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2014

Online at <https://mpra.ub.uni-muenchen.de/58587/>

MPRA Paper No. 58587, posted 19 Sep 2014 16:06 UTC

INCORPORATING QUALITATIVE INDICATORS OF WELL – BEING INTO QUANTITATIVE ECONOMIC RESEARCH

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ABSTRACT

The paper discusses common approaches to quality of life and human well – being issues. It provides a literature overview of most recent concepts in this field. The idea of Bhutan’s Gross National Happiness Index has been opposed to the most popular measure of human life quality – the Gross Domestic Product. Moreover, it aims at attiring the attention of economists to the need for enlarging their quantitative research instrumentarium by qualitative indicators. Finally, the authors propose their own index, that incorporates both qualitative and quantitative drivers of well – being into one aggregated measure.

Key Words: Human Life Quality, Determinants of Well – Being, Qualitative & Quantitative Research. JEL: I31, F68, C45

INTRODUCTION

For most of the time, economics as a science focused only on hard measures, formulating graphs and models of quantitative nature. Classical economics assumes that individuals behave rationally, that they know what they want and how to get it, and thus make rational decisions. The assumption is they derive pleasure mainly from consumption so in theory the higher income the better. This vision, however, has been questioned by new, emerging fields of economics that advocate more multidisciplinary approach namely behavioral economics and economics of happiness. Helliwell, Layard & Sachs (2013) observe that “*We increasingly understand that we need a very different model of humanity, one in which we are a complicated interplay of emotions and rational thought, unconscious and conscious decision-making, “fast” and “slow” thinking*” (p. 5).

Happiness studies are highly controversial, having many opponents but a growing number of supporters as more and more researchers, policymakers and ordinary people agree that happiness should be a factor in determining a country’s wealth. Nevertheless, the tendency to equate income with well - being is deeply rooted in our society, which can be read in Pigou’s (1932) words: “*There is a clear perception that changes in economic welfare indicate changes in social welfare in the same direction, if not in the same degree*” (p. 3). This widespread belief is especially misleading when it comes to high – income nations where living standards are above basic material needs. Graham (2009) states that “*The economics of happiness does not purport to replace income - based measures of welfare but instead to complement them with broader measures of well – being*” (p. 8).

At the same time, the modern science of economics demands and requires measures and models that can be subject to comparisons, empirical verification and ease of application. For these reasons the authors of the present paper saw the need for an indicator that could include qualitative determinants of happiness and well - being into existing qualitative research, but at the same time still be conform to existing scientific standards.

1. GROSS DOMESTIC PRODUCT AND WELL – BEING

Over past 80 years growth of Gross Domestic Product has become synonymous with growth of national welfare. However, the limitations and shortcomings that were mentioned before clearly show that GDP should not be used as a yardstick of society’s well - being. Costanza, Hart, Posner & Talberth (2009) say that *“Economists have warned since its introduction that GDP is a specialized tool, and treating it as an indicator of general well - being is inaccurate and dangerous”* (p. 8). Helliwell, Layard & Sachs (2013) see GDP and GNP as *“a valuable goal, but should not be pursued to the point where economic stability is jeopardized, community cohesion is destroyed, the vulnerable are not supported, ethical standards are sacrificed, or the World’s climate is put at risk”* (p. 9).

Fortunately, due to new emerging fields of science such as economics of happiness, more and more people including policymakers are aware of the need to go beyond GDP. Already the creator of GDP index, Kuznets (1934), stated that *“The valuable capacity of the human mind to simplify a complex situation in a compact characterization becomes dangerous when not controlled in terms of definitely stated criteria. Measurements of national income are subject to this type of illusion and resulting abuse, especially since they deal with matters that are the center of conflict of opposing social groups where the effectiveness of an argument is often contingent upon oversimplification”* (p. 5 – 6).

Happiness research shows that there are other factors that matter at least as much as income. GDP does not capture them, and therefore its picture of well - being is distorted. Fig. 1 shows that economy and well - being are much more complicated issues. Costanza, Hart, Posner & Talberth (2009) support that thesis by saying that *“By measuring only marketed economic activity, GDP ignores changes in the natural, social, and human components of community capital on which the community relies for continued existence and well - being. As a result, GDP not only fails to measure key aspects of quality of life; in many ways, it encourages activities that are counter to long-term community well - being”* (p. 9).

Figure 1: Economy as part of a larger system

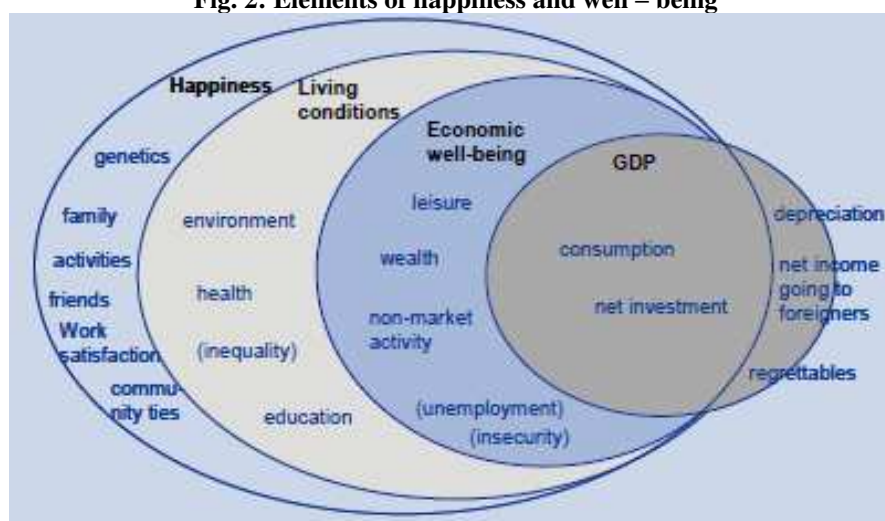


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Source: Costanza, R., Hart, M., Posner, S., Talberth, J. (2009, p. 8).

Among many factors contributing to the happiness of individuals, it is the income that has been studied the most. The assumption of the classical economic theory is rather straightforward – happiness increases along with the increase in income. This ‘money buys happiness’ approach is in fact misleading as the relationship between income and happiness is much more complex. Easterlin (1974) discusses this issue extensively and abolishes empirically this simplification (Easterlin Paradox). Easterlin’s findings have been proved by many other researchers, i.e. di Tella, MacCulloch & Oswald, Graham, Frey & Stutzer, Veenhoven and others. Bergheim (2006) points at the fact that human well – being is a complex issue, composed of many elements of qualitative and quantitative nature. Fig. 2 shows this fact in a compact, graphical way.

Fig. 2: Elements of happiness and well – being



Source: Bergheim, S. (2006, p. 3).

First chapter’s conclusion can be summarized in two sentences. Firstly, Gross Domestic Product is far from being a good measure of the overall well - being but is commonly understood and used as one. Secondly, the relation between income and happiness is a rather complicated one and, at the same time, counterintuitive. The authors believe that the first step to stop the misuse of GDP is to make the researchers aware of limitations of standard economic indicators and eventually replace them (or back them up) with more precise indexes. Following chapters aim at being a step towards this goal.

2. GROSS NATIONAL HAPPINESS VS GDP / GNP

A pioneer in applying the enhanced theory of well – being into national policy – making is Bhutan. In the beginning of the 1970s, it introduced the concept of Gross National Happiness and made it the leading measure of well – being of Bhutanese citizens. Ura, Alkire, Zangmo, & Wangdi (2012) define it by stating that “*Gross National Happiness (GNH) measures the quality of a country in more holistic way [than GNP] and believes that the beneficial development of human society takes place when material and spiritual development occurs side by side to complement and reinforce each other*” (p. 7). The supremacy of the GNH over GNP has been enforced by Bhutan’s constitution (2008): “*The State shall strive to promote those conditions that will enable the pursuit of Gross National Happiness*” (Article 9, §2, p. 18). The concept is more than just a guideline or an inspiration, it is used to define public policy. The officials’ aim is that every major decision in this little Himalayan kingdom contribute to the growth of GNH. Table 1 shows the composition of the GNH Index, where 33 indicators have been divided into 9 groups:

Table 1: Overview of GNH domains and indicators

	Domain	Number of Indicators
1	Psychological wellbeing	4
2	Health	4
3	Time use	2
4	Education	4
5	Cultural diversity & resilience	4
6	Good Governance	4
7	Community vitality	4
8	Ecological diversity & resilience	4
9	Living standards	3
	Total	33

Source: Ura, K., Alkire, S., Zangmo, T., Wangdi, K. (2012, p. 22).

The weight attributed to each group is the same as each group is believed to be equally important for happiness. However, particular variables inside each group differ in terms of weight with highly subjective ones given lower importance (shown in Table 2):

Table 2: Weights on the 33 GNH indicators

Domain	Indicators	Weight	Domain	Indicators	Weight
Psychological Well - Being	Life satisfaction	33%	Time Use	Work	50%
	Positive emotions	17%		Sleep	50%
	Negative emotions	17%	Good Governance	Political participation	40%
	Spirituality	33%		Services	40%
Health	Self - reported health	10%		Government performance	10%
	Healthy days	30%	Fundamental rights	10%	
	Disability	30%	Community Vitality	Donation (time & money)	30%
	Mental health	30%		Safety	30%
Education	Literacy	30%		Community relationship	20%
	Schooling	30%	Family	20%	
	Knowledge	20%	Ecological Diversity & Resilience	Wildlife damage	40%
	Value	20%		Urban issues	40%
Cultural Diversity & Resilience	Zorig Chusum skills (Thirteen arts & crafts)	30%		Responsibility towards environment	10%
	Cultural participation	30%	Ecological issues	10%	
	Speak native language	20%	Living Standard	Per capita income	33%
	Driglam Namzha (Etiquette)	20%		Assets	33%
		Housing		33%	

Source: Ura, K., Alkire, S., Zangmo, T., Wangdi, K. (2012, p. 26).

To understand the composition of Gross National Happiness Index one has to look into each of its nine dimensions. Ura, Alkire, Zangmo & Wangdi (2012) describe them in the following way:

- **Psychological Well - Being** – includes life satisfaction with respect to health, standard of living, occupation and family relationship, expressing positive emotions such as compassion or generosity as well as negative ones such as jealousy or anger. Spirituality is also included by asking such questions as: *Do you consider Karma in the course of your daily life? or How often do you meditate?*
- **Health** – describes health condition of the population. It includes self – reported health (*In general, would you say your health is...*), number of healthy days within the last month, long term disability and its effects on daily activities, as well as mental health (conditions such as depression or anxiety).

- **Education** – education in Bhutan serves not only the purpose to educate Bhutanese citizens but also to instill in them a sense of common values, their cultivation and transmission. It includes literacy, educational qualification and knowledge with questions ranging from *How would you rate your knowledge on how HIV/AIDS is transmitted?* to *How would you rate your knowledge and understanding of local legend and folk stories?* Values are also included, for example *Is lying justifiable?*

- **Culture** – Bhutan has long maintained a policy of cultural isolationism in order to protect itself from foreign influences. Until recently there was a restriction on the number of tourists allowed to enter the country. Preservation of the unique culture is one of the main goals of the Bhutanese government. Measurement of this dimension includes language (*How well can you speak your mother tongue, now?*), artisan skills (*assesses people's interest and knowledge in thirteen arts and crafts, collectively known as Zorig Chusum*), socio - cultural participation and *Driglam Namzha* – the Way of Harmony which refers to expected behavior (of consuming, clothing, moving) especially at formal occasions and in formal spaces.

- **Time Use** – this dimension measures mainly the balance of work and leisure. Emphasis is put on the free - time of Bhutanese citizens as it is thought to be very important for the overall happiness. What is interesting, there is a distinction made between paid and unpaid works such as childcare or voluntary works. Sleeping hours are also captured.

- **Good Governance** – includes political participation, political freedom (i.e. *Do you feel that you have a right to the freedom of speech and opinion?*), service delivery that captures for instance distance from the nearest health care center and government performance (i.e. *Rate the performance of government in creating jobs...; in reducing gap between rich and poor...; in fighting corruption...*)

- **Community Vitality** – concentrates on the social capital: social support, community relationships (i.e. *How much do you trust your neighbors?*), family (i.e. *Do the members of your family care about each other?; Do you feel like a stranger in your family?*) and crime indicator.

- **Ecological Diversity and Resilience** – the environment has always played a very important role in the lives of the Bhutanese people. Citizens are asked about pollution, their attitudes towards environmental responsibility, wildlife and urban issues such as, for example, inadequate green spaces.

- **Living Standards** – concentrates on material well - being and includes individual and household income, assets (appliances such as mobile phones, television or personal computers, livestock ownership and land ownership) and housing quality (pp. 116 – 119).

In today's World still suffering from global financial crisis, growing income gap and tremendous inequalities, more and more Westerners are beginning to redefine their understanding of well – being. Therefore Bhutan's approach is attracting more and more interest. Thottam (2012) states that "*Bhutan's happiness experiment has captured the fancy of economists and politicians from Brazil to Britain, Tokyo to Taiwan, who are looking for a new path to free-market prosperity - one that doesn't do so much damage to the environment, social equity and family life*" (p. 2). Between Western countries that are testing various options of implementing indexes similar to GNH into their home policies are *inter alia* Canada, China, France, Great Britain and USA.

The question arises, whether it is possible to use the Gross National Happiness as a direct substitute for GDP (or GNP)? The answer is not a simple one. First of all, the concept of the Bhutanese index lies in its history and culture. The survey includes questions related to such issues as *Karma, Tshogpa, Tshechus* or the knowledge of traditional songs and legends which are in most cases incomprehensible outside Bhutan. Each of the nine dimensions was designed to suit Bhutanese values and principles perceived as necessary components of a happy life. Moreover, Bhutan's indicator defines happiness differently than Western civilizations.

Therefore, due to cultural differences, GNH cannot be directly incorporated into measurement of other countries' and cultures' well – being. Another issue is the subjectivity – the GNH index is based on periodic surveys. It might not be reasonable to conduct policy relying only on people's subjective judgments. What is more, while GDP and GNP have many disadvantages, their great strength is the possibility of comparison over space and time. With the GNH international comparison of a nation's well – being would be difficult. Moreover, such purely subjective indicators might be more prone to biases as governments might define the surveys and their results for their own benefit. Finally, besides measuring happiness, researchers have to be able to interpret the results and use them to improve the policy – making. Therefore there is a need for an indicator, that would connect subjective and objective drivers of happiness, as well as best features of GDP and GNH in one aggregated index.

3. AGGREGATED HAPPINESS INDEX PROPOSAL

When searching for an aggregated index of happiness no conscious researcher would omit the role of income and income – related factors that are measured by GDP and GNP indexes. Nevertheless, as this issue has been extensively discussed in economic literature, the authors decide to focus further on other measures of human well – being, dividing them into subjective and objective ones.

In UN World Happiness Report 2013 Helliwell, Layard & Sachs propose such measures of subjective well – being as Social Capital & Trust, Governance & Freedom, Mental Health, Family & Marriage or Loving & Being Loved (pp. 69 – 79). Although for the purposes of evaluation of happiness in Western cultures this set could be easily enlarged by most of the components of GNH, the subjectivity of assessment makes this group of indicators less interesting for the purposes of presented research. The authors prefer to search for their own Aggregated Happiness Index (AHI) instead.

Out of many determinants of well – being presented before, are there any that could be seen as objective ones? The authors believe that at least four can be distinguished: Health, Unemployment, Income and Inequality. Different studies, i.e. Graham's (2005) have shown a high correlation between happiness and these four factors. As Graham's (2009) understanding of particular determinants sometimes varies from this of GNH creators, each of them has been shortly described below:

- **Health** – people evaluate good health as one of the most important aspects of their lives. Good health is linked to higher levels of happiness, and health shocks – such as serious diseases or permanent disabilities – have negative and often lasting effects on happiness. At the same time, a number of studies find that happier people are healthier. Causality seems to run in both directions. It is important to notice that emotional health is as important as physical. There are different ways to evaluate health but the most popular objective ones include life expectancy at birth and infant mortality (under 5);

- **Unemployment** – Helliwell, Layard, & Sachs (2013) find out that there is no doubt that unemployment reduces happiness significantly. When people become unemployed they experience sharp falls in well – being and their well – being remains at this lower level until they are re-employed (p. 66). Graham (2009) continues by saying that it is important to remember that losing job does not only mean lost income as many economists would assume, it means much more to an individual and is often compared to break – up of marriage. It is connected with the feeling of needlessness, loss of social status and crash of self – esteem. It also affects family of the unemployed. Long – term unemployment (over 12 months) has particularly negative economic and social effects.

- **Income** – research shows that there is a correlation between subjective social welfare and income, but only to a certain point. It is crucial to understand income as something more than a measure of economic activity. Stiglitz, Sen & Fitoussi (2009) say that in order to measure individuals' well – being, there is a need for certain adjustments of the GDP. One of the most comprehensive concepts of measuring income by far is so called household net – adjusted disposable income. Typically, we subtract taxes to obtain a measure of disposable income of a household. Individuals do not directly get enjoyment out of the taxes they pay, but they do benefit from the services that government provides, and that is why it is important to add back the correct value of public services. The cited researches underline that a few other adjustments are required to be taken into account, namely intermediate goods, security, defensive expenditures, leisure, nonmarket activity and depreciation, resource depletion, and the degradation of environment. The first three adjustments (combined with others) give us a measure that is sometimes referred to as adjusted disposable income (p. 35).

- **Inequality** – income inequalities have risen substantially over the past years which causes serious economic and social effects. Scholars have shown that there is a way of reducing income inequality and improving economic efficiency at the same time. There is no tradeoff between equity and efficiency as it was previously believed. But does inequality affect our subjective well – being? Different studies reveal that a link exists. Empirical evidence shown by Gini index measurements show that in more unequal societies individuals feel less satisfied with their lives. Moreover, inequality matters as people have a tendency to compare their well – being and the well – being of others which greatly affects life satisfaction (pp. 151 – 155).

The proposed Aggregated Happiness Index (AHI) is a simple, but meaningful average of four equally weighted objective indicators (income, health, employment and inequality), that are composed of one or two

sub – indicators. Each sub – indicator is an average measure of a given issue in relation to its superior indicator. In consequence the total number of variables equals six. The components of our index are listed below:

- Income indicator:
 - Household net – adjusted disposable income (reference year: 2010);
- Employment indicator:
 - Employment rate (reference year: 2011, with the exception of Brazil – 2009);
 - Long term unemployment (reference year: 2011);
- Health indicator:
 - Life expectancy at birth (reference year: 2011 with the exception of Turkey, Mexico – 2012 and Canada – 2009);
 - Infant mortality (reference year: 2009);
- Inequality indicator:
 - Gini Index (reference year: 2009 with the exception of Australia, New Zealand, USA – 2010).

As ease of application was one of authors' main concerns, the computation of Aggregated Happiness Index has been simplified to the most possible extent. Its application needs the following consecutive steps:

1. Extraction of raw sub – indicator data from credible sources (here OECD Statistics). Sub - indicators with a negative sign, such as infant mortality, long – term unemployment and Gini index) were converted to positive values by using their absolute value. Authors' goal was to base the indicator on most recent data. Nevertheless for some countries reference years may differ (due to lack of adequate data – which should be always clearly stated, in order not to disturb comparative studies). In each case of reference period change, data from previous years has been checked for the possibility of radical changes of environment (as a result of i.e. external or internal shocks).
2. Calculation of the relative value of each of six sub – indicators. Relativization is necessary to put raw data into an analytic context – in our case the group of countries understood as top, middle and bottom benchmarks of the comparison. Eq. 1 shows the formula to be applied:

$$\text{Sub – indicator value} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}} \quad [\text{Eq. 1}]$$

3. Calculation of average values of indexes composed of more than one sub – index. As we see our model as developmental, more sub – indexes than two could be considered in the future. Average values are calculated through adding all sub – indexes belonging to one index and dividing their sum by their number. The value of indexes described by one sub – index only is equal to the sub – index itself.
4. Attributing weights to each of four indexes. Although in our research weights of all four indexes have been set on equal level (0,25), the model leaves the opportunity to adjust the weights of particular indicators, if needed. This would make sense i.e. in analyses of countries at different stages of socio – economic development. One could assume, that in countries at lower development levels a slightly higher weight should be attributed to income and employment stability, whereas countries that have achieved financial stability would focus more on distribution of wealth and health of their citizens.
5. Presentation of final results in the aggregated, tabular form, with countries grouped by their index rank or any other useful criterion.
6. Interpretation of obtained results.

Table 3 presents the final result of AHI calculation. Datasets have been taken from respective OECD reports.

Table 3: Aggregated Happiness Index

		Income	Employment		Health		Inequality	
INDEX RANK BY COUNTRY	INDEX VALUE	Household net adjusted disposable income	Employment rate	Long – term unemployment rate	Life expectancy	Infant mortality	Gini Index	
Norway	1	0,907	31459	75	0,38	81	2,8	0,25
Switzerland	2	0,859	30060	79	1,57	83	3,8	0,30
Sweden	3	0,842	26242	74	1,29	82	2,5	0,27
Luxembourg	4	0,838	35517	65	1,41	81	3,4	0,28
Austria	5	0,831	28852	72	1,07	81	3,9	0,27
Iceland	6	0,823	21201	79	1,97	82	2,2	0,27
Denmark	7	0,808	24682	73	1,85	80	3,4	0,24
Finland	8	0,808	25739	69	1,75	81	2,3	0,26
Netherlands	9	0,802	25493	75	1,49	81	3,8	0,28
Germany	10	0,792	28799	73	2,84	81	3,4	0,29
Australia	11	0,787	28884	73	0,96	82	4,1	0,33
Canada	12	0,767	28194	72	1,00	81	4,9	0,32
Japan	13	0,754	24147	70	1,78	83	2,3	0,34
France	14	0,752	28310	64	3,83	82	3,6	0,29
Belgium	15	0,743	26874	62	3,45	81	3,6	0,26
New Zealand	16	0,725	21892	73	0,59	81	5,5	0,32
United Kingdom	17	0,713	26904	70	2,62	81	4,2	0,35
Slovenia	18	0,700	19119	64	3,61	80	2,5	0,25
United States	19	0,680	38001	67	2,80	79	6,2	0,38
Italy	20	0,677	24216	57	4,36	83	3,4	0,31
Korea	21	0,675	17337	64	0,01	81	3,2	0,31
Czech Republic	22	0,656	16957	66	2,80	78	2,7	0,25
Israel	23	0,618	19120	61	1,13	82	3,7	0,37
Portugal	24	0,592	19366	64	6,14	81	2,5	0,34
Spain	25	0,583	22847	58	8,99	82	3,2	0,33
Ireland	26	0,578	24104	60	8,52	81	3,8	0,33
Greece	27	0,527	20440	56	8,75	81	3,8	0,33
Poland	28	0,522	15371	60	3,05	77	5,0	0,30
Slovak Republic	29	0,477	16682	59	8,65	76	5,7	0,26
Hungary	30	0,451	13858	56	5,36	75	5,3	0,27
Estonia	31	0,449	12800	65	7,06	76	3,3	0,31
Turkey	32	0,285	13044	48	2,59	75	7,8	0,41
Chile	33	0,267	11039	61	2,94	78	7,4	0,51
Mexico	34	0,240	12732	60	0,11	74	14,1	0,47

Source: own elaboration based on OECD StatExtracts from <http://stats.oecd.org/>

The results of the indicator are not surprising with Nordic countries together with Switzerland and Luxembourg being at the top and countries such as Mexico, Chile, Turkey ranking the lowest. The most interesting insight is the case of the USA. Even though it has the highest income per household it ranks 19th while according to the HDI it is 3rd (2013). This is mainly due to very poor results in health and inequality dimensions. Despite huge expenditure on health service infant mortality in the USA is comparable with those in Turkey and Chile. As far as inequality is concerned, USA has a very unequal, stratified society with huge wealth differences between the richest and the poorest. The example of the USA is a case in point of the beyond GDP approach. Sweden provides another interesting insight – its income per household is around 12 000 US dollars lower than in the United States. Still, despite much lower income, it ranks 3rd as it has very low unemployment, excellent achievements in the health dimension and, as all Nordic countries, a very equal society. It is worth mentioning that Portugal, Spain, Ireland and Greece are four countries that have been very severely touched by the global financial crisis. It is reflected in the indicator as they all rank rather low mainly due to very high long – term unemployment.

CONCLUDING REMARKS

Indicators are an inherent element of policy – making. They help understand complex issues by breaking them down into smaller components and outputting a single composite value or dashboard of values. They provide information to help prevent or solve existing problems. They frame debates and problems so that we can better understand and quantify them. It is crucial that indicators are used in policy – making, because they guide the society towards pre – set objectives and show policy – makers to which extent they have been achieved. Indicators are needed as what has not been measured cannot be managed.

The authors of this paper aimed at creating an indicator that would integrate financial, quantitative aspects of human lives with other, less tangible and of qualitative nature. But there was also a need to avoid distortions coming from subjectivity of data. The choice of sub – indexes was mainly driven by this necessity. Also data sources have been chosen carefully, with special focus put on their credibility (OECD, Gini Index). Unfortunately this last feature shows a weakness of the proposed index, as OECD Statistics do not include other countries than Member States of the Organization. Also the household net – adjusted disposable income is a sub – index at present available only for OECD countries. Nevertheless if credible source of data or a sub – index of similar construction is found it would be very easy to substitute respective parts of the presented model.

The authors of this paper believe that research on happiness and well – being will be continuously present in modern economic research, both of empirical and conceptual nature. Taking into account subjective components of well – being can contribute to overall increase of quality of human life. The Aggregated Happiness Index can be seen as a step providing ground for further discussion about incorporating qualitative measures into economic research.

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