is strong relationship between income and happiness is common between scholars. That turned research from relation to cause analysis. In order to explain – income cause greater happiness or happiness cause greater income, S. Smith and P. Razzel (1975), J. Gardner and A. J. Oswald (2001) in their research made resolution that the cause tends to be from income to happiness.

Despite the common view about income and happiness relationship, Euro barometer made study on data based from 1975 to 1991. This gave manifestation that absolute increase in income does not cause happiness on life in long period. In this place the effect of decreasing utility can be perceived, when increase in income leads to increase in happiness by decreasing rate. According to this principle (if it would be right) would mean that increase of income among lower budget individuals increase subjective well-being by greater amount than for those, with higher one. This phenomenon was analysed by R. Easterlin (2004b), but because of uncertain data, results were not significant enough for use and adoption in social policies.

R. Inglehart (2000) and others made a research to investigate if rich countries are happier than poor ones. They analysed

data of income per capita and happiness in 51 countries and found that higher level of income was related with higher value of subjective well-being. However, B. S. Frey and A. Stutzer (2001) bring more uncertainty by new finding which manifest that correlation between income and happiness can be due to other factors, common among developed countries, such as democracy, higher quality health and social security systems and etc.

To sum up these researches, the conclusion can be made that despite common point of view about close relationship between income and happiness, there is another group of scholars who are led by the R. Easterlin Paradox and his findings. This group neglects conviction that subjective valuation of well-being is materialised. However, in order neglect the indisputable relation between income and happiness, further and comprehensive research must be made. This demand was prioritised and recommended by R. Easterlin (2004a) in one of his articles, called "*Diminishing Marginal Utility of Income? A Caveat*".

## Methods of analysis

The context, period, data and main research methods, which contribute to achievement of objectives, are represented in this chapter.

The influence of income to happiness is analysed in the context of 21 European nations. They were selected in accordance to size, development, income per capita and locational structure of Europe. Countries were classified into categories reflecting size (small and big), and level of development (developed and developing). Classification is showed in Figure 1. All

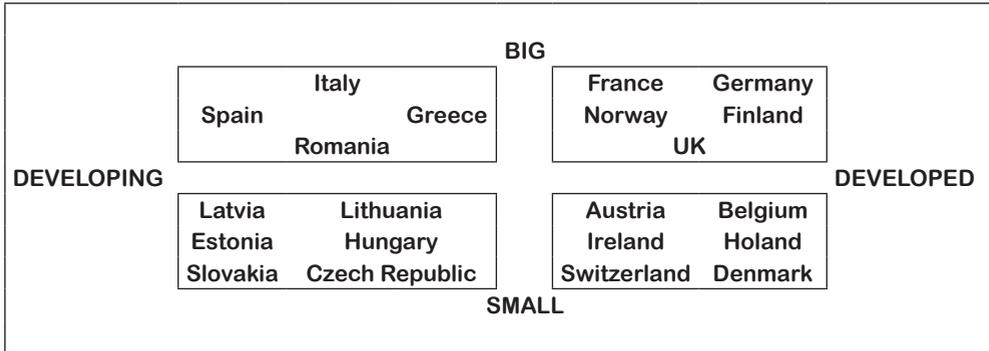


Fig. 1. Classification of European countries

Note: made on basis of authors' classification.

countries, except Norway and Switzerland, belong to European Union.

On purpose for appropriate relationship valuation of economic factor to subjective well-being, the period of 11 years (from 2000 to 2011) is chosen. Size of period was selected on bases of eligible quantity and reliable accessibility principles. There are two outliers in the period (the expansion of EU in 2004 and financial crisis in 2008), which ex ante and ex post analysis allows to determine long term tendency of relationship between analysed phenomena.

On bases of accessibility and reliability criteria, data was collected from European statistic department, World Bank, OECD and Wold happiness database sources.

In order to approve or neglect hypothesis, there is a research made on relationship between income per capita and happiness. For this reason correlation, regression, comparative and graphic analyses are made. Observation covers analysis of the whole and separate periods. In order to compare the difference of proportion in income and happiness variations, research is supplemented by marginal income utility analysis. Data is analysed using SPSS 17 statistical package.

First variable in analysis is average

happiness valuation in 10 grade system, where individual answers to question: "how happy you are?" (where 10 means very happy; 5 – average happy; 1 – unhappy). Variable is measured in ordinal scale. Second variable is income (GDP) per capita, which belongs to cardinal scale and is one of the most common economical success and development indicator.

Methods used in analysis are correlation analysis, analysis of marginal utility and linear regression.

**Correlation analysis** shows the statistical relationship between random variables. Correlation in range of [+0.7; +1] is considered to be strong. Correlation value equal or near equal to 0 is considered to be absent or insignificant.

**Analysis of marginal utility** reflects utility (or costs) caused by increased consumption of goods. The law of decreasing marginal utility states that the increase of consumption decreases its utility (unit which was consumed first brings more utility than unit which was consumed further). Marginal utility (MU) is calculated by formula (Rittenberg, Trigarten, 2009):

$$MU = \frac{\Delta \text{Income}}{\Delta \text{Outcome}} \quad (1)$$

**Linear regression** is used to value the statistical relationship between two variables where one variable is dependent (response) and another independent (explanatory). In case of one independent variable, regression has standard expression:

$$y = \beta_0 + \beta_1 * x \quad (2)$$

Coefficient  $\beta_0$  is secant of regression line (value of y when x equals to zero) and shows the value of dependent variable in two cases – when independent variable is insignificant or (coefficient  $\beta_1$  is equal to zero) equal to 0. Coefficient  $\beta_1$  shows the slope of regression line and amount of change in dependent variable when independent changes by 1. Coefficient  $\beta_1$  is calculated using formula:

$$\hat{\beta}_1 = \frac{S_{xy}}{S_x} \quad (3)$$

where:

$$s_{xy} = \sum xy - \frac{\sum x * \sum y}{n} \quad (4)$$

and:

$$s_x = \sum x^2 - \frac{(\sum x)^2}{n} \quad (5)$$

$\beta_0$  coefficient is calculated using formula:  $\hat{\beta}_0 = \bar{y} - \hat{\beta}_1 \bar{x}$  (6)

where,  $\bar{y}$  and  $\bar{x}$  are averages of dependent and independent variables.

When linear regression equation is made it is necessary to verify hypothesis of significance. Hypothesis  $H_0: \beta_1 = 0$  and its alternative  $H_1: \beta_1 \neq 0$  are examined. If  $H_0$  is confirmed, on basis of equation  $y = \beta_0 + \beta_1 x$ , the inference can be made that average value of y is equal to  $\beta_0$  for each value of x and independent variable x does not

influence dependent variable (there is no significant relationship between variables). If  $H_0$  is denied, the inference can be made that change of independent variable x influence change of dependent variable y by value of  $\beta_1$ . Hypothesis is verified in accordance to p-value or level of significance in the test. Value of p is probability of validity in zero hypotheses. Usually this probability is equal to 5 % (value p = 0.05) (Kenney and Keeping, 1962).

## Relationship between income and subjective well-being

Scholars had time not only to approve but also to neglect correlation relationship between income and subjective well-being reported as happiness. If such relationship were a fact, increase in income would cause increase in happiness (even though correlation does not show the cause, scholars proved that trend is from increase of income to increase in happiness). Despite popular idea, that income does significant influence on happiness, one opinion in this research field does not exist. This research will help to accept or reject three main hypotheses raised in the beginning of the article:

- $H_1$ : Inhabitants of wealthy nations are happier compared to those in poor ones;
- $H_2$ : In the giving period, individuals with higher income are happier than those with lower one;
- $H_3$ : The increase of income leads to the increase of happiness.

In order to verify **hypothesis 1**, all nations of research are sorted in ascending (Table 1) and descending (Table 2) order by their average period GDP per capita happiness valuation.

*Table 1*

**8 happiest and wealthiest nations**

List of happiest nations	List of wealthiest nations
Denmark	Norway
Switzerland	Switzerland
Norway	Ireland
Netherlands	Netherlands
Finland	Austria
Ireland	Denmark
United Kingdom	Belgium
Belgium	United Kingdom

*Note:* made by authors on the basis of Eurostat and World happiness database data.

*Table 2*

**8 unhappiest and unwealthiest nations**

List of unhappiest nation	List of unwealthiest nations
Romania	Romania
Hungary	Latvia
Lithuania	Lithuania
Latvia	Estonia
Greece	Hungary
Slovakia	Slovakia
Estonia	Czech Republic
Italy	Greece

*Note:* made by authors on the basis of Eurostat and World happiness database data.

Table 1 demonstrates that the highest average of happiness in the given period is noticeable in Denmark (8.2 from 10), when according to the data of GDP per capita, it is only in the 6 position (28064 Eur.). While Norway, with highest GDP (38709 Eur.) between observable countries, is in the 3rd position (7.9 from 10). Finland can be named as exclusion of lists – according to happiness value it is in the 5th position while according to GDP per capita it is only in 10th outrunning countries with higher GDP value as Ireland, United Kingdom, Belgium, Germany and

France. In the other hand Ireland, which according to GDP per capita is 5th, in the happiness list is in the 10th position descending for such countries as Czech Republic, Belgium, Denmark, United Kingdom and Finland.

Table 2 reflects countries, which had lowest average GDP per capita, and happiness values. Lowest happiness and GDP per capita, between countries in the research, was found in Romania (4.51 from 10 and 8634 Eur.). As exclusion, Italy can be mentioned which in the list of unhappiest countries is 8th. But between wealthiest countries it is 12th. However Czech Republic, which is 7th unwealthiest country lists in the 9 position between happiest countries outperforming such countries as Germany, Austria and France.

This analysis showed that despite some exceptions, there is a tendency that people in wealthy countries are happier than those in unwealthy. Tendency can be illustrated by the fact that 10 wealthiest countries with GDP per capita equal to 29242 Euros had value of happiness equal to 7.35; while in 10 unwealthiest countries with GDP per capita equal to 15691 Euros, happiness was valued by 5.55 from 10.

Phenomena can be explained by the fact that people in rich countries have higher life satisfaction imposed by wider opportunities of goods and services that they can buy or achieve with more income than they earn. However there are other characteristics common to these countries: better infrastructure in high education, health secure systems and other sectors; higher political and social freedom and better implementation of democracy.

In verification of **hypothesis 2**, we have to repeat that highest average GDP per capita in all analysed period was in Norway, while highest average level of happiness

was in Denmark. This already gives a signal that highest income does not necessarily mean highest happiness in the specific period of time.

This can be proved by information in Table 3, where highest GDP per capita and happiness data in specific years is reflected.

Despite the fact that GDP per capita in Norway was the highest, in the list of happiness this country was 3rd in the whole period. This means that there were always 2 countries with lower income but higher happiness, for example: Switzerland and Denmark. Ireland can be named as most noticeable misconception between income and happiness. In the period of 2003 to 2007, GDP per capita in Ireland was 2nd, but country was absent from the top 5 happiness scorers, what approves statement that higher income in specific period does not necessary correlate with higher valuation of happiness. Denmark can be named as opposite example. In the period of 2001 to 2010, this country had highest happiness among all but in the same time there were at least 4 countries which had higher GDP per capita value.

To sum up verification of hypothesis 2 it is necessary to say that despite the fact that wealthier countries tend to be happier (hypothesis 1), higher income does not guarantee higher happiness in specific period of time (hypothesis 2).

After the static analysis of income and happiness the dynamic analysis will be made. In the test of **hypothesis 3**, the influence of income to happiness will be analysed in each and all countries separately. In order to analyse this relationship, correlation analysis will be made.

Strong positive correlation (range [0.7; 1]) was found in Denmark, Estonia, Finland, Lithuania, Romania, and Slovakia

Highest GDP per capita and happiness values in 2000-2010 period

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Highest income countries</b>	Norway										
	Switzerland	Switzerland	Switzerland	Ireland	Ireland	Ireland	Ireland	Ireland	Switzerland	Switzerland	Switzerland
	Netherlands	Netherlands	Ireland	Switzerland	Switzerland	Switzerland	Switzerland	Switzerland	Netherlands	Netherlands	Netherlands
	Ireland	Ireland	Netherlands	Netherlands	Netherlands	Netherlands	Netherlands	Netherlands	Ireland	Ireland	Ireland
	Denmark	Denmark	Denmark	Austria	Austria	Austria	Austria	Austria	Ireland	Austria	Denmark
	Switzerland	Denmark	Austria	Denmark	Denmark						
<b>Highest happiness countries</b>	Denmark	Switzerland	Denmark	Switzerland	Switzerland						
	Norway										
	Netherlands										
	Ireland	Ireland	Ireland	UK	Finland						

Note: made by authors on the basis of Eurostat and World happiness database data.

Table 3

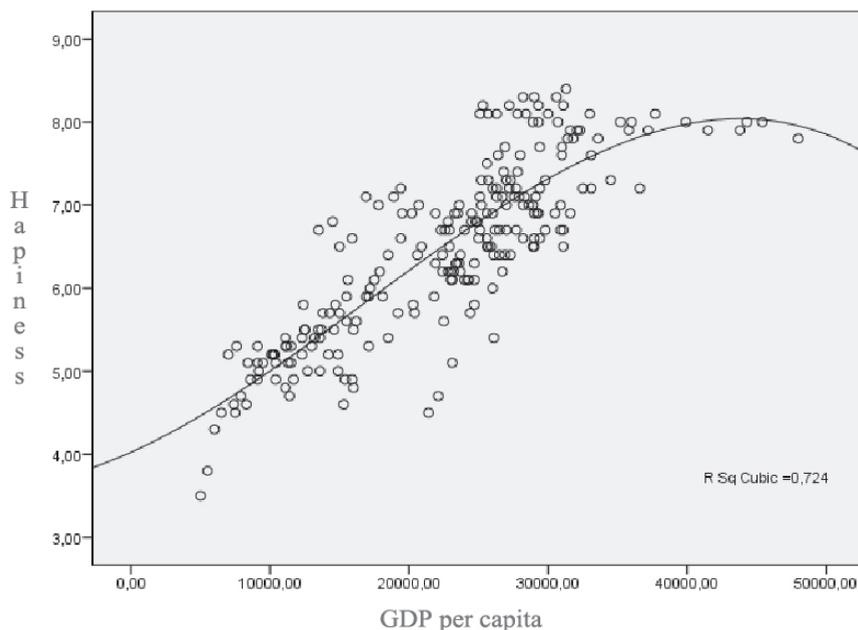
(note: 4 of 6 countries are developing), average positive correlation (range [0.5;0.7]) was found in Belgium, Czech Republic, Latvia, The Netherlands, and United Kingdom. Weak positive or negative correlation was found in France, Ireland, Norway, and Spain. Strong negative correlation can be tracked in Italy and Hungary, average negative correlation – in Austria. To sum up this correlation analysis, we can highlight that strong or average correlation was found in 11 cases out of 21. In 6 cases from 11 this correlation was found in developing countries. Analysis shows that increase in income is more important in the case of developing countries, while in developed it is not so significant.

Similar results were found in regression analysis. In the calculation of regression formulas, which show how happiness

is influenced by income, significance (coefficient of determination is higher than 0.5 or independent variable explains at least 50 % of dependent) was found in 8 cases out of 21. 6 significant cases were found in developing countries, while in 2 out of these, showed negative impact of income.

Figure 2 shows the relation between income and happiness in all analysed countries.

If we put independent variable – income (GDP per capita) – on horizontal axe and the valuation of subjective well-being (happiness) – on vertical, some tendencies in graphical analysis can be traced out. We can notice the slight decrease of happiness in high-income group and highest concentration of happiness in specific range of income.



**Fig. 2. Relationship between income and happiness**

*Note:* made by authors on basis of Eurostat and World happiness databases.

In dynamic analysis of income and happiness variations, these patterns were found:

1. Valuation of happiness was increasing in majority of countries (Belgium, Denmark, Finland, Germany, Ireland, The Netherlands, UK) in period 2000 to 2001; and (Belgium, Denmark, Finland, France, Germany, Ireland, The Netherlands, Switzerland, UK) in period 2003 to 2004; while GDP per capita was increasing as well.

2. Valuation of happiness was decreasing in majority of countries (Belgium, Denmark, Ireland, The Netherlands, Norway, Switzerland and UK) in period 2001 to 2002; and (Austria, Belgium, Germany, Ireland, The Netherlands) in period 2002 to 2003; while GDP per capita was decreasing as well.

3. In the period from 2006 to 2007 the different tendency can be found. Valuation of happiness in many countries (Belgium, Finland, France, Ireland and Switzerland) was decreasing, while GDP per capita grew up.

4. In the period of economic crisis happiness in all developed countries was decreasing together with decreasing GDP per capita. However quite different shift can be seen in Spain, Greece, Estonia, Hungary, Lithuania, Latvia, and Romania where despite decreasing income, happiness grew up.

5. In the last period of analysis (2009 to 2010), while income was increasing in all countries, happiness fell in Belgium, Denmark, Finland, France, and Germany.

The influence of income to happiness can be illustrated by marginal utility of income to happiness, which shows how valuation of happiness changes in accordance to the change of income. Diminishing marginal utility of income can be seen in the trend line drawn in Figure 2. Marginal utility of income (MUI) is calculated using formula:

$$MUI = \frac{\Delta \text{happiness}}{\Delta \text{GDP per capita}} \quad (7)$$

where, MUI – marginal utility of income to happiness;  $\Delta$  happiness – change of happiness valuation in period  $x$ ,  $\Delta$  GDP per capita – change of income in period  $x$ .

MUI was calculated to each country of analysis, for the period from 2000 to 2010. MUI was sorted in ascending order of income. MUI was calculated for 2 groups of countries – developed (average income in period is higher than 24 thousand Euros) and developing (average income in period is less than 24 thousand Euros). Results of MUI are represented in Figures 3 and 4.

In the group of developing countries the tendency exists that with the increase of income, marginal utility of income tends to increase (except periods 5, 6 and 8). If we take a look to whole period, it is obvious that MUI, when income is low (periods 1, 2 and 3), is lower than MUI, when income is higher (periods 7 and 9). This can lead to conclusion that the increase of income unit in developing countries tends to increase happiness.

Despite MUI growth in the 4 period, in the group of developing countries, different tendency can be seen. When income is lower (period 1, 2 and 3), MUI tends to be higher than the one in the higher income period (7, 8 and 9). This shows that MUI tends to decrease and so does happiness with increase of income.

In the observation of MUI, one important conclusion can be made – while observing developed and developing countries in the range of average income (nearly 24-25 thousand Euros) increasing marginal utility of income can be traced out, while with further increase of income, MUI tends to decrease or become negative.

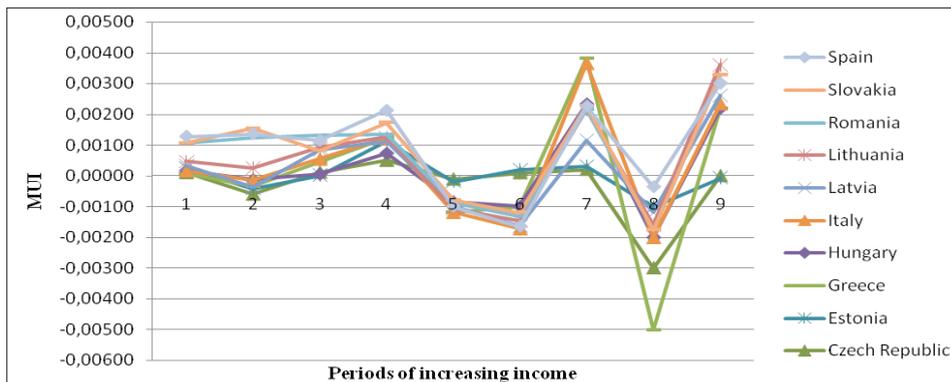


Fig. 3. MUI of developing countries

Note: made by authors on basis of their own calculations.

In observation of highest MUI in developed countries, was noticed that in 6 cases out of 11 (Austria, Belgium, Denmark, Finland, France, Germany, The Netherlands) income was in range of 25 to 28 thousand Euros per capita. In other 3 cases (Finland, Ireland and UK), the second highest MUI was noticed in same range. Quite similar tendency can be seen in the analysis of maximum happiness. The highest happiness

in Austria, Belgium, Denmark, Finland, France, Germany, Ireland, The Netherlands, and UK appeared when income reached 25-26.5 thousand Euros. Spain can also be an example with happiness heights while income was 26 thousand Euros. This highest happiness concentration in income range from 26 to 28 thousands Euros can be seen in Figure 1 as well.

These remarks confirm thesis about

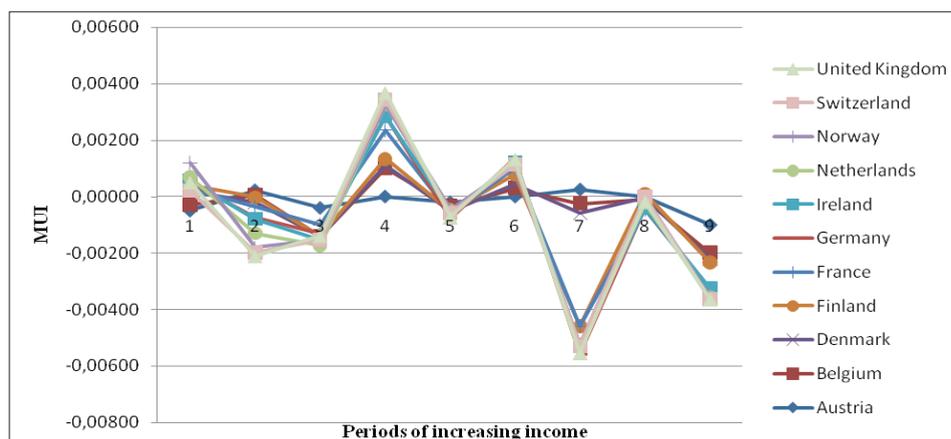


Fig. 4. MUI in developed countries

Note: made by authors on basis of their own calculations.

diminishing marginal utility. When countries reach adequate income boundary (26-28 thousands Euros), happiness valuation becomes maximum. After this range, additional income creates diminishing utility, which according to trend line in Figure 2, becomes negative. These findings serve for verification of hypothesis 3. Hypothesis can be neglected because increasing income leads to increase of happiness until certain level. After the boundary, happiness (according to research) tends to decrease. This coincides with R. Easterlin opinion about diminishing marginal utility of income. The case of 21 Europe nations can prove that after particular level of income, basic needs are satisfied and additional earnings do not influence happiness at the same pattern as in developing countries.

However, further research can be made while analysing relationship between income and happiness reflected in Figure 2. This relationship leads to the creation of regression formula. The best regression formula, which reflects relationship, according to coefficient of determination, is cubic. Using cubic formula, the graph of regression can be drawn (Figure 2). It is obvious that according to graph, turning point, which symbolises negative additional income influence to happiness, exists. This turning point, or the point which maximises happiness, can be found using derivatives.

Relationship between income (variable INC) and happiness can be explained using this regression equation:

$$\text{Happiness} = 4.02 + 7.48 \cdot 10^{-5} \cdot \text{INC} + 2.85 \cdot 10^{-9} \cdot \text{INC}^2 - 5.64 \cdot 10^{-14} \cdot \text{INC}^3;$$

*It's derivative:*

$$\text{Happiness}' = 7.5 \cdot 10^{-5} - 5.72 \cdot 10^{-9} \cdot \text{INC} - 1.69 \cdot 10^{-13} \cdot \text{INC}^2;$$

*Derivative is equalled to 0 in order to find its maximum point:*

$$7.5 \cdot 10^{-5} - 5.72 \cdot 10^{-9} \cdot \text{INC} - 1.69 \cdot 10^{-13} \cdot \text{INC}^2 = 0;$$

*Then, equation with one unknown variable (INC) is solved, finding its maximal value:*

$$\text{INC}_{\max} = 43807.84 \text{ Eur.}$$

According to calculations, there was found that maximum happiness among countries observed, was achieved when the level of income was 43807.84 Euros per capita. Whereas regression is cubic, after this point, the increase of income leads to decrease in happiness. These findings prove that income does not positively influence happiness till infinity, but at some boundary or income range, tend to decrease it, what helps to neglect hypothesis 3 for the second time. While highest valuation of happiness concentrates in the range of 26-28 thousand Euros, it slightly increases till level of 43 thousands, and after it – tends to decrease.

However, the increase in income level is very important in developing countries, where additional earnings cover satisfaction of basic and other needs. After satisfaction of these needs, reached due to purchase of goods and services, additional income does not create the same utility as at first. As happiness is linked to satisfaction of human needs, this situation can be explained using A. H. Maslow (1943) hierarchy of needs. This theory allows us to do inference that first stage needs (physiological and security) are mostly satisfied by monetary recourses. In the satisfaction of further needs, income is not as necessary as it was before. However, according to Nobel winner D. Kaheman (2001), as people become rich, they suffer from lots of psychological problems, which

they haven't had before. This can explain why increase in income, according to research, leads to the decrease of happiness.

## Conclusions

In the popular scientific and public opinion, welfare of society or its individuals is determined by material well-being. When increase of income was directly linked to the increase of welfare, decisive increase in production outcomes in many countries came into force.

There are two types of well-being – subjective and objective. The latter is explained by standards of living, which are highly influenced by material prosperity. Subjective well-being is usually measured using questionnaires or simply by asking individuals how happy or satisfied they are.

The aim of this research is to find how objective factor of income influence subjective valuation of happiness by verifying three main hypothesis:  $H_1$  Inhabitants of wealthy nations are happier compared to those in poor ones;  $H_2$  In the giving period, individuals with higher income are happier than those with lower one;  $H_3$  The increase of income leads to the increase of happiness.

Despite some exclusion, there is a tendency that inhabitant in developed countries are happier than those in developing. This can be illustrated by the fact that 10 wealthiest countries (GDP per capita on average was 29242 Euros) had their happiness valuation equal to 7.35, while 10 unwealthiest (GDP per capita on average was 15691 Euros) valued their happiness on average of 5.55.

Research showed that despite tendency of happier inhabitants in wealthy countries, higher income does not guarantee higher valuation of happiness.

After correlation analysis there was found that strong or average relationship between income and happiness exists in 11 countries out of 21. 6 countries out of 11 with significant correlation were assigned to developing ones. Whereas average positive, weak positive, negative or average negative correlation was found in most of developed countries. These findings prove that increase of income is highly important in developing countries.

According to regression analysis significance was found in 8 cases of 21 (independent variable explains dependent variable by more than 50 %). 6 cases out of 8 were found in developing countries, while 2 of these 6 showed negative impact of income to happiness.

Dynamic analysis of relationship showed that in the group of developed countries, increasing marginal utility can be found until the average income range of 26 to 28 thousand Euros per capita. After this range marginal utility of income tends to decrease what causes the phenomena of decreasing utility. This leads to situation when additional income does not create adequate utility as at the lower level of income or even become negative. While in the case of developing countries, where income level is less than 26 thousand Euros per capita, increasing marginal utility was found.

In order to find level of income, which maximises happiness and which turns additional income to decrease happiness, cubic regression equation between income and happiness was analysed. Calculations lead to the conclusion that in the case of 21 country of research, level of income, which maximises happiness, is equal to 43807.84 Euros per capita. According to regression line, when this level is reached, no further increase of happiness can be seen.

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## **PAJAMŲ ĮTAKA SUBJEKTYVIAI GEROVEI**

### **S a n t r a u k a**

Ilgainiui nauda, pasitenkinimas ir gerovė tiek mokslinėje, tiek visuomenės nuomonėje tapo simetriški turtui, konkrečiai – pajamoms. Ši situacija pateisino nevaržomą pasaulio ekonomikų siekį visuomenės gerovę maksimizuoti didėjančių gamybos apimčių (tuo pačiu ir pajamų) sąskaita, kas nulėmė vienių šalių dominavimą, o kitų skurdą.

Gerovės ekonomika aiškino objektyvią visuomenės gerovę, kuri gali būti siejama su materialiojo, pragyvenimui būtino paketo užtikrinimu. Nedidelė dalis mokslininkų kartu su laimės ekonomikos kūrėju R. Easterlin priešakyje, ekonomikos mokslui suteikė subjektyvumo į tyrimus įtraukdami jau senovės filosofų minėtą gerovės rezultatą – laimę. Tokiu

būdu atsirado laimės ekonomika, kuri iš esmės nagrinėja laimės ir pajamų sąryšį.

Pabrėžtina, kad nepaisant to, jog laimės ir pajamų sąryšis yra tirtas, konfrontuojantys rezultatai nulėmė vieningos nuomonės nebuvimą, atsakant į tokius probleminius klausimus: Ar turtingų tautų žmonės yra laimingesni nei neturtingų? Ar duotuoju laikotarpiu individai su aukštesnėmis pajamomis yra laimingesni nei tie, kurie turi žemesnes

pajamas? Ar didėjančios pajamos lemia didėjančią laimę?

Tai skatina tolimesnius tyrimus ir siekį pasitelkti kitus tyrimų metodus nagrinėjant pajamų ir subjektyvios gerovės vertinimo sąryšį.

Šio tyrimo objektas: pajamų įtaka subjektyviam laimės vertinimui. Tikslas: nustatyti kaip pavienėse ir kiekvienoje šalyje ekonominis pajamų veiksnys lemia subjektyvų laimės vertinimą Europos kontekste.