Hybrid Version of Well-Being – Results for Selected European Countries

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Abstract

There are two main problems of well-being theory that hedonism, preference fulfilment theory, and the objective list theories have to deal with. The first problem relates to maintaining agent's autonomy and the second one breaking the vicious circle of personal adaptation to poor living conditions. While hedonism and preference fulfilment theory are able to tackle the autonomy problem effectively, they cannot overcome the problem of personal adaptation. In contrast, the objective list theories can solve the adaptation problem, but encounter difficulties as far as the agent's autonomy is concerned. Thus, it seems reasonable to combine this two approaches into one syncretic approach.

This paper aims to investigate the possibility of building the hybrid version of well-being (HWB), its operationalisation, and attempt to conduct comparative studies based on the HWB measure. The HWB is some trade-off between subjective and objective well-being. The HWB index was calculated by combining subjective and objective measures of well-being. The objective and aggregated assessment of respondents' quality of life or well-being (Q) was measured according to the fuzzy sets theory (Zadeh 1965). The subjective well-being referred to a personal evaluation of happiness. The dataset was based on the European Quality of Life Survey (EQLS). The member countries of the Visegrád Group and the Weimar Triangle were compared for HWB and other measures of well-being. Two variants of HWB were found: static, and dynamic measures. The hybrid well-being measure can be a valuable tool in collecting information regarding subjective – objective well-being evaluation fit.

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1. Introduction

Well-being is something non-instrumentally good for people, something which is in their interest.[3] Since Derek Parfit's book *Reasons and Persons* (1984), philosophers have been indicating at least three kinds of well-being theories: hedonistic theories, desire-fulfilment theories, and objective list theories.[4] According to Hedonistic Theorists "what would be best for someone is what would make his life happiest. On Desire-Fulfilment Theories, what would be best for someone is what, throughout his life, would best fulfil his desires. On Objective List Theories, certain things are good or bad for us, whether or not we want to have the good things, or to avoid the bad things" (Parfit 1984: 493).

[3] Well-being as a prudential value should be distinguished from moral values, such as the concept of Aristotelian perfectionism which stated that someone's life is an ideal and good as such, and not good for somebody.

[4] Some philosophers and psychologists indicate a fourth kind of well-being theory which is human flourishing (Kraut 2007; Seligman 2011). They usually refer to Aristotelian eudemonism which also inspired the objective list approach to well-being.

In economics, the most prominent place among well-being theories is taken by some variant of desire-fulfilment approach. What is specific for economists is that they generally favour preferences rather than desires. According to them, preferences are comparative evaluation while desires do not possess such a feature. It means that when someone prefers X over Y, they cannot prefer Y over X at the same time and in the same aspect. In contrast, even if someone desires X they can still desire Y at the same time (Hausman 2012).[5] Economists are used to measuring preference satisfaction in monetary metrics by GDP *per capita*. Besides desire-fulfilment theory in broadly treated economics, we can indicate some versions of the other two mentioned theories of well-being. Economics of happiness refers to the concept of happiness or life satisfaction, while development economics to the objective list of goods.

There are two main problems related to well-being theory that hedonism, preference fulfilment theory, and the objective list theories have to deal with. The first problem concerns maintaining the agent's autonomy and the second one breaking the vicious circle of personal adaptation to living in poor conditions. While the hedonism and preference fulfilment theories can tackle the autonomy problem efficiently, they cannot overcome the problem of personal adaptation. In contrast, the objective list theories can solve the adaptation problem, but encounter difficulties as far as the agent's autonomy is concerned. Thus, not surprisingly many philosophers start to investigate the possibility of constructing a hybrid version of well-being theory.

The hybrid approach to well-being was, for example, advocated by prominent philosophers such as Derek Parfit, Shelly Kagan, Richard Kraut and Władysław Tatarkiewicz. In a short but famous appendix to his book, Parfit points out "What is good for someone is neither just what Hedonists claim, nor just what is claimed by Objective List Theorists. We might believe that if we had either of these, without the other, what we had would have little or no value" (Parfit 1984: 502).

Kagan's remarks are similar in spirit but she highlights the subjective constraint of otherwise objective goods: "Instead of going all the way back to hedonism, and holding that well-being consists simply in the presence of pleasure, perhaps we could retain the thought that well-being involves various objective goods – things like accomplishment, or knowledge, or love – but insist nonetheless that one is well off only if one also takes pleasure in having these things. That is to say,

[5] Hausman (2012: 34, 35) calls it *total subjective comparative evaluation*.

I am well off if and only if there are objective goods in my life and I take pleasure in them, I enjoy having them" (Kagan 2009: 255). A complementary approach is presented by Kraut who points to an objective constraint of subjective goods "(…) what makes a desire good to satisfy is its being a desire for something that has features that make it worth wanting. Notice the difference between this approach and the one that lies behind the desire theory. It says that we confer goodness on objects by wanting them; by contrast, my idea is that the objects we desire must prove themselves worthy of being wanted by having certain characteristics. If they lack features that make them worth wanting, then the fact that we want them does not make up for that deficiency" (Kraut 2013: 289).

Even before all of these discussions, Tatarkiewicz in his book *Analysis of Happiness* indicated that "A subjective satisfaction is the condition of happiness, but it also has to be objectively justified. This invests the notion of happiness with a double nature, combining the subjective and the objective" (Tatarkiewicz 1976: 15, 16).

The present paper aims to investigate the possibility of building the hybrid version of well-being, its operationalisation, and attempt to conduct comparative studies based on the hybrid version of well-being measure. Our research is based on an empirical analysis of datasets from the European Quality of Life Survey Integrated Data File, 2003-2016. The depositor of the data is The European Foundation for the Improvement of Living and Working Conditions. The data were downloaded from the UK Data Service.

In the first section of this paper, the basic theoretical ideas and selected approaches are presented. The second section is devoted to data analysis. The results are discussed in the third section. The fourth section includes cross-countries comparisons. Next, appropriate calculations for member countries of the Visegrád Group, and the Weimar Triangle are performed. At the end of this paper, limitations, possible solutions, and clarifications are provided.

2. Theoretical framework

The hybrid version of well-being is a trade-off between subjective and objective well-being. To calculate the HWB index firstly, we need to find some measure of subjective and objective well-being.

In this paper, we treat subjective well-being (SWB) as happiness, measured by the use of a questionnaire – the European Quality of Life Survey (EQLS) where respondents answer the following question: "Taking all things together on a scale of 1 to 10, how happy would you say you are?"

While SWB is a kind of self-evaluation of the subjective state of happiness, the objective aspects of HWB refer to Amartya Sen's and Martha Nussbaum's capability approaches. According to Sen (2005), the personal capability is defined as a set of valuable "doing" or "being," that a particular person is able to do or to be. For instance, it is not only important that someone has a car (commodity), and they actually drive it (functioning), but also their personal characteristics (e.g., health) and natural and social environment (e.g. distance to work, income), and their ability to use a car when they need and want it (capability). Sen is convinced that establishing a complete, all-purpose useful list of human capability is impossible and unnecessary. Depending on our particular objectives (e.g., poverty eradication or gender inequality prevention), when we look for the most important capability set each time we have to rely on the process of public deliberation. Nussbaum takes a different view. According to her, there are fundamental human capabilities related to life, health, relationships, etc. All of them secure personal autonomy and dignity which is why they are universally important.[6] This leads her to propose a list of central human capabilities comprising ten dimensions: (1) life, (2) bodily health, (3) bodily integrity, (4) senses, imagination and thought, (5) emotions, (6) practical reason, (7) affiliation, (8) other species, (9) play, (10) control over one's political and material environment (Nussbaum 2003: 41, 42). According to Nussbaum (2003: 40), this specific "Decalogue" is focused on both "the comparative quality-of-life measurement and the formulation of basic political principle of the sort that can play a role in fundamental constitutional guarantees."

In this paper, we try to operationalise Nussbaum's list linking each dimension to a specific variable or variables from the EQLS. Based on the fuzzy sets theory we calculate the index of objective well-being. Then the index is rated on the scale of 1 to 10, similarly to SWB. Thus, there are two measures of well-being, subjective self-evaluation (SWB) and objective calculation. The former is called S (subjectivity), while the later Q (quality of life). It is worth mentioning that to use a survey

[6] Of course, the list's content is still debatable, there are also discussions regarding weights assigned to particular categories of well-being. Nonetheless, the list approach gained some popularity among empirical researchers (Alkire 2002).

to operationalise Nussbaum's approach we have to focus on personal functionings rather than capabilities due to the fact that surveys usually contain information regarding actual and not potential doings or beings.

Based on subjective (S) and objective (Q) well-being we calculate two variants of the HWB index. Firstly, HWB is defined as a minimum value of S or Q, according to the formula HWB = min(S, Q). Secondly, the mobility index which measures the distance between S and Q is calculated.

Defining HWB as the minimum value of S or Q might yield three possible outcomes: either Q is less than S (Q < S) or S is less than Q (S < Q) or S is equal to Q (S = Q). We suggest the following interpretation of each of these solutions. If Q < S it means that someone chooses the goods which are not worth wanting, or she/he adapts to bad living conditions (has cheap tastes). In such a case their well-being remains at the level Q. If, on the other hand, S < Q then someone does not want to choose the goods which are worth wanting or she/he adapts to luxury (has expensive tastes). At this time their well-being remains at the level S.[7] When S = Q, it means that someone chooses only the goods which are worth wanting.

We are convinced that in order to enhance a person's well-being, two separately justified and independent conditions should be fulfilled: the first, the outcome which is the object of personal desire should be worth wanting (an objective condition), and the second, the subject should want to achieve this outcome (a subjective condition). Both conditions are independently necessary and jointly sufficient. At this stage, our approach is an exemplification of what according to Woodard (2015: 7) is called a joint necessity model of well-being.

Giving priority to Q when it takes a lower value enables us to be sensitive to the adaptation problem while favouring S when it becomes lower is a way to respond to the problem of personal autonomy. In other words, if someone feels very happy (S is high) while their quality of life is reduced (Q is low) we suggest that their well-being is in fact at the level Q. But if someone feels really dissatisfied (S is low) while their quality of life is excellent (Q is high) we think that their personal experience should have priority. In such a case, nobody should be able to force another

[7] Therefore, our approach is sensitive to the so-called satisfaction paradox (Q<S) and satisfaction dilemma (Q>S) (Boelhouwer, Noll 2014: 4437).

person to choose the goods which he or she does not want. Thus, to highlight their autonomy, in our approach, the level S indicates their well-being.

3. Data analysis

3.1. Procedure

The source of our statistical data was the European Quality of Life Survey (EQLS) gathered between 2003-2016. The data file contained 667 variables collected for 36 countries in four waves. In this paper, we focus on data for Poland and other countries belonging to the Visegrád Group, and the Weimar Triangle, collected in the fourth wave (2016). Depending on the countries there are between 1009 and 1631 observation units (individuals). After checking the data for completeness and eliminating missing data, the number of observation units was usually significantly reduced. Thus, we decided to complement the missing data. To do this, we chose the variables which had the least deficiencies and were relevant to well-being research. These variables became the basis for completing missing data in other variables. For this purpose, a procedure based on the *k*-nearest neighbours algorithm implemented in a Statistica package was used. Finally, the data contained between 975 and 1619 observation units and accounted for 24 variables without missing data.

The variables were grouped into five dimensions, which are the dimensions of central human functionings: (1) life, (2) health, (3) education, (4) relationships, and (5) income. The variables are the indicators of objective well-being (Q). These variables are the indicators of objective well-being whereas general happiness is the subjective indicator of well-being. We comply with an objective-subjective distinction concerning indicators. The objective indicators are focused on a measure of a situation while the subjective indicators are used as an evaluation of a situation (Boelhouwer, Noll 2014: 4436). For instance, feeling happy is an evaluation of overall personal situation while lack of bath or shower, or distance to doctor's office are the measures of their situation.

The selection of indicators depended on a theoretical framework, mainly Nussbaum's proposal of the objective list, as well as the availability of data. Due to a shortage of data, we narrowed down

Nussbaum's list to five dimensions of objective well-being instead of the original 10 (Table 1). All indicators of well-being included in particular dimensions were collected by self-reporting.[8]

Table 1: **The indicators included in the central human functionings**

Dimensions of central human functionings	Set of indicators
Life	Problems with the neighbourhood – noise Problems with the neighbourhood – air quality Problems with the neighbourhood – traffic congestion Problems with accommodation – a shortage of space Problems with accommodation – lack of indoor flushing toilet Problems with accommodation – lack of bath or shower Own hobbies, interests Numbers of rooms per person
Health	General self-evaluation of health Chronic (long-standing) physical or mental health problem, illness or disability Distance to doctor's office/hospital/medical centre Waiting time to see a doctor on the day of the appointment
Education	The highest level of education
Social relationships	Face-to-face contact with friends or neighbours Contact with family members Another social contact (not family) Take part in sports or physical exercise Participate in social activities of a club, society, or an association Attended a meeting of a trade union, a political party or political action group Attended a protest or demonstration Signed a petition, including an e-mail or online petition Contacted a politician or public official
Income	OECD equivalised household income in PPP Make ends meet

Source: own analysis based on Nussbaum's list of central human capability.

To obtain one, aggregated assessment of respondents' objective well-being (Q) we referred to the fuzzy sets theory proposed by Zadeh (1965), which is often applied to evaluate people's degree of

[8] Another way of data collection is by independent registration (Boelhouwer, Noll 2014: 4436) but in the EQLS this method was not used.

poverty risk. It is worth noting that the theory was successfully applied to form a membership function to the poverty sphere in both monetary and non-monetary approaches. Among those who used the fuzzy sets theory were Cerioli, Zani (1990), Cheli (1995), Betti, Cheli, Lemmi, Verma (2005), and in Poland: Panek (2011), Ulman, Šoltés (2015). In contrast to the classic approach to the identification of the poor when the membership function takes only two values: 1 (when someone is poor) or 0 (when someone is not poor), the fuzzy sets approach assesses a person's degree of poverty risk by means of a function which takes values from a range of [0;1].

The membership function to the poverty sphere is based on poverty symptoms or indicators, distinguishing a monetary part (based on incomes or expenses) and a non-monetary part (various factors which can point to a poverty risk). Due to the fact that poverty can be treated as a low level of well-being, we can apply this approach to research on levels and diversities of well-being (referring to persons, families or households). Thus, we have substituted a membership function to poverty sphere with the well-being sphere.

The first step to obtaining an aggregate measure of well-being is to standardise individual variables (well-being indicators). There is the following formula of standardisation:

$$e_{hj,i} = \frac{F(c_{hj,i}) - F(1)}{1 - F(1)},\ h = 1,2, \ldots, m;\ j = 1,2, \ldots, k_h;\ i = 1,2, \ldots, n, \qquad (1)$$

where:

$c_{hj,i}$ – is a rank of a variant of *j*-variable (factor of poverty/well-being) from *h*- dimension of poverty/well-being for *i*-household (individual),

F(1) – is a value of cumulative distribution function of ranks of *j*-variable from *h*-dimension of poverty/well-being for rank equal 1 (a variant of *j*-variable indicating the lowest level of well-being/the highest level of poverty risk).

The values of this measure are obtained for each variable (indicator) and are normalised into a range of [0;1]. The higher the value of (1) the higher the well-being level indicated by a given indicator. In the next step, the aggregation of assessments of membership (for each individual) to well-being (lower level of poverty) was performed by calculating the arithmetic or weighted mean for each of the dimension, then the arithmetic or weighted mean was calculated for an overall

assessment of well-being. In order to obtain the aggregated and normalised value of the well-being assessment for each dimension the following formula was used:

$$e_{h,i} = \frac{\sum_{j=1}^{k_h} w_{hj} * e_{hj,i}}{\sum_{j=1}^{k_h} w_{hj}}, \quad (2)$$

where:

$e_{h,i}$ – is aggregated assessment of well-being for *i*-individual (person) in the *h*-dimension,

w_{hj} – is a weight for *h*-dimension,

k_h – is a number of variables in *h*-dimension.

The system of weights is given by the formula:

$$w_{hj} = -ln\left(\frac{1}{n}\sum_{i=1}^{n} e_{hj,i}\right), \quad (3)$$

where:

n – is a number of individuals (persons).

Such a system of weights attributes more importance to these well-being symptoms which are less common among the individuals.

Then, we calculated an overall aggregate evaluation of objective well-being for each person as the arithmetic mean:

$$e_i = \frac{\sum_{h=1}^{m} e_{h,i}}{m}, \quad (4)$$

where *m* is a number of dimensions.

Finally, the calculation of the membership function to the well-being sphere (lower level of poverty risk) for *i*-person was made according to the following formula:

$$\lambda_i = \left(\frac{F_i + L_i}{2}\right)^{\alpha}, \quad (5)$$

where:

F_i – is a value of cumulative distribution function of the assessments of well-being $F(e_i)$ for each dimension or in total,

L_i – is a value of a Lorenz function of the assessments of well-being $F(e_i)$ for each dimension or in total,

α – is a parameter.

The values of λ_i function fall into a range [0;1]. The higher value of the function, the higher personal well-being is. α parameter allows for calibrating the function λ_i in such a way that its values become comparable to the values of the base variable (S), which is a subjective evaluation of happiness.

To summarise, applying formula (1) the value of $e_{hj,i}$ was calculated for each variable. Then, all these values were aggregated by taking the weighted mean for each *h*-dimension of well-being and after applying the formula (4) for all dimensions together. Finally, based on the aggregated values, the membership function to the well-being sphere (5) was calculated for each of five dimensions, and in total.

Because we wanted to compare our calculation to subjective evaluations of happiness (S), which was our base variable, we decided to calibrate the function (5) in such a way that the mean of the function (5) was equal to the mean of the base variable (S).[9] To achieve this goal, we had to adjust the α parameter, and its estimated value, which ensured the equality of the means (e.g. for Poland 0.2894).

To compare the base variable (S) to objective well-being (Q), we grouped the values of the function (5) into ten levels. We assumed that the interval of the function variability would be divided into ten intervals of equal length. Finally, based on the particular interval of the value of the function (5), the numbers from 1 to 10 were assigned to each observation unit (individuals).

To indicate a transition between S and Q or S and HWB we used Bartholomew's mobility index (*B*), which in the present context can be defined as

$$B = \frac{1}{s-1}\sum_{i=1}^{s}\sum_{i=1}^{s} w_i p_{ij} |i-j|, \qquad (6)$$

where:

s – is a number of levels,

w_i – is a fraction of people belonging to *i*-th level of the base variable (S),

p_{ij} – is a probability of each element mobility, which is calculated by the following formula:

[9] The variable (S) represents the level of happiness on a scale of 1 to 10, while function (5) takes values of 0 to 1 so the average of variable (S) was divided by 10 to compare with the average of the values of function (5).

$$p_{ij} = \frac{n_{ij}}{\sum_{j=1}^{s} n_{ij}} \text{ for } i,j = 1, 2, \ldots s, \quad (7)$$

where:

n_{ij} – is a number of people belonging to *i*-th level of the base variable (S) and *j*-th level of the objective well-being assessment (Q or HWB).

3.2. Results for Poland

For Poland, the data contained 975 individuals (observation units). The subjective and objective evaluations of well-being are compared in Table 2. Respondents' degree of happiness (S) was compared to an objective assessment of well-being (Q). For instance, 11 people in total claimed to be very unhappy, however, according to our calculated assessment of well-being, none of these respondents fell into the lowest level of well-being. Instead, all of them were included in the higher levels of well-being: levels 2, 5, 6, and 8 (one person each), 7 (two persons), and 4 (five persons).

Table 2: **Happiness vs objective well-being for Poland**

Degree of happiness (S)	Objective well-being (Q)										
	1	2	3	4	5	6	7	8	9	10	Total
1 – very unhappy	0	1	0	5	1	1	2	1	0	0	11
2	0	0	2	1	1	6	2	3	3	1	19
3	0	1	3	5	2	1	6	2	4	1	25
4	0	0	3	2	1	3	4	5	5	4	27
5	0	2	3	6	14	25	21	31	22	11	135
6	0	1	3	5	6	16	14	19	14	16	94
7	0	0	1	3	13	11	15	16	40	38	137
8	0	0	1	4	8	13	30	37	56	70	219
9	0	0	0	0	5	5	10	17	23	45	105
10 – very happy	0	0	0	3	7	9	23	38	49	74	203
Total	0	5	16	34	58	90	127	169	216	260	975

Source: own analysis of EQLS data.

The main downwards diagonal shows the number of people whose subjective evaluation of happiness (S) was equal to the objective assessment of well-being (Q) calculated by function (5). The number of people whose subjective evaluation was lower than the objective assessment of well-being (S < Q) allocated above the main downwards diagonal, whereas individuals whose happiness was higher than their objective evaluation of well-being (S > Q) allocated below the main downwards diagonal. Thus, having both S and Q, the hybrid version of well-being (HWB) was calculated according to the formula HWB = min(S, Q). For instance, HWB at level 5 consisted

of 14 cases when Q = S, 110 cases (25 + 21 + 31 + 22 + 11) when S < Q, and 39 cases (6 + 13 + 8 + 5 + 7) when S > Q. There was a total of 163 cases as shown in Table 3.

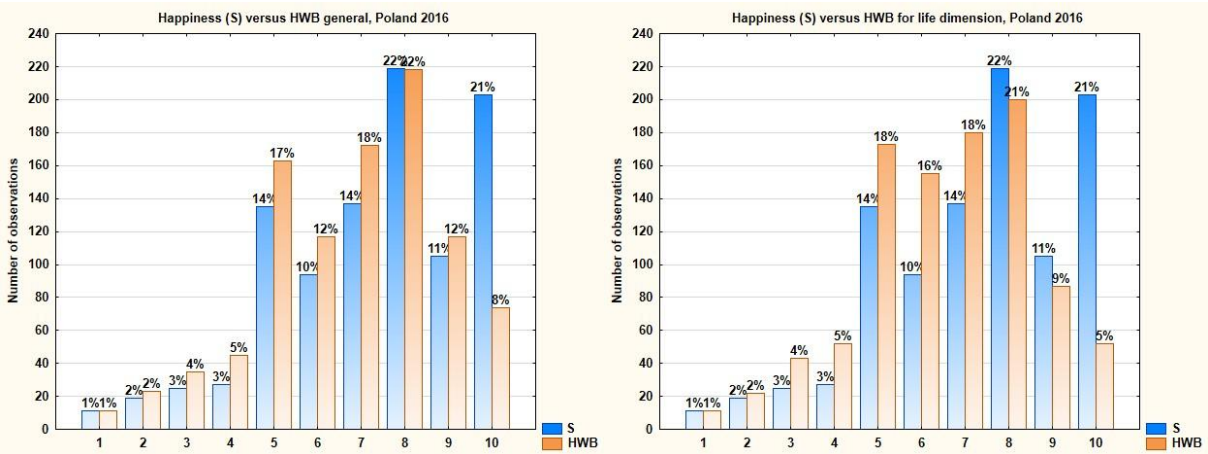
Table 3: **Happiness vs hybrid well-being for Poland**

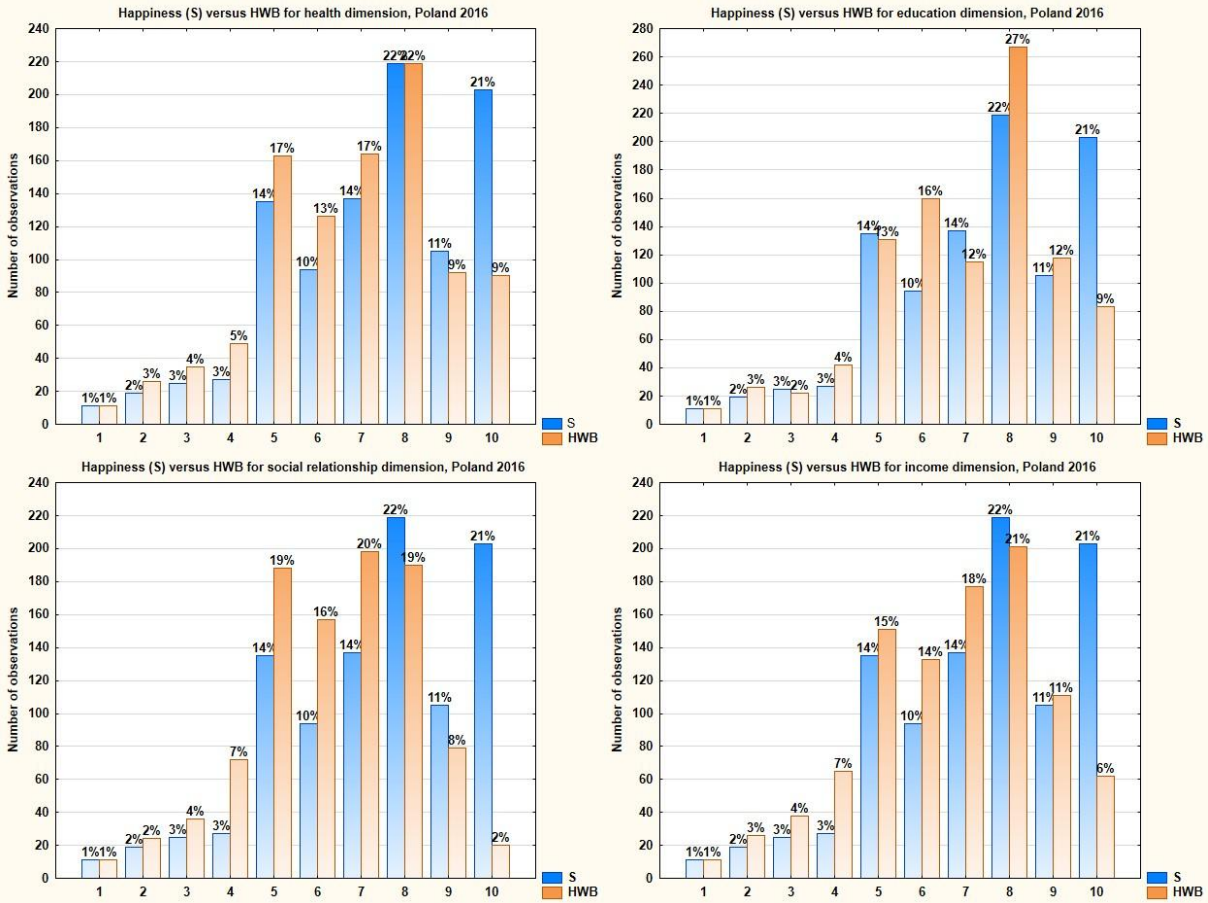
Degree of happiness (S)	Hybrid well-being HWB = min (S, Q)										
	1	2	3	4	5	6	7	8	9	10	Total
1 – very unhappy	11	0	0	0	0	0	0	0	0	0	11
2	0	19	0	0	0	0	0	0	0	0	19
3	0	1	24	0	0	0	0	0	0	0	25
4	0	0	3	24	0	0	0	0	0	0	27
5	0	2	3	6	124	0	0	0	0	0	135
6	0	1	3	5	6	79	0	0	0	0	94
7	0	0	1	3	13	11	109	0	0	0	137
8	0	0	1	4	8	13	30	163	0	0	219
9	0	0	0	0	5	5	10	17	68	0	105
10 – very happy	0	0	0	3	7	9	23	38	49	74	203
Total	11	23	35	45	163	117	172	218	117	74	975

Source: own analysis of EQLS data.

Taking aggregate numbers of S and HWB in each level of happiness and well-being (boundary values in the table), HWB exceeded S for lower and middle levels (from 2 to 7) while S exceeded HWB rather for higher levels (8 and most of all for 10). It means that according to HWB there were more people in the lower and middle levels of well-being than were indicated by self-evaluation of happiness (S). A similar pattern was presented concerning all five dimensions of central human functionings (see Fig. 1).

Fig. 1: **Subjective well-being (S) vs. hybrid well-being (HWB) for Poland**





Source: own analysis of EQLS data.

Since HWB is focused on the lowest levels of S or Q, when calculating HWB it is important to be sensitive not only to the aggregate number of HWB in each level but also to the movement between higher and lower levels of well-being. For this reason, the mobility index was calculated. Table 4 shows the outcomes of the mobility index when subjective evaluation (S) is higher than an objective assessment of well-being (S > Q), and when the subjective evaluation (S) is lower than the objective assessment of well-being (S < Q), as well as the total value. Due to the fact that S is the base variable, the mobility index is a measure which captures the movement from S to Q. The value of the mobility index depends on the probability of transition within the compared levels of well-being assessment as well as the size of these transitions (differences in well-being evaluations).

Table 4: **Mobility index for Poland**

Mobility index	Total	1 Life	2 Health	3 Education	4 Social Relationships	5 Income
ind S>Q (HWB index)	0.061560	0.121389	0.058918	0.047025	0.113649	0.079355
ind S<Q	0.133529	0.134884	0.142808	0.159678	0.114009	0.126759
ind Total	0.195089	0.256273	0.201726	0.206703	0.227659	0.206114

Source: own analysis of EQLS data.

In general, the movement from lower subjective declarations to higher objective evaluations of well-being S < Q (0.133529) was more important, in comparison to the movement from higher subjective assessment to lower objective calculation S > Q (0.061560). It means that the objective quality of life appeared to be better than self-evaluation of happiness. For instance, out of 135 cases at level 5 in happiness evaluation (S), 110 cases were put higher on the objective scale of well-being (Q). Due to the fact that HWB concentrates on the lowest levels of S or Q, the mobility index when S > Q reflects the idea of hybridisation. In such a case the mobility index is sensitive to the movement from higher S to lower Q and ignores the movement from lower S to higher Q. If Q is higher than S, the hybrid well-being should remain at level S.[10]

Among the five dimensions of evaluation the mobility index when S > Q was the lowest in education dimension (0.047025) and the highest in life dimension (0.121389). These results may indicate that the respondents were more satisfied with their life than we could expect, taking into account the objective conditions.

The lower mobility index, the more accurate personal self-evaluation of happiness is in relation to the objective assessment, and the highest well-being. Thus, we have to tend to minimise HWB measured as a mobility index.

In summary, two measures of HWB were calculated, one static and one dynamic: the first, level aggregation, when HWB = min(S, Q), the second, level movements, when HWB = mobility index for S > Q. As a result, we yielded three kinds of information regarding personal well-being, which is useful for policy purposes: (1) levels of subjective well-being, (2) levels of objective well-being,

[10] It is also possible to measure the movements from higher Q to lower S but in such a case the base variable should be Q and HWB index would be calculated for Q.

(3) movement from S to lower Q (potential adaptation problems). Thus, it is now possible to apply these measures to cross-countries comparisons.

4. Cross-countries comparisons

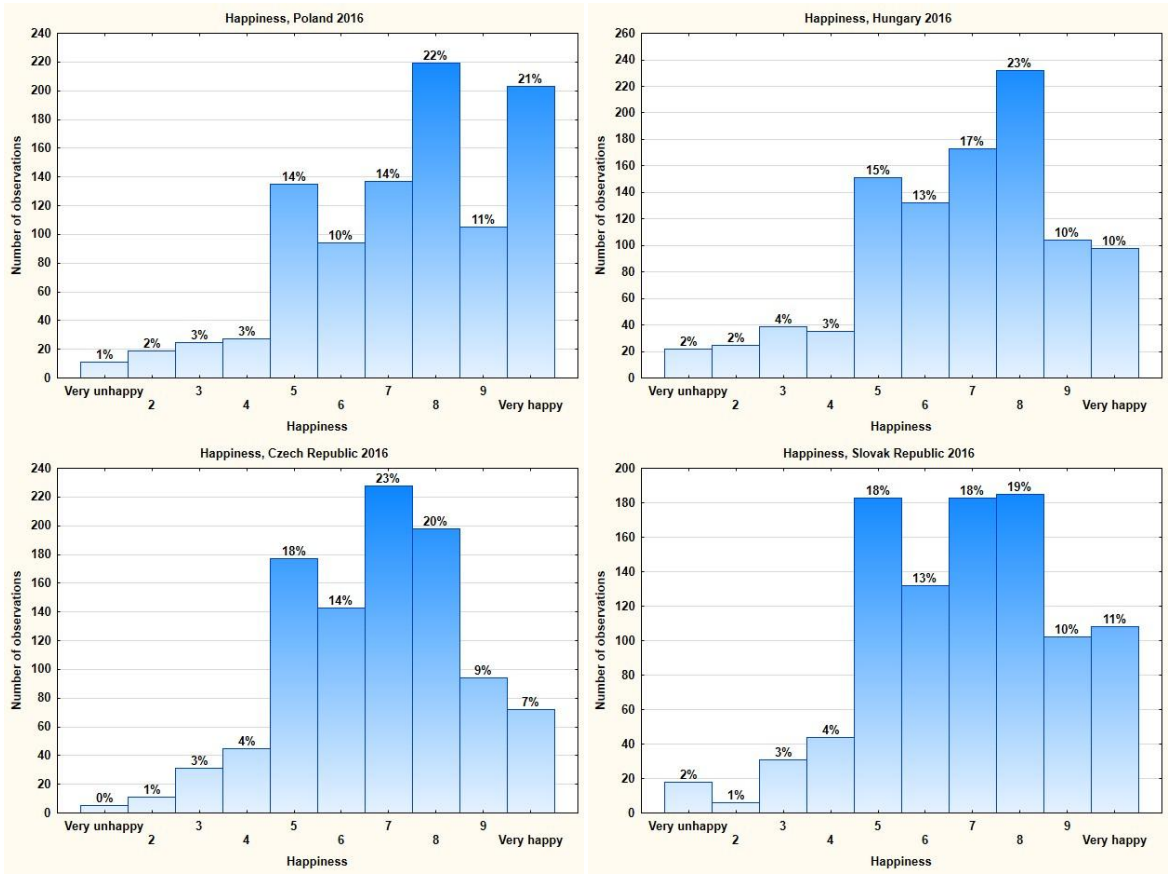
First, Poland will be compared to other member countries of the Visegrád Group (Hungary, the Czech Republic, and the Slovak Republic), and next to the Weimar Triangle's countries (France and Germany). In order to show the potentiality of HWB measure we will contrast it with other well-being measurers like happiness, aggregated objective well-being (e_i) or, the most popular among economists, GDP *per capita*. Our approach is in line with the relativistic approach to poverty research, according to which there are various levels of poverty lines in different societies. We evaluate of happiness (S), aggregated objective well-being (e_i), and HWB separately for different societies, then perform cross-counties comparison. In other words, we do not examine the differences of S, e_i or HWB directly between countries. The data contained the following numbers of individuals (observation units) for each country: Poland 975, Hungary 1011, the Czech Republic 1004, the Slovak Republic 992, Germany 1619, and France 1161.

4.1. The Visegrád Group

Regarding evaluation of happiness (see Fig. 2), in case of the Czech Republic, the Slovak Republic, and Hungary there is a significant increase of respondents who assess their happiness at level 5 to 8 and a decrease of them at level 9, and 10. Poland considerably differs from this schema because there is a high share of Poles who evaluate their happiness at the highest level (10). Perhaps for this reason if we sum up the percentage of people claiming they are happy at least at level six (from 6 to 10 levels) we will notice that the happiest persons are in Poland (78%), then in the Czech Republic and Hungary (73% in each country), and least happy in the Slovak Republic (71%).

This declared self-evaluation of happiness is partially in contrast with aggregated objective well-being (see Table 5). According to an objective measure, the highest well-being remains in Poland (0.539254), then is the Slovak Republic (0.534366), the Czech Republic (0.524647), and Hungary (0.517877).

Fig. 2: **Subjective well-being (S) for the Visegrád Group**



Source: own analysis of EQLS data.

Table 5: **Aggregated objective well-being (e_i) for the Visegrád Group**

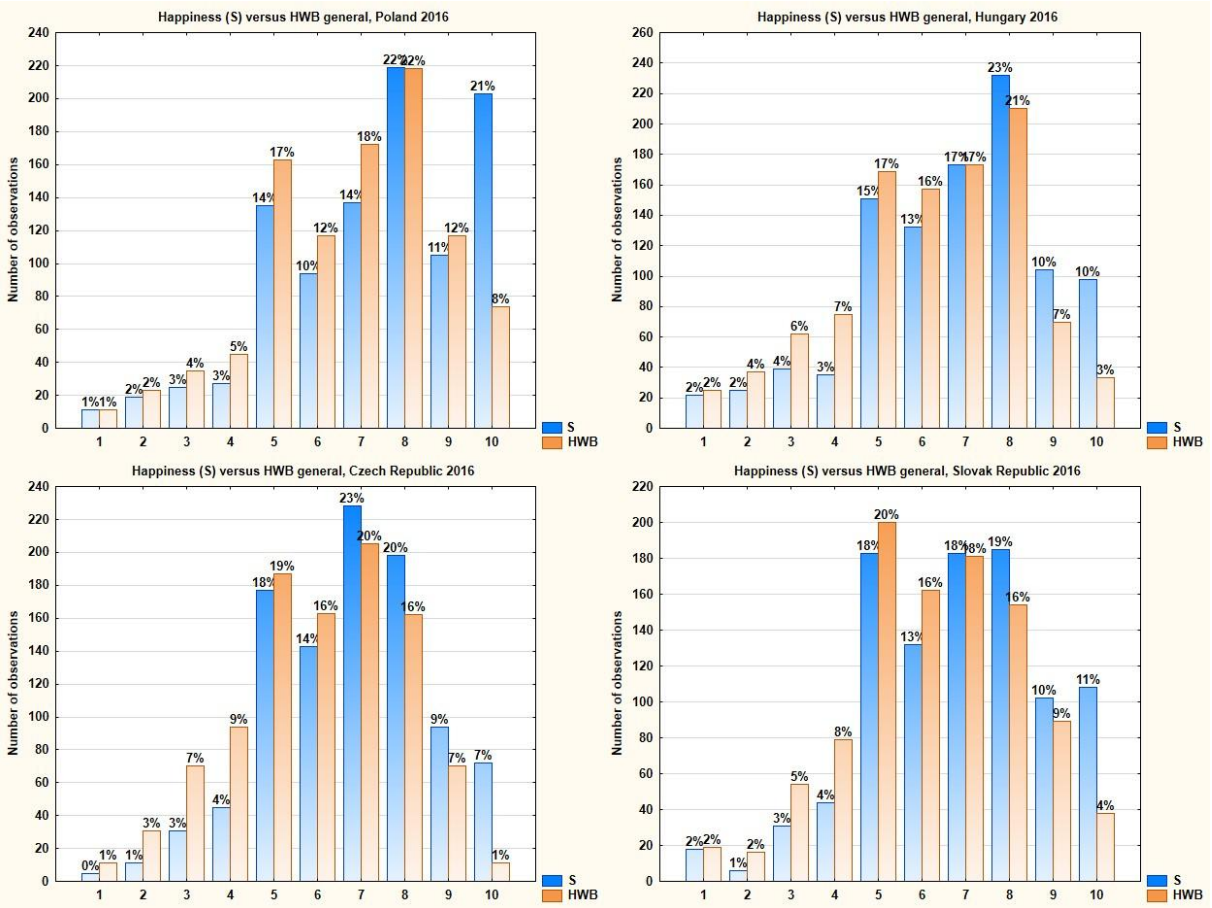
Dimensions	Poland	Czech Republic	Hungary	Slovak Republic
1 Life	0.686827	0.650775	0.649471	0.648011
2 Health	0.727837	0.709240	0.707312	0.729755
3 Education	0.611859	0.596171	0.584374	0.603505
4 Social relationships	0.101614	0.100999	0.078972	0.112350
5 Income	0.568133	0.566052	0.569255	0.578211
Total	0.539254	0.524647	0.517877	0.534366

Source: own analysis of EQLS data.

As shown in Fig. 3, comparing subjective well-being (S) to HWB in each country we can notice a very similar pattern. In general, there are a higher share of respondents regarding HWB than S for lower and middle levels (from 1 to 7), and a lower share of them for higher levels (from 8 to 10).

As was mentioned before, we can interpret it as a sign that there are more people in the lower and middle levels of well-being than was indicated by the self-evaluation of happiness (S).

Fig. 3: **Subjective well-being (S) vs HWB for the Visegrád Group**



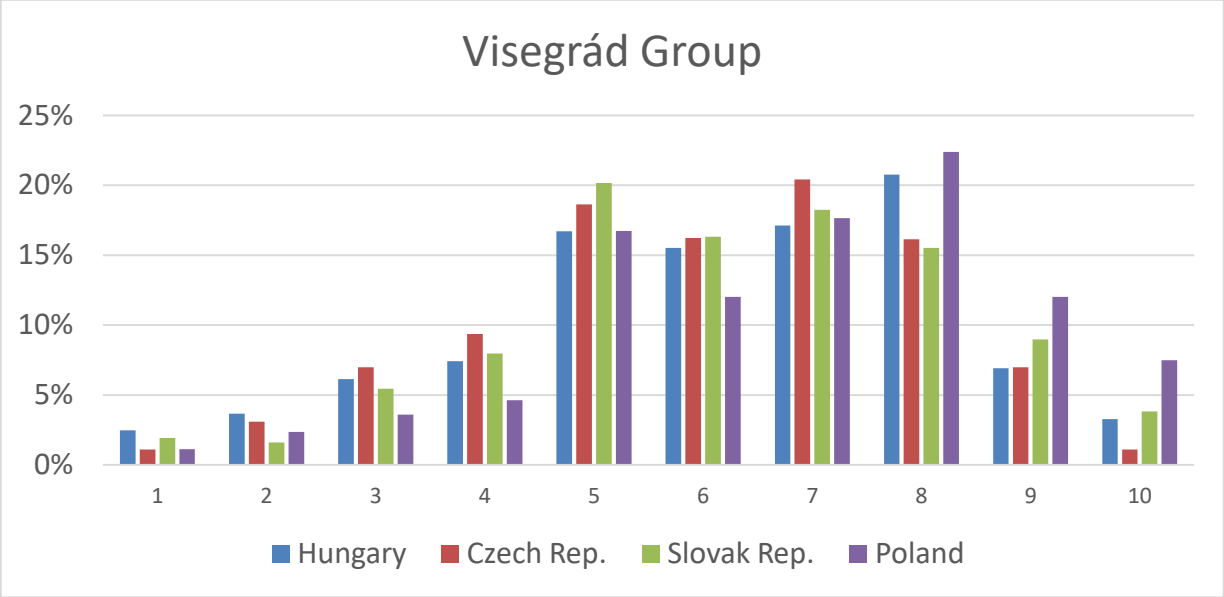
Source: own analysis of EQLS data.

If we compare HWB levels (static measure) for each Visegrád Group's countries (see Fig. 4), and sum up a share of a higher levels (from 6 to 10 levels) we can create the following ranking of the countries: Poland (71.6%), Hungary (63.6%), the Slovak Republic (62.9%), and the Czech Republic (60.9%).

This ranking will change if we take into account the dynamic HWB, measured by the mobility index (see Table 6). The lower the value of the mobility index, the higher hybrid well-being, thus according to this measure the ranking of the countries is as follows: Poland (0.061560), the Slovak Republic (0.068417), Hungary (0.077990), and the Czech Republic (0.090252). For all of these countries the highest mobility is in the life dimension, almost equally divided from higher S to

lower Q (S > Q) and lower S to higher Q (S<Q). The most significant difference between movements from higher S to lower Q and from lower S to higher Q for each country occur in health and education dimensions. However, the most important movements in health and education are the movements from the lower S to higher Q. We can speculate that people assess their happiness as lower than they should, taking into account objective factors, or that the movements between lower S and higher Q are more important (differ more than one level), or both.

Fig. 4: **HWB Comparison for the Visegrád Group**



Source: own analysis of EQLS data.

Table 6: **Mobility index for the Visegrád Group**

Poland						
Mobility index	Total	1 Life	2 Health	3 Education	4 Social Relationships	5 Income
ind S>Q (HWB index)	0.061560	0.121389	0.058918	0.047025	0.113649	0.079355
ind S<Q	0.133529	0.134884	0.142808	0.159678	0.114009	0.126759
ind Total	0.195089	0.256273	0.201726	0.206703	0.227659	0.206114
Hungary						
Mobility index	Total	1 Life	2 Health	3 Education	4 Social Relationships	5 Income
ind S>Q (HWB index)	0.077990	0.130871	0.069050	0.068666	0.120715	0.090972
ind S<Q	0.133808	0.127822	0.138106	0.152978	0.104928	0.133693
ind Total	0.211799	0.258693	0.207156	0.221643	0.225643	0.224665

Czech Republic						
Mobility index	Total	1 Life	2 Health	3 Education	4 Social Relationships	5 Income
ind S>Q (HWB index)	0.090252	0.138859	0.080608	0.078108	0.113135	0.097035
ind S<Q	0.131635	0.132202	0.147986	0.168282	0.110765	0.137860
ind Total	0.221888	0.271061	0.228594	0.246390	0.223900	0.234896
Slovak Republic						
Mobility index	Total	1 Life	2 Health	3 Education	4 Social Relationships	5 Income
ind S>Q (HWB index)	0.068417	0.130931	0.070744	0.074621	0.097425	0.082236
ind S<Q	0.142657	0.117497	0.158435	0.163146	0.116846	0.143375
ind Total	0.211074	0.248428	0.229179	0.237767	0.214271	0.225612

Source: own analysis of EQLS data.

Another ranking of countries emerges when we consider the mean GDP *per capita* in 2013-2016 (see Table 7). The highest position is occupied by the Czech Republic, followed by the Slovak Republic, Hungary, and Poland. This is exactly a reverse order to the one in the ranking based on static HWB.

Table 7: **GDP per capita for the Visegrád Group**

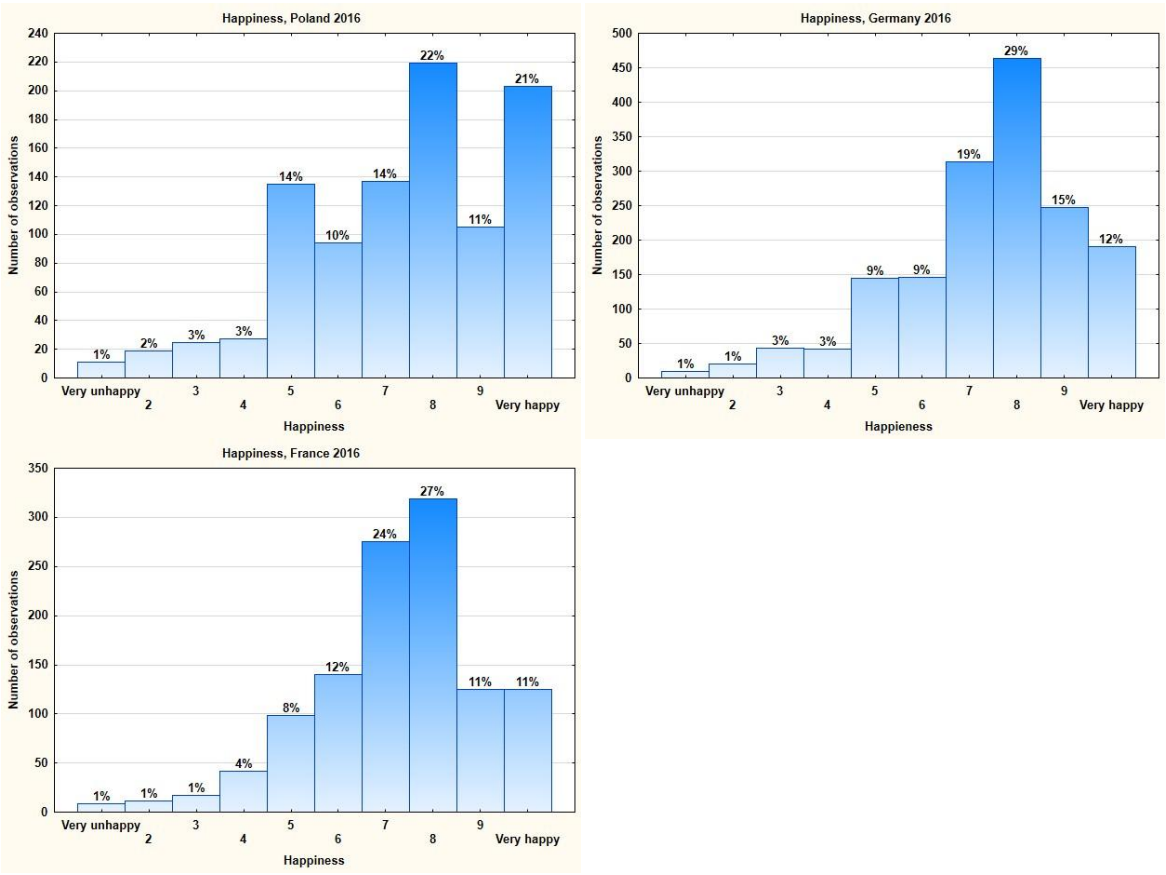
GEO/TIME	2013	2014	2015	2016	2013-2016
Czech Republic	22 400	23 800	25 300	25 600	**24 275**
Hungary	18 000	18 800	19 800	19 700	**19 075**
Poland	17 900	18 600	19 800	19 900	**19 050**
Slovak Republic	20 500	21 300	22 300	22 400	**21 625**

Source: Eurostat.

4.2. The Weimar Triangle

While for France and Germany the number of respondents who assess their happiness at levels 1 to 8 gradually increases but significantly drops at levels 9 and 10, then for Poland this number remains considerably high at levels 5 and 10 (see Fig. 5). Even though a large number of people evaluating their happiness at level 10, if we sum up the share of assessments from levels 6 to 10 we will notice that the happiest persons are in France (85%), and Germany (84%) but not in Poland (78%). The countries order change slightly regarding aggregated objective well-being (e_i). As shown in Table 8 France (0.544103) is still placed higher than Poland (0,539254); however, Poland is placed higher than Germany (0.537647). One of the reason is that France is significantly better than Poland with respect to social relationships (dimension 4).

Fig. 5: **Subjective well-being (S) for the Weimar Triangle**



Source: own analysis of EQLS data.

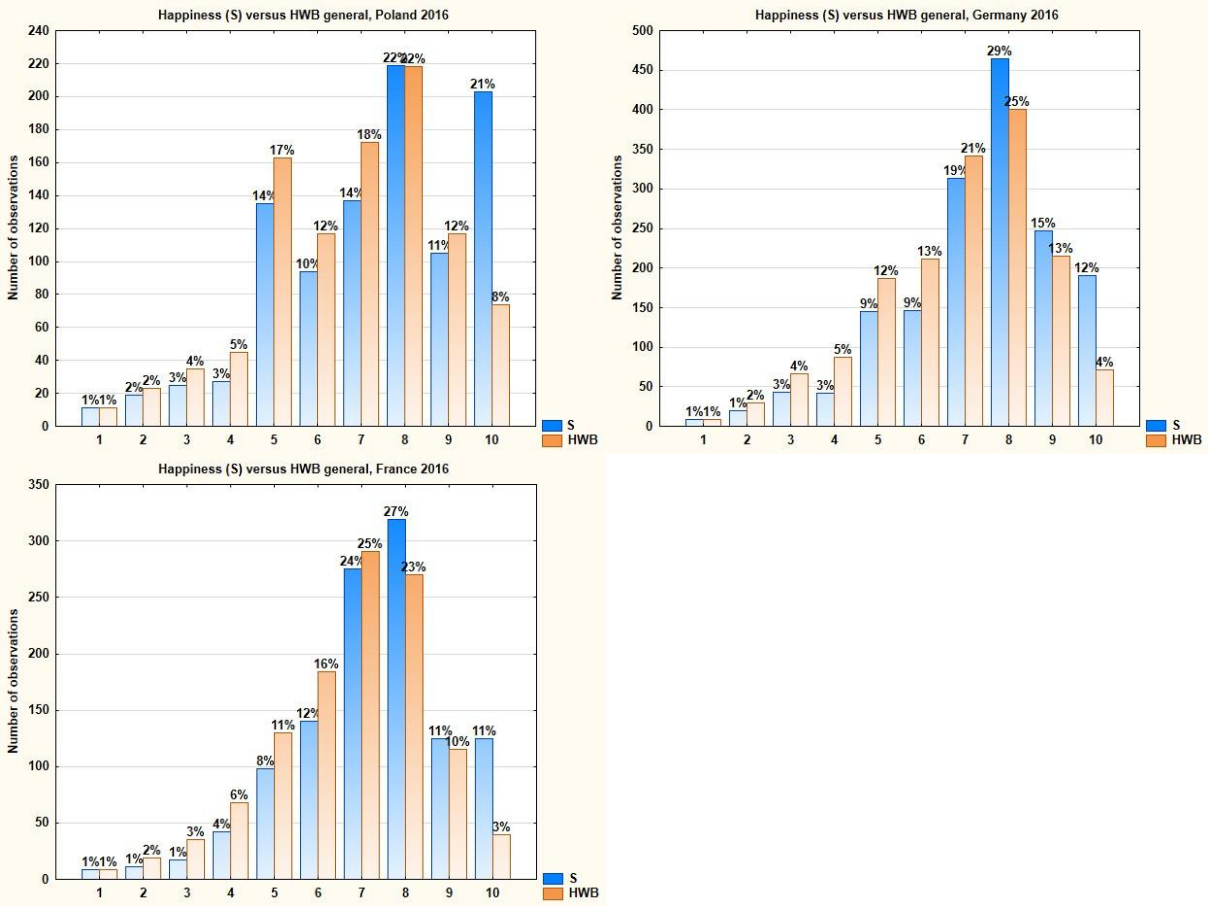
Comparing subjective evaluation (S) to HWB, we can notice a very similar pattern in France and Germany (see Fig. 6). Poland differs from this pattern especially regarding levels 5 and 10, which are significantly higher than in other Weimar Triangle's countries.

Table 8: **Aggregated objective well-being (e_i) for the Weimar Triangle**

Dimensions	Poland	Germany	France
1 Life	0.686827	0.684590	0.686310
2 Health	0.727837	0.681877	0.735941
3 Education	0.611859	0.614918	0.575667
4 Social relationships	0.101614	0.163765	0.174666
5 Income	0.568133	0.543084	0.548070
Total	0.539254	0.537647	0.544103

Source: own analysis of EQLS data.

Fig. 6: **Subjective well-being (S) vs HWB for the Weimar Triangle**

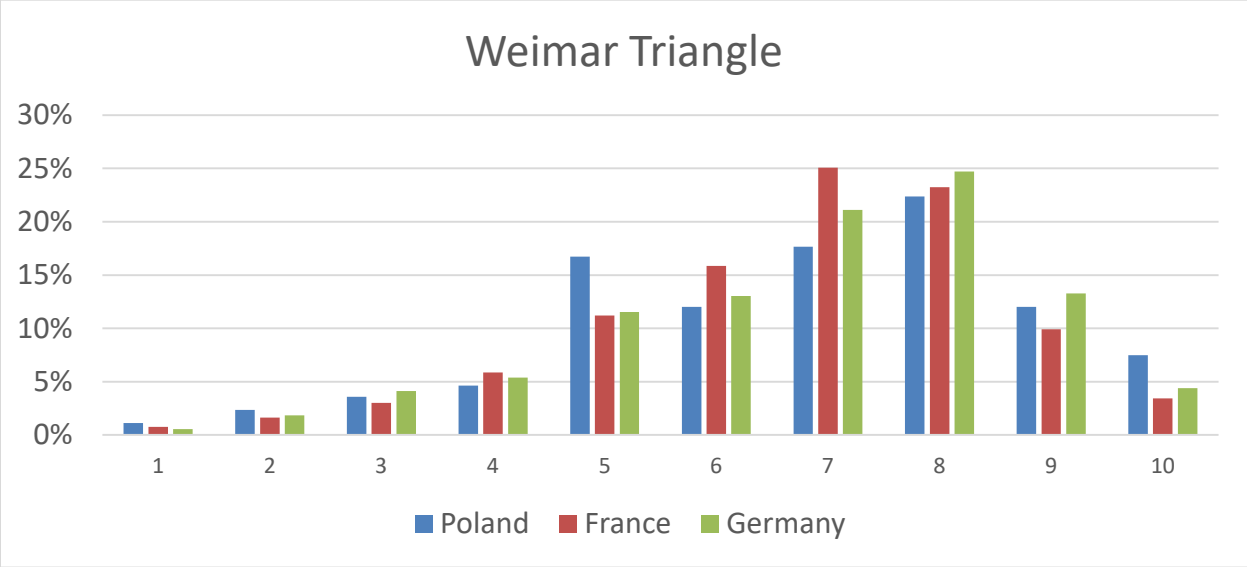


Source: own analysis of EQLS data.

If we compare HWB levels (static measure) for each member country of the Weimar Triangle (see Fig. 7), and then sum up a share of higher levels (from 6 to 10), the ranking of the countries is the same as the ranking based on subjective well-being (S): France (77.5%) in front of Germany (76.5%), and Poland (71.6%). There is some change in this order only when we use dynamic HWB measured by mobility index (see Table 9). In such a case Poland (0.061560) is placed higher than France (0.064691) and Germany (0.072041). It means that the subjective and objective evaluations of well-being fit the best each other for Poland. Similarly to the Visegrád Group's countries, the highest mobility is in life dimension and the most significant difference between

movements from higher S to lower Q (S > Q) and from lower S to higher Q (S<Q) for each country is in health and education dimensions.

Fig. 7: **HWB Comparison for the Weimar Triangle**



Source: own analysis of EQLS data.

Table 9: **Mobility index for the Weimar Triangle**

Poland						
Mobility index	Total	1 Life	2 Health	3 Education	4 Social Relationships	5 Income
ind S>Q (HWB index)	0.061560	0.121389	0.058918	0.047025	0.113649	0.079355
ind S<Q	0.133529	0.134884	0.142808	0.159678	0.114009	0.126759
ind Total	0.195089	0.256273	0.201726	0.206703	0.227659	0.206114
Germany						
Mobility index	Total	1 Life	2 Health	3 Education	4 Social Relationships	5 Income
ind S>Q (HWB index)	0.072041	0.092650	0.058917	0.051236	0.106063	0.087621
ind S<Q	0.115248	0.136478	0.122974	0.151954	0.095521	0.108755
ind Total	0.187288	0.229128	0.181891	0.203190	0.201584	0.196376
France						
Mobility index	Total	1 Life	2 Health	3 Education	4 Social Relationships	5 Income
ind S>Q (HWB index)	0.064691	0.103749	0.068900	0.053394	0.104437	0.076714
ind S<Q	0.126347	0.131796	0.142862	0.149918	0.097752	0.114776

ind Total	0.191038	0.235544	0.211762	0.203312	0.202189	0.191490

Source: own analysis of EQLS data.

Ranking based on GDP *per capita* confirms the tendency that well-being in Poland is lower compared to France and Germany. This time, however, well-being in Germany is higher than in France (see Table 10).

Table 10: **GDP *per capita* for the Weimar Triangle**

GEO/TIME	2013	2014	2015	2016	2013-2016
Germany (until 1990 former territory of the FRG)	33 200	34 700	36 100	36 000	**35 000**
France	29 000	29 600	30 600	30 400	**29 900**
Poland	17 900	18 600	19 800	19 900	**19 050**

Source: Eurostat.

The general ranking of member countries, both for the Visegrád Group and the Weimar Triangle, regarding different measures of well-being is summarised in Table 11.

Table 11: **General ranking of countries**

Type of well-being measurement	Visegrád Group	Weimar Triangle
Subjective well-being (S)	PL > CZ = HU > SK	FR > DE > PL
Aggregated objective well-being (e_i)	PL > SK > CZ > HU	FR > PL > DE
Static HWB = min (Q, S)	PL > HU > SK > CZ	FR > DE > PL
Dynamic HWB = mobility index	PL > SK > HU > CZ	PL > FR > DE
GDP *per capita*	CZ > SK > HU > PL	DE > FR > PL

Source: own analysis of EQLS data.

We can see that among the Weimar Triangle's countries Poland occupies the lowest position except for dynamic HWB and aggregated objective well-being (e_i). Static HWB complies with both subjective well-being (S) and well-being measured as GDP *per capita*. However, dynamic HWB delivers additional information concerning subjective – objective evaluation fit, which changes the country ordering in favour of Poland. More significant changes were noticed within the Visegrád Group. Poland is in front of the other Visegrád Group's countries regarding all measures of well-being except for GDP *per capita*.

5. Limitations, possible solutions, and clarifications

What are the pros and cons of the analysis presented in this paper? First of all, an ability to combine two kinds of information: subjective evaluation of happiness (S) and objective, calculated well-being assessment (Q) into one outcome. Secondly, the assumption that hybrid well-being (HWB) takes the minimum value of S or Q enables us to be sensitive to the problem of adaptation and autonomy. If people feel worse than they in fact are according to the calculated value of well-being, then the HWB index gives priority to their feelings. In such a case their autonomy is highlighted. However, if their happiness is higher than their objective well-being allowed, then the HWB index gives priority to objective well-being. Thirdly, the approach developed in the present study provides us with a precise measure of the differences occurring between S and Q on the one hand, and S and HWB on the other hand. The movement from higher S to lower Q can be calculated by the mobility index. Fourthly, our proposed measure of HWB meets some of the criteria of the good well-being measure for policy purposes stated by Dolan and Peasgood (2008: 58). HWB is conceptually appropriate (i.e. is a complete measure of prudential value) because it attempts to combine both subjective and objective components of well-being. The HWB index can be used as an indicator to compare HWB in time and across different populations (e.g. communities, countries, etc.). Thus it seems to be a valid measure. HWB is also sensitive to the satisfaction paradox and satisfaction dilemma (Boelhouwer, Noll 2014: 4437). Last but not least, it is a reasonably useful tool for collecting and calculating data, which means it is empirically valuable. Fifthly, although the approach adopted in this study is data-driven, it also referred to a philosophical background. People's actual feelings and actions should be taken into consideration. At the same time, we have to be aware of normative reasons justifying the objective list of personal goods. A combination of normativity with empirical views sensitise researchers to the problems of well-being, which itself is both normative and positive in nature. Finally, our approach is suitable for cross-countries comparisons as was shown in section fourth.

Even though an HWB analysis has significant advantages, it is not free of weaknesses. Some objections could be related to (1) the theoretical framework, (2) the quality of empirical data, and (3) the calculation procedure.

First and foremost, critics may doubt that Nussbaum's objective list theory is the proper basis for the analysis. Next, they can object to ascribing particular variables to each of the ten dimensions

indicated by Nussbaum. The reasons behind choosing Nussbaum's theory were its generality and clarity. At the same time, we want to stress that the strategy of creating objective lists is becoming more and more popular among researchers (Alkire 2002; Cummins 2000). To carry out the calculation, we used previously collected data. Thus, not all selected variables fitted Nussbaum's list perfectly.

The second objection relates to the data gathered in the survey regarding personal self-evaluation of happiness. It seems evident that the context in which people were asked to evaluate their happiness could affect their answers. For instance, the view of a person in a wheelchair or experiencing lousy weather at the moment of completing the survey might have influenced the respondent's answers. Nevertheless, there is no agreement between scholars whether such kind of contextual dependence makes the questionnaire survey unusable or uninformative (Alexandrova 2017: XXVI, XXVII).

Another criticism could be directed at the HWB formula, in particular at the fact that we decided to take a minimum value of S or Q, and not the maximum value or the sum of both values. As far as the minimum approach is concerned, the choice was driven by the aspiration to pay attention to two main problems of well-being theories – autonomy and adaptation.

Perhaps it is reasonable to consider the introduction of a different system of weights into the aggregation formula and different form of a membership function to the well-being sphere. It would be particularly valuable to specify weights in an expert manner or based on preferences studies regarding factors affecting well-being or quality of life. Due to the fact that there is no commonly accepted method of aggregating the symptoms of well-being, it would be advisable to consider the stability of the results (in the comparative analysis) for several selected ways of aggregation.

6. Summary

Our primary objective was to show some possibility of building the hybrid version of well-being, its operationalisation, and attempt to conduct comparative studies based on the hybrid version of well-being measure. In order to perform it, two measures of HWB have been proposed: the first, the formula HWB = min(S, Q), when S is a subjective state of happiness and Q is the calculated measure of objective well-being; the second, HWB as the mobility index, when S > Q. Then,

outcomes for Poland were compared to other member countries of the Visegrád Group and the Weimar Triangle. All countries were compared with respect to the evaluation of happiness, the aggregated objective well-being (e_i), and GDP *per capita* to show broader relationships of HWB to other well-being measures. As far as the static measure of HWB = min(S, Q) is concerned, Poland had the highest position in the Visegrád Group and the lowest in the Weimar Triangle. Regarding dynamic HWB measured by the mobility index, Poland exceeded all countries from the Visegrád Group and the Weimar Triangle. It seems that the hybrid well-being measure is a valuable tool in collecting vital information regarding subjective – objective well-being evaluation fit.

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