

Relationship between income, happiness, and life satisfaction: Evidence from Lithuania

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Abstract

For decades subjective well-being (SWB) has been receiving increasing attention from many perspectives, including health, personality traits, ageing, availability of social and medical services, and education. The research on the relation between happiness, life satisfaction, and income being the most popular. Many studies (e.g., Howell & Howell, 2008) support a wide spread opinion that income determines life satisfaction and happiness. However, there are many contradictions to this face value conclusion with rankings in the life satisfaction from high income countries (e.g., Denmark, Sweden) standing side by side with countries of much lower income (e.g., Mexico, Costa Rica) (Veenhoven, 2018). These data suggest an oversimplified understanding of the relationship between income and SWB that is misleading.

In order to understand these differences three important questions, need to be answered. Does SWB depend on absolute income allowing for basic needs to be met, or does it depend more on relative income (on how a person sees economic wellness in their particular social context)? Next, does an increase in income impact SWB all the way along its rising path or is there a satisfactory level of income (a satiation point) beyond which happiness stops to follow increasing income? Finally, is SWB determined more by general economic factors, such as income, or peculiarities of social relationships within a given society? Answers to these questions are of great

social importance, especially for countries dealing with low happiness, high suicide rates, and excessive emigration related to SWB; and are struggling to determine their priorities of social development. In this paper we study these factors in Lithuania, concluding that relative income is an important factor influencing SWB, but that other factors come into play once a satiation level of income is reached.

Keywords: Subjective well-being, happiness, life satisfaction, relative income, income satiation point

Introduction

The studies of SWB have long attracted the interest of psychologists, economists, and sociologists. It's no wonder: knowing the right answer could potentially lead to the Holy Grail revealing the right direction to national social policy. However, research has not yet provided a detailed understanding of the phenomenon of happiness, nor a clear understanding of the factors influencing it.

As yet, there is no clearly established definition of the subject of research of life satisfaction. The number of concepts such as well-being, life satisfaction, happiness, and subjective well-being are widely used in articles as synonyms. Diener, Suh, Lucas and Smith (1999), and Diener and Oishi (2000) defined well-being as a multidimensional construct of a person's reaction to one's life either in terms of cognitive evaluations (satisfaction), or in emotional reactions (affect). Life satisfaction is described as the subjective global evaluation of whether one is content, satisfied, and/or happy about one's life (Cheung & Lucas, 2015). Life satisfaction is viewed as an integral part of subjective well-being (Cheung, 2018). In research we distinguish two aspects of SWB, though consider them to be highly interrelated. Emotional well-being is considered to represent emotional quality of everyday experience, while life evaluation refers to cognitive evaluation of life quality. There is some evidence that these two aspects correlate differently to increase of income (Kahneman & Deaton, 2010). To make things even more complicated, different research uses different methods to assess emotional and cognitive aspects of SWB, and this might lead to contradictory conclusions when interpreting results.

In our study we operationalise life satisfaction as more cognitive evaluation of one's own life, while happiness addresses less consciously represented realm of emotional attitude towards the way one experiences life at a current moment. Both aspects were measured in our study by single question scales (see the Method section). The common concept underlying these two aspects, emotional and cognitive evaluations, we consider to be SWB.

Satisfaction, income, and social relations

Many researchers believe that people's life satisfaction should increase as their household income grows, because income predicts many additional factors that are expected to be associated with life satisfaction (such as better health care, a higher standard of living, and better housing). In addition, income allows more ways to become satisfied by providing opportunities for individuals to fulfill their desires (Cheung & Lucas, 2015).

Diener and Biswas-Diener (2002) suggest several major assumptions to explain the relationship between income and life satisfaction: a) income improves life satisfaction only insofar as it helps people to meet their basic needs; b) the interface of income and life satisfaction depends on the amount of material desires that people are allowed to fulfill; and c) societal norms for consumption are essential to understanding the relation between life satisfaction and income.

There is an obvious contradiction to the declared straightforward relationship between high income and SWB. High income countries such as Denmark (scoring 8.4 of 10), Sweden (7.8), or USA (7.3) stand side-by-side with countries of much lower income such as Mexico (8.3), Costa Rica (8.5) or Guatemala (7.2) in life satisfaction rankings (Veenhoven, 2018). Moreover, studies show that even the reverse relation between average national income and SWB is possible. The China Paradox could serve as an example, when SWB declined considerably in contrast to China's objective economic growth in 1990-2000. Life satisfaction fell in both urban and rural China in every income group (Brockmann, Delhey, Welzel & Yuan, 2009). These findings question the universality of the link between income and happiness and suggest the importance of other factors such as national peculiarities of wealth distribution or psychological factors such as social support, inclusion, or anomie (a condition of instability resulting

from a breakdown of standards and values or from a lack of purpose or ideals) that might even be stronger factors influencing SWB in a particular nation. The answers might lead to a completely different realm from personal income, such as the quality of personal social relations. Vaillant's (2002) main conclusion of a 75-year longitudinal study of adult development is that "warmth of relationships throughout life has the greatest positive impact on life satisfaction." If so, SWB research in nations should seriously shift from researching economic factors to peculiarities of social psychology in different countries.

Income satiation point

What happens to the relationship between income and SWB when the level of income needed to meet all basic needs is reached? Is there a satiation point at which increased income does not increase SWB? Kahneman and Daeton (2010) found that life evaluation did not satiate, whereas affective well-being satiated at \$75,000. A study by Jebb, Tay, Diener and Oishi (2018) using data from a Gallup World Poll, a representative sample of over 1.7 million individuals from 164 countries worldwide, supports the finding that income is related to happiness. However, it also states that there is a certain income satiation point beyond which happiness stops following the increasing income. Globally they found that satiation point for life evaluation occurred at approximately \$95,000 of yearly household equalised income. For positive emotions, satiation occurred at a lower level of income, \$60,000, and for negative emotions at \$75,000. Measurement of yearly income was done for comparison reasons in International Dollars using the World Bank's private purchasing power parity ratios. The study also found significant differences across different countries and world regions. What accounts for these differences? What factors influence SWB after the satiation point is reached? The authors do not provide answers, but rather imply the necessity for further in-depth studies.

Absolute income versus relative income

In order to further explore the association between life satisfaction and income, we have to consider two different concepts: absolute income and relative income. According to Cheung and Lucas (2016), absolute income refers to the idea that money can buy things that lead to life satisfaction. Past research showed that household income is positively associated with life satisfaction (Blanchflower & Oswald, 2004;

Clark, Frijters & Shields, 2008; Diener & Biswas-Diener, 2002; Diener, Ng, Harter & Arora, 2010; Kahneman & Deaton, 2010; Luhmann, Schimmack & Eid, 2011).

But is your ability to buy and consume goods that satisfy your essential needs sufficient to feel satisfied? The link between plentiful resources and satisfaction may be true for most animal species. However, widespread assumption that absolute income level is the primary determinant of individual life satisfaction of humans does not appear to be well-supported. Recent empirical findings confirm that a person's life satisfaction not only depends on absolute income but also on a large degree of how it appears in context of the incomes of others in society. According to Dumludag (2013), relative income refers to the idea that comparisons with others play an important role in evaluating and constructing social reality. People compare their income with a reference group, and therefore an increase in the income of that reference group but to a lesser extent of their own is likely to have a negative effect on an individual's life satisfaction. According to Schneider (2016), relative income provides one of the standards by which people evaluating their own income position place themselves in a social hierarchy. Researchers find relative income to influence life satisfaction even more strongly than absolute levels of income (Cheung & Lucas, 2016; Dumludag, 2013; Easterlin, 1995; 2001; Knight, Song & Gunatilaka, 2007; Mayraz, Wagner & Schupp, 2009; Solnick & Hemenway, 1998). In other words, if person A lives in a poor country and earns more than average it will make them happier than person B who lives in a developed country and earns double but is poor in comparison to the people around them. It brings us back to the Easterlin paradox. According to Easterlin (1974), a society's average happiness is a constant even if per capita incomes increase. This is because one's income compared to fellow citizens does not improve. To put simply, if I buy a used Fiat and my neighbour buys used Cadillac, it makes me just as unhappy as when a few years later I buy a new Ford and my neighbour buys a new Bentley.

Income change and effect

Income may play a different role for people at different stages in their lives. The recent longitudinal studies showed that the income change can lead to changes in life satisfaction. For example, Schyns (2001) examined the relationship between income change and life satisfaction in Russia and found that positive change in income caused an increase in life satisfaction for a period greater than one year. But, as soon

as people adjust to their higher income, the effect vanished. Similarly, Luhmann et al. (2011) tested the within-person effect using two large samples from Britain and Germany. They found that, controlling for the between-person effect of income, within-person income change was positively associated with SWB. Additionally, Gardner & Oswald (2001) found an increase in SWB among British respondents whose financial resources had changed due to winning a lottery or inheritance. However, some studies suggest that the effect of income change might be stronger in poorer nations. Diener and Oishi (2000) reported that for poorer nations with high economic growth there is a clear increase in SWB following the increase of income.

To summarise, research on the within-person association between income and life satisfaction has revealed mixed findings: positive change in income can cause an increase in life satisfaction, but the effect is more evident in poorer nations. In addition, according to adaptation theory, life satisfaction increases temporarily with an increase in income, but over time people adjust to their higher income such that their life satisfaction reverts back towards its original level.

Research from Lithuania

Recently, more and more attention is being paid to life quality issues in Lithuania. The relevance of these issues is related to high suicide rates, record emigration, and low SWB. Although Lithuania's economy is one of the fastest growing in EU, it is still among the countries with lowest scores on happiness and life satisfaction. A pilot study by Chomentauskas and others (2008, 2009) found a relationship between SWB and anomie, hopelessness, and other factors, but they did not research the relationship between SWB and income. In recent studies, Rakauskienė and Servetkiene (2017), relying on their research data, have claimed that the feeling of happiness in Lithuania diminished from 2004 to 2016 despite the average income having increased. The authors see the explanation in the increasing inequality of income in the country. The decile dispersion ratio of income differentiation, which presents the ratio of the average income of the richest 10 percent of the population to the average income of the poorest 10 percent, increased from 10.3 in 2007 to 10.7 in 2014 (the EU average is 8.5). Diržytė (2017) investigated the relationship between household income and life satisfaction in Lithuania. In their study, groups belonging to different quintiles of income were compared for differences in their life satisfaction. People belonging to the

lower quintile according to their household income reported statistically significant less positive emotions and less positive cognition. Moreover, analyses demonstrated that people with higher household income report higher happiness and higher overall life satisfaction. These results are in line with the findings about the relationship between income and life satisfaction. However, the method of analysis that compares differences between low and high income groups does not support the hypothesis that within them satisfaction is determined by the same factors such as differences in income. In other words, it is not clear whether increase in income impacts satisfaction the same way in small and big income groups. In the latter study no satiation point was revealed.

Summarising, despite Lithuania's record high suicide rate and rates of emigration and low life satisfaction, it appears to be an attractive object for researchers looking deeper into the essence of a little-studied psychological and social phenomenon. In this work, we, the research team at Human Study Center in Vilnius, continue to look deeper into causes of happiness and SWB. In this research we aim to understand the relationship of income and SWB in Lithuania.

Our research goals are: a) whether there is a correlation between household disposable monthly income per capita (monthly household equalised income) and SWB; b) Is there a correlation between SWB and household disposable monthly income per capita in different income groups; and c) Does the possible income satiation point beyond which the correlation between income and SWB exist?

Method

This research was done using data from our long-term study in the timeframe of 2008 – 2017; aiming to monitor social and emotional status of Lithuania. In this paper we describe part of the data related to SWB and income.

Sample

The present study was conducted on a sample of 3,199 Lithuanian people (42.70% male, 57.30% female) between 2015 to 2017. Participant ages ranged from 15 to 92 years ($M = 44.95$, $SD = 18.343$). Research participants were interviewed individually, face-to-face and were asked structured questions as a part of national survey

conducted by a survey company (Baltijos Tyrimai). The sample is representative of the Lithuanian population and details are provided in Table 1.

Table 1
Demographic characteristics of the Lithuanian sample (N = 3,199)

Variables	%	Mean	SD	Min.	Max.
Year of study					
2015 (0)	32.40				
2016 (1)	33.00				
2017 (2)	34.60				
Happiness		2.69	0.65	1.00	4.00
Life satisfaction		2.63	0.70	1.00	4.00
Individual income (Household disposable monthly income per capita in euros after all taxes)					
< = €250 (0)	35.60				
€251 – 450 (1)	45.90				
€451 – 500 (2)	7.80				
€501 – 650 (3)	6.40				
> €650 (4)	4.30				
Gender					
Female (0)	57.30				
Male (1)	42.70				
Age					
		44.95	18.34	15.00	92.00
15 – 19 (0)	12.30				
20 – 29 (1)	12.80				
30 – 39 (2)	14.60				
40 – 49 (3)	16.60				
50 – 59 (4)	17.70				
60 – 92 (5)	25.90				

Measures

The following measures were used in our study.

Happiness

In this study, we used a single question scale O-HL-u-sq-v-4-a from the World Database of Happiness (WDH) to measure self-reported happiness. In this study, respondents are asked, “*Taking all things together, would you say you are ...?*” They are asked to make a choice out of four possible answers: a) ‘*Not at all happy*’, b) ‘*Not very happy*’, c) ‘*Quite happy*’, or d) ‘*Very happy*’. Happiness is rated by respondents on a 4-step rating scale. In the WDH a set of one question and all admissible responses to that question are referred to as a “*measure of happiness*” (Veenhoven, 2005; 2009; 2010).

Life satisfaction

We used a single question scale (O-SLL-u-sq-v-4-b) from the WDH to measure individual evaluation of life satisfaction. The main life evaluation question asked in this study is “*On the whole, how satisfied are you with the life you lead?*” (Veenhoven, 2005; 2009; 2010). Respondents are requested to make a choice out of four possible answers on a 4-step rating scale: a) ‘*Not at all satisfied*’; b) ‘*Not very satisfied*’; c) ‘*Fairly satisfied*’; or d) ‘*Very satisfied*’.

Individual income

We define the term Individual Income as household disposable monthly income per capita. In the study, respondents were asked to specify the total household income and the number of family members. To get Individual Income, total household income was divided by household size (adult = 1 unit, and child = 1 unit).

Results

The aim of this study is to find out how income is related to happiness and life satisfaction. After excluding all missing answers to questions, we analysed the results in two steps. First, we tested a relation between individual income and happiness, as well as a relation between individual absolute income and life satisfaction in the whole sample. Secondly, we tested whether there is a satiation point in individual absolute

income after which the correlation between income and happiness, either income and life satisfaction does no longer exist. For this reason, we split the sample into five groups (for grouping details see Table 3) according to their income and performed a correlation analysis between SWB and income in each of them separately.

The Pearson Correlation Analysis was used in the first two steps and the results are given in Table 2.

Table 2
Pearson correlations between happiness, life satisfaction, and income (N = 3,199)

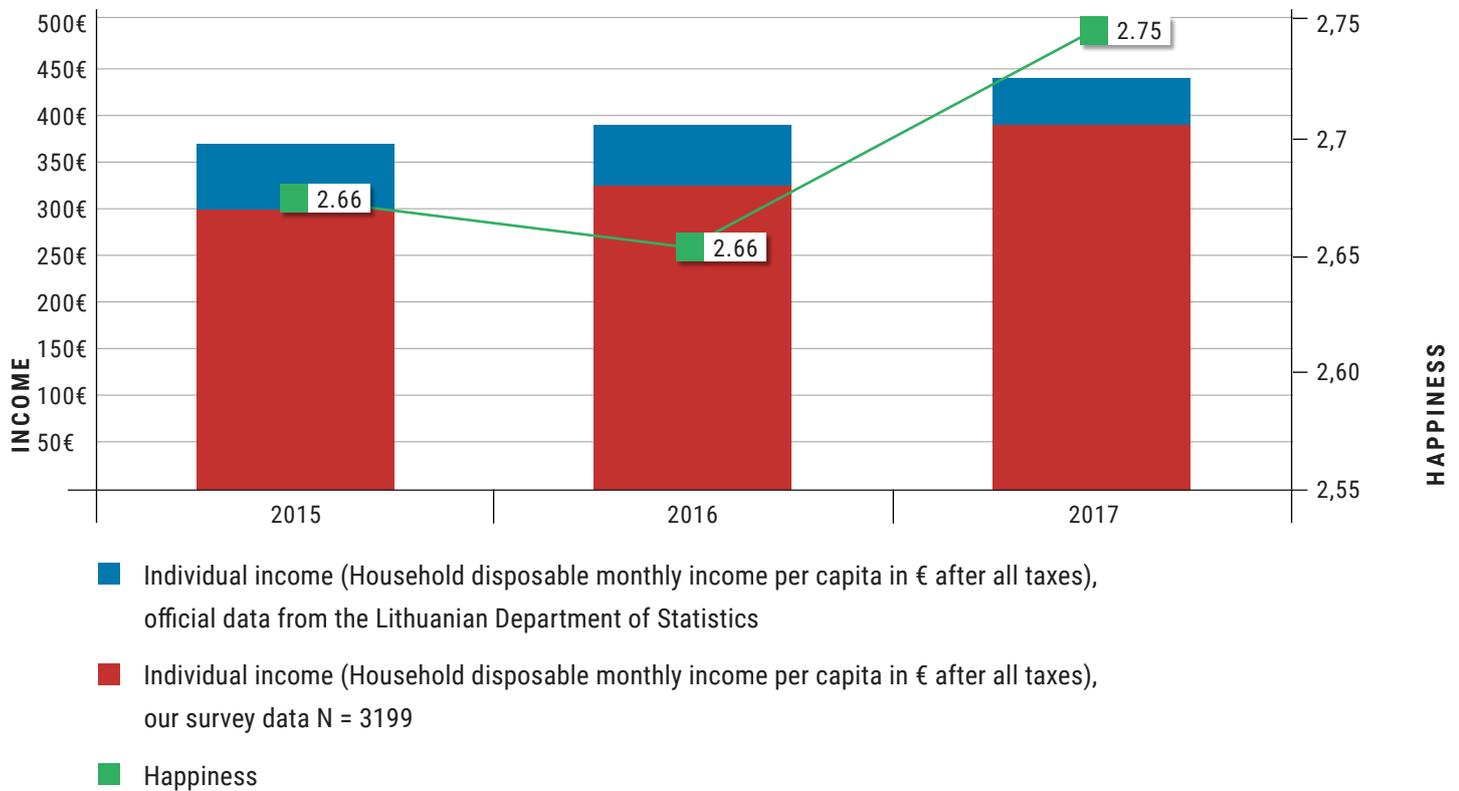
Individual's income per month (€ net)	Year of study		
	2015	2016	2017
Happiness	0.191***	0.253***	0.157***
Life satisfaction	0.223***	0.230***	0.172***

Note: Significance level: *** < 0.001

Analyses showed a significant positive relationship between happiness and individual income during the period from 2015 to 2017 (the correlation coefficient is between 0.157 and 0.253, $p < 0.001$). Likewise, we find a significant positive relationship between life satisfaction and individual income (the correlation coefficient is between 0.172 and 0.230). Therefore, we generally support the wide spread assumption that an income increase is associated with an increase in happiness and life satisfaction (see Table 2).

Figure 1 illustrates trends in happiness, life satisfaction, and income visually. Trends illustrate a positive relation between income level and happiness. The graph shows a slight difference between official individual income per month in Lithuania according to official statistics and individual income reported by the respondents during the period from 2015 to 2017. The average individual income per month in Lithuania has been increasing both in official data and according to our survey: officially in 2015 it was €375.90 per month (€291.68 reported in this study), in 2016 – €408.40 per month (€317.00 reported in this study), and in 2017 – €441.10 per month (€389.15 reported in this study).

Figure 1
Trends in individual income per month and happiness in Lithuania, 2015-2017



However, stating that there is a significant positive relationship between happiness and individual income does not exclude the possibility that after reaching some point in income, the level of happiness and life satisfaction no longer relates to an income level. In other words, it reaches a certain satiation level. To test this supposition, it was necessary to evaluate how income affects happiness and life satisfaction of people belonging to different income groups. For this purpose, we split the sample into five different groups depending on their income (for grouping details see Table 3 below). Group analyses showed a significant positive weak relationship between happiness and income (the correlation coefficient is between 0.120 and 0.126, $p < 0.01$), but only for the two lowest income groups: when the individual absolute income was up to €450. When the individual income increases to more than €450, the relationship between happiness and income is no longer statistically significant (see Table 3).

Table 3
Pearson correlations between happiness and income ranges (N = 3,199)

	Individual income per month (€ net)				
	< = €250	€251 – 450	€451 – 500	€501 – 650	> €650
Happiness	0.120**	0.126**	-0.02	-0.08	0.07

Note: Significance level: ** p < 0.01

Likewise, we find a significant positive weak relationship between life satisfaction and income (the correlation coefficient is between 0.100 and 0.105), but only when the individual absolute income is up to €450. When the individual income increases to more than €450, the relationship between life satisfaction and income is no longer significant (see Table 4). Therefore, an increase of income up to a certain factor is no longer associated with a significant increase in life satisfaction and happiness.

Table 4
Pearson correlations between life satisfaction and income ranges (N = 3,199)

	Individual income per month (€ net)				
	< = €250	€251 – 450	€451 – 500	€501 – 650	> €650
Life satisfaction	0.100**	0.105**	-0.05	-0.04	0.16

Note: Significance level: ** p < 0.01

In short, our findings show a significant positive relationship between happiness and individual income. Higher SWB is related to income appears to be true as a general statement. However, this relationship is different in different income groups. We found, that income is significant factor impacting SWB in lower (<€250) and up to average income (€251 – 450) groups. When income gets above hypothetical satiation point, that is in our case close to national average income (>€451), it stops to be a significant factor of happiness and life satisfaction.

Discussion

There are three domineering thought paradigms in SWB income relationship research. Many studies on happiness and life satisfaction believe that life satisfaction should

increase as income grows, because income predicts many additional factors, such as better health or a higher standard of living (Blanchflower & Oswald, 2004; Diener, Biswas–Clark, Frijters & Shields, 2008; Diener & Biswas–Diener, 2002; Diener et al., 2010; Luhmann et al., 2011). The second paradigm claims that income influences SWB as long as a certain satiation point is reached beyond which increasing income does not add to SWB (Kahneman & Deaton, 2010; Jebb et al., 2018). And the third paradigm, placing roots in the Easterling Paradox (1974), which stresses importance of relative income and refers to the idea that comparisons with others, plays an important role in evaluating and constructing social reality and thus determines SWB. People compare their income with a reference group and therefore an increase in the income of the reference group but to a lesser extent of their own is likely to have a negative effect on individual life satisfaction and vice versa (Dumludag, 2013; Schneider, 2016).

The results of our study show that all three might be true. Our study of the representative sample of the Lithuanian population shows a statistically significant relationship between happiness, life satisfaction, and individual income (household disposable monthly income per capita) when the whole sample is considered to be homogeneous and is analysed as such. However, when the sample is split into five groups according to household income per capita, it appears that a positive relationship between happiness and income exists only in individual income up to a certain point: in the case of Lithuania it was €450 of monthly household disposable income per capita. When the income increases to more than €450, the relationship between happiness and income is no longer statistically significant. Likewise, we found a positive relationship between life satisfaction and income, but only when income is up to €450, but when the income increases to more than €450, the relationship between life satisfaction and income no longer exists. These results are in line with the concept of satiation, beyond which the relationship between income and SWB is broken.

However, the results are also in accordance with the idea that happiness depends not only on the absolute value of income, but to a larger extent it depends on how income relates to the income of other people in a given social context, is higher or lower than the average of social context. Our study allows us to assume that happiness is related to income when it is below average, but once it gets above the average point the

relationship is lost. The results and design of the study do not allow us to specifically discriminate which of the factors, income satiation point or the relationship between individual income and average income of social context, are the determining factors, as average income and income satiation point fall into the same income value; that is around €450.

It is worth mentioning that the determined satiation point is very low, just €5,400 household disposable yearly income per capita, or converted to international dollar using parity purchasing power index that in 2017 according to OECD (2018) was 0.461, equal to 11,714 International Dollar household disposable yearly income per capita. This is several times lower than results obtained by the research of Jebb et al., (2018), where the life satisfaction satiation point was found at 45,000 International Dollar, and positive affect satiation point was at 35,000 International Dollar for Eastern Europe and the Balkans. Though differences may partially arise as a result of different methods used for household disposable yearly income per capita estimation and methods for statistical analysis, they cannot explain the significant differences between the results obtained.

Putting this incongruence aside, the fundamental questions concerning income and the SWB relationship still remain. What determines satiation point and why is it so different in different countries? Is it determined by average income in a given social context or factual purchasing power that allow individual to gratify his most important needs? Does the SWB and income relationship dependence on dominant societal values show its highest power in materialistic cultures and subdues in other cultures? Or is the SWB income relationship determined by a unique set of social and cultural circumstances and values in each country? Answers to these questions are complicated and are still to be clarified as they require appropriate multifactor and multinational research designs. From the results of our study we can raise this hypothesis: the satiation point is likely to be linked to average income in a social context, and the factors beyond the satiation point might refer to other than economic factors. A research group from Human Study Center intends to analyse these factors further.

Conclusions and practical applications

These findings suggest applications for both policy makers and employers. By following the currently domineering concept “higher income = higher SWB” in social politics and organization management, decision-makers may be statistically right. However, such overly simplified view is missing the point. Income relates to SWB only to a certain level until it reaches two goals: a) secures satisfaction of main individual needs and; b) is around the average income of other people in that social context thus allowing a person to feel equal and belonging to that social group. We think, that achievement of these goals creates the necessary base for SWB by allowing people feel comfortable enough both physically and socially. Once income gets above this point it stops to be a SWB related factor and the domain of SWB becomes related to other more complicated social and psychological factors.

What is said, makes the income satiation point quite an important concept from the perspective of applied psychology. Can we determine this income satiation level in numbers? If we can do research in every country, or every social group of interest, the answer is yes. By simplifying we can even approximate that the numbers might be around average income at a time in a given social context. But, once we start looking for a universal “magical number”, that fits every country or social group within it, the answer is no. Numbers might substantially vary in different countries and with social and/or professional groups, depending on many factors (such as average income, parity of purchasing power with different currencies, wealth distribution, dominant social values).

Translating scientific research results to actions is always complicated and ambiguous as real life presents a vast number of factors not considered in any individual study. Nevertheless, we see three main practical implications from our research to be considered by both policy makers and employers:

- We can expect that income increase in lower income up to average income groups will increase their SWB;
- Factors other than financial factors impact individual SWB once income reaches the satiation point;

- It is worth considering increasing minimum wages and seeking more even income distribution among people by salary policies, tax and compensatory mechanisms. This would help to avoid a negative impact of obvious financial inequality on SWB in a social context and/or society.

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