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LIVING STANDARD AND QUALITY OF LIFE IN THE EU AND THE MEMBERSHIP CANDIDATE COUNTRIES

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Abstract. In this paper living standards and quality of life in 32 European countries are described and discussed. To express living standards, both Gross domestic product per head of population in purchasing power parities (GDPpcPPP) and the Human development index (HDI) from the UNDP, consisting of GDPpcPPP, life expectancy at birth and an education index are used. Quality of life is expressed by the Quality of life index (QLI) from the Economist and consists of 9 different aspects. Furthermore, the author investigated the possible importance of the income distribution for GDP pc and HDI. The results of some statistical calculations showed that there are high and positive correlations between GDP pc, life expectancy at birth and an education variable. Because of the construction of HDI, even the correlations between these variables and the index are high. Furthermore the rankings between the 32 countries, regarding HDI, GDP pc PPP and QLI have high and positive correlations. How important is income distribution? While the correlations between different income distribution variables are high and have the expected signs, the correlations between income distribution on one hand and GDP pc and HDI on the other hand had the expected signs, but are not significant.

Key words: Living standard, quality of life, Human Development Index, Quality of Life Index, rankings of countries, income distribution, correlation coefficients

INTRODUCTION

Both the level and growth of GDP are in the international public debate often used as expressions of performance of national economies. Though GDP is a measure of production[1] and not of welfare [e.g. Wolf & Vogel 2004], usually – at least implicitly – a parallel development of GDP and welfare is assumed [Johnson 1990]. Furthermore,

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[1] Only production which is sold and bought on markets or produced in the public sector and therefore measured with the help of National Accounts, is included in GDP.

GDP, divided by the number of inhabitants and measured in purchasing power parities (GDPpcPPP) is used to express average livings standards in a country [European Economy, No 54, 1993]. According to the World Economic Forum [WEF, 2002, p. 2] high and rising standards of living for the citizens can be seen as one of the consequences of a country´s international competitiveness. One of the goals of the Lisbon Agenda for the European Union is "... to become the most competitive... economy in the world..." [Presidency... 2000).

The purpose of this paper, which is strongly inspired and influenced by Koreleski [2007], is firstly to investigate the level of average living standard in the member countries of the EU, completed with the membership candidate countries and some potential future candidates (in total 32 countries). With other words, the paper has a European perspective[2]. Average living standard is expressed by GDP per head of population, measured in purchasing power parities (GDP pc). Secondly, even the Human Development Index (HDI), which is a summary of GDP pc, life expectancy at birth and an education index, is presented. According to the author of this paper, HDI can be seen as a measure of living standard, perhaps in a more comprehensive form than GDP pc. While GDP pc can be seen as an absolute measure, the HDI is more of a relative method of comparison between countries [Koreleski 2007, Schuller 2008]. Because GDP pc is included in HDI, it is expected that some relations between these two variables can be found.

Thirdly we will even have a look at the Quality of Life Index (QLI) presented by The Economist [Koreleski 2007, The Economist… 2006, 2007]. Finally, we will compare the above mentioned countries with respect to the following three variables regarding their mutual rankings: (1) GDP pc, (2) HD), and (3) QLI, and investigate whether some statistical relations are existing.

Assume that two countries have the same level of GDP pc. Yet depending on the income distribution between citizens, the average standard of living, expressed in HDI can be different. Probably even the QLI can be different between countries with the same level of GDP pc, but different income distributions. Later on in this paper we will have a look at some variables which can describe the income distribution. We will even investigate, whether relations between standard of living and income distribution can be found.

The method of this paper consists of the quantitative presentation of the above mentioned variables and its interpretation. Furthermore, some correlations are estimated and discussed. To describe the variables quantitatively, two main sources have been used: The Human Development Report [United Nations Development Programme 2007–2008; UNDP 2007] and The Economist Intelligence Unit [2007]. Even OECD statistics have been used as a completion; only 19 of the 32 countries are members of the OECD.

The paper is organized in the following way. After the introduction, in section 2 the countries and variables are presented. Section 3 shows the figures for GDP pc and HDI. Section 4 presents the Quality of life index. In section 5, rankings for the 32 countries regarding HDI, GDP pc and QLI are presented. Section 6 shows some variables to describe the income distribution. Finally, section 7 consists of the conclusions.

[2] This can even be seen as a limitation.

COUNTRIES AND VARIABLES

Having a European perspective and depending on the access to quantitative figures, the following countries are included in the sample:

(1) EU 27[3],
(2) Membership candidate countries: Croatia, Macedonia, Turkey,
(3) Future candidate countries: Bosnia & Hercegovina, Albania[4].

The following variables, describing living standard and life quality, are used.

– *GDP pc in purchasing power parities* (*GDPpcPPP*). A common method to compare average standard of living in different countries is to make use of GDPpcPPP[5]. Purchasing power parities are used to eliminate price level differences between countries. In countries with low GDP pc (poor countries), goods and services produced for domestic consumption – and not traded internationally – have usually low prices, compared with richer countries. Therefore, there are often large differences in poor countries between GDP measured in exchange rates and measured in PPP[6]. Yet there are some problems. At least a part of the differences in price levels depends on different levels of quality. Furthermore, when countries have different levels of economic openness – defined as exports and imports relative to GDP – PPP could be misleading: imports have to be paid in exchange rates and not in PPP.
– *The Human Development Index* (*HDI*), presented by the United Nations Development Programme [UNDP 2007]. This index consists of three different parts: (1) Life expectancy at birth, (2) A summary of the Adult literacy rate (%) and the Combined gross enrolment ratio (%), and (3) GDP per capita (PPP US$). To calculate the HDI, some limitations are introduced for the different variables: Life expectancy has a maximum value of 85 years and a minimum value of 25[7]. There is no country in our sample which has higher maximum or lower minimum value. The Adult literacy rate and the Combined gross enrolment ratio have maximum values of 100% and minimum values of 0%. While there is no country in our sample regarding the Adult literacy rate and the Gross enrolment ration with a minimum value of 0%, for many countries it is assumed schematically that the Adult literacy rate is 99%. Regarding the Combined gross enrolment ratio, in our sample Finland and Denmark are above 100%. Finally, for GDP pc a maximum value of 40 000 and a minimum value of 100 is set. In our

[3] Ireland, Sweden, Netherlands, France, Finland, Spain, Denmark, Austria, United Kingdom, Belgium, Luxembourg, Italy, Germany, Greece, Slovenia, Cyprus, Portugal, Czech Republic, Malta, Hungary, Poland, Slovakia, Lithuania, Estonia, Latvia, Bulgaria, Romania.

[4] Even Serbia, Montenegro and Kosovo can be mentioned as future membership candidates. In our sources quantitative figures could not be found. In total, the sample consists of 32 European countries, which are ranked in the tables according to the HDI.

[5] In the paper, GDP pc is always measured in purchasing power parities.

[6] In 2005, in Poland, GDP in exchange rates was 303,2 billion US$, while GDP in PPP was 528,5 billion US$ [UNDP 2007]. Though Poland belongs in the statistics of the UNDP to the countries with high human development, in a European perspective it is seen as "poor".

[7] Furthermore, the GDP pc are expressed in log terms.

sample, Luxembourg is above the maximum level (with 60 228)[8]. In the HDI, each of the three parts has a weight of 1/3[9].

– *The Quality of Life Index* (*QLI*), presented by The Economist (2006, 2007). The QLI is a summary of 9 different aspects. (1) Cost of living, (2) Leisure and culture, (3) Economy, (4) Environment, (5) Freedom, (6) Health, (7) Infrastructure, (8) Risk and safety, (9) Climate.

Both GDP pc and HDI give a picture of the average standard of living. The populations in two countries with the same level of GDP pc could have different standards of living, if the income distributions are different. The following variables express the income distributions in our countries: (1) the Gini coefficient, (2) the relation between the 10 percent richest and the 10 percent poorest regarding income or consumption, (3) female income relative to male income, and (4) female economic activity relative to male economic activity.

Some comments can be mentioned regarding the nature of GDP and GDP pc. While journalists and politicians often see GDP pc as a measure of welfare and construct welfare rankings between countries based on relative positions regarding GDP pc, economists usually see GDP and GDP pc in a different way [Vogel, Wolf 2004]. These measures are calculated within National Accounts and show the value of total production, total value added and total national income [OECD… 2008]. Furthermore, all production and incomes which are not registered in National Accounts[10], are not included in GDP. When a country is in transition from production for own use to market production, high rates of growth of GDP can be observed because what was produced before in the private households and farms now is produced for markets. On the other hand, GDP pc, expressed in PPP, is often used as a measure of – average – standard of living [European Economy 1993]. Probably though the relation between *material* standard of living and welfare is not straight forward, it is possible that on average people with high standard of living even perceive a relative high level of personal welfare.

Some member countries in the EU, like Ireland and Luxembourg, have large capital inflows. As a consequence, capital returns are flowing from these countries to the rest of the world, which means that national income should be described as GNI[11]. In 2006, GNI in Ireland was 18 percent lower than GDP, while in Luxembourg GNI was 14 percent lower than GDP [OECD, National Accounts, 2008]. Word Economic Forum [2007] describes Irish national income as GNI.

Finally, including even health and education aspects, perhaps HDI is a more comprehensive measure of average standard of living and even individual welfare than GDP pc. Furthermore, the Quality of life Index is in this paper used as a relative measure of personal welfare. Probably, the QLI is more subjective than both HDI and GDP pc.

[8] No country in the total sample (177 countries) has a value of 100 US$ PPP or lower.

[9] For a detailed presentation of the calculations, see UNDP (2007), p. 356. For a discussion of the HDI in its earlier versions, see Trabold-Nübler, 1991.

[10] E.g. the ”informal” economy and what is produced in private households for own consumption.

[11] GNI is defined as GDP + net factor incomes from abroad (wages and capital return), which in the case of these countries is negative.

GDP PC AND HDI

Because the figures for GDP pc and HDI are both chosen from UNDP (2007), in this section we present figures for these variables. The 32 countries are ranked according to the HDI within the EU, including the candidate and the future candidate countries.

Table 1. Human Development Index (HDI) and Gross Domestic Product per capita (GDP pc) for 27 EU members, 3 candidate countries and 2 future candidate countries, 2005
Tabela 1. Wskaźnik Rozwoju Społecznego oraz Produkt Krajowy Brutto per capita dla 27 państw członkowskich UE, 3 państw kandydackich oraz 2 przyszłych państw kandydackich, w 2005 roku

Country	HDI	Rank HDI EU	GDPpc PPP	Rank GDP pc EU
Ireland	0.959	1	38 505	2
Sweden	0.956	2	32 525	7
Netherlands	0.953	3	32 684	6
France	0.952	4	30 386	10
Finland	0.952	5	32 153	8
Spain	0.949	6	27 169	13
Denmark	0.949	7	33 973	3
Austria	0.948	8	33 700	4
UK	0.946	9	33 238	5
Belgium	0.946	10	32 119	9
Luxembourg	0.944	11	60 228	1
Italy	0.941	12	28 529	12
Germany	0.935	13	29 461	11
Greece	0.926	14	23 381	14
Slovenia	0.917	15	22 273	16
Cyprus	0.903	16	22 699	15
Portugal	0.897	17	20 410	18
Czech Republic	0.891	18	20 538	17
Malta	0.878	19	19 189	19
Hungary	0.874	20	17 887	20
Poland	0.870	21	13 847	24
Slovakia	0.863	22	15 871	21
Lithuania	0.862	23	14 494	23
Estonia	0.860	24	15 478	22
Latvia	0.855	25	13 646	25
Croatia	0.850	26	13 042	26
Bulgaria	0.824	27	9 032	28
Romania	0.813	28	9 060	27
Bosnia+Herzegovina	0.803	29	7 032	31
Albania	0.801	30	5 316	32
Macedonia	0.801	31	7 200	30
Turkey	0.775	32	8 407	29

Rank HDI EU: The countries are ranked compared with the EU 27, the candidates and the future candidates. In the total ranking of the UNDP (177 countries), Ireland is on position 5.
Rank GDP pc EU: Even here the countries are ranked within the EU, the candidates and the future candidates.
Source: UNDP, 2007.
Źródło: UNDP, 2007.

As Table 1 illustrates, the relative differences between the countries regarding the HDI are much smaller than the ones regarding the GDP pc. This could be explained in part by the method of calculating the HDI, where GDP pc is expressed in log terms, but not the other variables.

The UNDP has divided the 177 countries in three groups: (1) High Human Development (70 countries), (2) Medium Human Development (85 countries), and (3) Low Human Development (22 countries). While Turkey is ranked in the group of countries with medium human development, all other EU members, candidates and future candidates can be found in the group of high human development.

As mentioned above, GDP pc is one of the variables in the HDI. In the Table 2, the Pearson correlation coefficients between HDI, GDP pc, Life expectancy at birth and Combined gross enrolment ratio are presented.

Table 2. Pearson correlation coefficients: Human Development Index, GDP pc, Life Expectancy at Birth, Combined Gross Enrolment Ratio

Tabela 2. Współczynniki korelacji Pearsona: Wskaźnik Rozwoju Społecznego, PKB per capita, oczekiwana długość życia, wskaźnik skolaryzacji brutto

	HDI	GDPpc	Life Expectancy at Birth (LEB)
GDPpc	0.874		
p-value	0		
LEB	0.834	0.709	
p-value	0	0	
CGER	0.846	0.639	0.513
p-value	0	0	0.003

The correlation coefficients are calculated with the figures presented in table 1 as the base.
CGER: Combined gross enrolment ratio.
The Adult literacy rate was omitted, because for many countries no exact figures are presented in the source.
Source: Author's research.
Źródło: Opracowanie własne.

The high and positive correlation coefficients between HDI, GDP pc and Life expectancy at birth are of course no surprise. More interesting are the relative high correlation coefficients between GDP pc on one hand and Life expectancy at birth and Combined gross enrolment ratio. In our sample of countries, those ones with high GDP pc have even a long life expectancy at birth and a high level of education. Seeing life expectancy at birth as a variable, which expresses the health of the population, two interpretations are possible: (1) In a country with a high level of GDP pc the population can afford a good level of health and education (2) When the population in a country is healthy and well educated, human capital and productivity will be high and therefore even GDP pc.

THE QUALITY OF LIFE INDEX

In this section we present the figures, describing the Quality of Life index (QLI).

A visual inspection of Table 3 shows, that countries like Malta and Croatia are ranked on unexpected high positions. On the other hand, Ireland has a quite low position in the QLI ranking.

Table 3. The Quality of Life Index, 27 EU members, 3 candidate and 2 future candidate countries, 2006

Tabela 3. Wskaźnik Jakości Życia dla 27 państw członkowskich UE, 3 państw kandydackich oraz 2 przyszłych państw kandydackich, w 2006 roku

	QLI	QLI 2	Rank		QLI	QLI 2	Rank
France	88	100	1	Greece	71	81	17
Denmark	85	97	2	Slovenia	71	81	18
Austria	83	94	3	Czech Republic	70	80	19
Sweden	81	92	4	Poland	70	80	20
Finland	80	91	5	Hungary	69	78	21
Italy	79	90	6	Ireland	68	77	22
Netherlands	78	89	7	Lithuania	68	77	23
Luxembourg	78	89	8	Romania	67	76	24
Malta	78	89	9	Slovakia	67	76	25
Spain	78	89	10	Bulgaria	66	75	26
Portugal	77	88	11	Estonia	66	75	27
UK	76	86	12	Latvia	65	74	28
Belgium	75	85	13	Albania	64	73	29
Germany	74	84	14	Macedonia	63	72	30
Croatia	73	83	15	Turkey	62	70	31
Cyprus	71	81	16	Bosnia and Herzegowina	58	66	32

QLI: Quality of Life Index.
QLI2: Quality of Life index with France = 100
Source: The Economist, 2006 and 2007.
Źródło: The Economist, 2006 and 2007.

RANKINGS FOR GDP PC, HDI AND QLI

Because GDP pc, HDI and QLI are expressed in very different dimensions, in this section we compare the rankings of the countries regarding the three variables (Table 4). The 32 countries are ranked according to the HDI.

Table 4. Rankings for Human Development Index (HDI), Gross Domestic Product per capita in PPP (GDP pc), and Quality of Life Index (QLI), 27 EU members, 3 candidate, 2 future candidate countries

Tabela 4. Rankingi dla Wskaźnika Rozwoju Społecznego, Produktu Krajowego Brutto per capita oraz Wskaźnika Jakości Życia dla 27 państw członkowskich UE, 3 państw kandydackich oraz 2 przyszłych państw kandydackich

	HDI Rank	GDP pc Rank	QLI Rank
1	2	3	4
Ireland	1	2	22
Sweden	2	7	4
Netherlands	3	6	7
France	4	10	1

Table 4 – continued

1	2	3	4
Finland	5	8	5
Spain	6	13	10
Denmark	7	3	2
Austria	8	4	3
UK	9	5	12
Belgium	10	9	13
Luxembourg	11	1	8
Italy	12	12	6
Germany	13	11	14
Greece	14	14	17
Slovenia	15	16	18
Cyprus	16	15	16
Portugal	17	18	11
Czech Republic	18	17	19
Malta	19	19	9
Hungary	20	20	21
Poland	21	24	20
Slovakia	22	21	25
Lithuania	23	23	23
Estonia	24	22	27
Latvia	25	25	28
Croatia	26	26	15
Bulgaria	27	28	26
Romania	28	27	24
Bosnia and Herzegovina	29	31	32
Albania	30	32	29
Macedonia	31	30	30
Turkey	32	29	31

Source: See tables 1 and 3.
Źródło: Jak w tabelach 1 i 3.

With some exceptions, it seems that countries which are on a high position, regarding HDI are even highly ranked, regarding GDP pc and QLI. In the next table, we present the Pearson correlation coefficients for the rankings of the 32 countries in the three variables.

Table 5. Pearson correlation coefficients: HDI rank, GDP pc rank, QLI rank, 32 countries
Tabela 5. Wskaźniki korelacji Pearsona: Wskaźnik Rozwoju Społecznego, Produkt Krajowy Brutto, Wskaźnik Jakości Życia dla 32 państw

	HDI Rank	GDP pc Rank
GDP pc Rank	0.941	
QLI Rank	0.829	0.807

Source: See tables 1–4.
Źródło: Jak w tabelach 1–4.

The correlation coefficients can be interpreted in the following way: (1) countries which are highly ranked in HDI, are even highly ranked in GDP pc and QLI, (2) Countries, which are on low ranking positions regarding HDI, are even on low ranking position regarding GDP pc and QLI. Of course, the high correlation coefficient of HDI and GDP pc is no surprise, because GDP pc is included in HDI.

Relating to the discussion in which way GDP pc can express welfare or not [Vogel, Wolf 2004; Beyond GDP 2007], the high correlation coefficient for GDP pc and QLI is somewhat of a surprise. Countries with a high ranking position in GDPpc, are even highly ranked in QLI[12].

DOES INCOME DISTRIBUTION MATTER?

Obviously, GDP pc is measuring the arithmetic average national income per head of population. Nothing, yet, is said about the income distribution. It could be possible, that two countries with the same GDP pc have different levels of life expectancy and education, so that there are differences between the HDI of the countries. One way of describing the differences in income distribution would be to present besides of the average (mean) even the median (for a discussion of the importance of income distributions between countries for economic level and development, see e.g. Weil, 2009).

While the USA in 2005 had the second highest GDP pc [UNDP 2007], many countries – both European and non-European had higher life expectancy at birth[13]. Even the education index in quite a few European and non-European countries is higher than in the USA [UNDP 2007]. This situation cannot be explained with expenditures; according to the UNDP [2007] in 2004 the USA had the highest expenditures for health care among 177 countries [UNDP 2007]. Even regarding public expenditures for education, the USA is on a quite high level [UNDP 2007]. An explanation for the not very impressing performance of the USA regarding health and education could be the more unequal income distribution compared with Europe[14].

Having no data for the median, in this section we will describe the income distribution in the 32 countries by presenting the Gini coefficient (Gini) and the relation between income or consumption of the 10 percent richest to the 10 percent poorest (10R–10P). Furthermore, we will even present figures describing some gender aspects of the income distribution: the relation between female and male incomes (F/Minc) and the relation between female and male economic activity (F/M%). The figures are presented in Table 6[15].

[12] The author yet does not want to overexploit this statistical relation. A possible explanation could be the choice of year. Even the sample of countries can be a possible explanation.

[13] Regarding the HDI, the USA is on position 12. QLI gives the USA a rank of 13 (2005) and of 7 (2006), respectively.

[14] The Gini coefficient in the USA is 40.8, while the relation income or consumption of the 10 percent richest to the 10 percent poorest is 15,9. These figues can be compared with the ones in Table 6.

[15] If the relation between F/Minc and F/M% is – as can be shown by using the figures in Table 6 – below 1, this could be interpreted as a sign of female discrimination in the economy.

Table 6. Income distribution in 32 countries in Europe
Tabela 6. Rozkład dochodów w 32 państwach europejskich

Rank EU HDR	Country	HDI	GDP pc	Gini	10R–10P	F/Minc	F/M%
1	Ireland	0.959	38 505	34.3	9.4	0.53	74
2	Sweden	0.956	32 525	25.0	6.2	0.81	87
3	Netherlands	0.953	32 684	30.9	9.2	0.64	77
4	France	0.952	30 386	32.7	9.1	0.64	79
5	Finland	0.952	32 153	26.9	5.6	0.71	86
6	Spain	0.949	27 169	34.7	10.3	0.50	66
7	Denmark	0.949	33 973	24.7	8.1	0.73	84
8	Austria	0.948	33 700	29.1	6.9	0.46	76
9	UK	0.946	33 238	36.0	13.8	0.66	80
10	Belgium	0.946	32 119	33.0	8.2	0.55	73
11	Luxembourg	0.944	60 228	30.8	7.7	0.51	69
12	Italy	0.941	28 529	36.0	11.6	0.47	62
13	Germany	0.935	29 461	28.3	6.9	0.58	77
14	Greece	0.926	23 381	34.3	10.2	0.55	67
15	Slovenia	0.917	22 273	28.4	5.9	0.61	80
16	Cyprus	0.903	22 699	xxx	xxx	0.60	76
17	Portugal	0.897	20 410	38.5	15.0	0.59	79
18	Czech Republic	0.891	20 538	25.4	5.2	0.51	77
19	Malta	0.878	19 189	xxx	xxx	0.50	49
20	Hungary	0.874	17 887	26.9	5.5	0.64	73
21	Poland	0.870	13 847	34.5	8.8	0.6	78
22	Slovakia	0.863	15 871	25.8	6.7	0.58	76
23	Lithuania	0.862	14 494	36.0	10.4	0.69	82
24	Estonia	0.860	15 478	35.8	10.8	0.62	80
25	Latvia	0.855	13 646	37.7	11.6	0.65	77
26	Croatia	0.850	13 042	29.0	7.3	0.67	74
27	Bulgaria	0.824	9 032	29.2	7.0	0.65	78
28	Romania	0.813	9 060	31.0	7.5	0.69	80
29	Bosnia+Herzegovina	0.803	7 032	26.2	5.4	0.66	86
30	Albania	0.801	5 316	31.1	7.2	0.54	70
31	Macedonia	0.801	7 200	39.0	12.5	0.48	63
32	Turkey	0.775	8 407	43.6	16.8	0.35	36

xxx: No figures for Malta and Cyprus
While HDI and GDP pc are from 2005, the income distribution figures are from different years.
Gini: Gini coefficient, here expressed as figures between 0 and 100.
10R–10P: the relation between the income or consumption of the 10 percent richest to the 10 percent poorest.
F/Minc: the relation of female to male incomes; here expressed as figures between 0 and 1.
F/M%: the relation of female economic activity to male economic activity; here expressed as figures between 0 and 100.
Source: UNDP, 2007.
Źródło: UNDP, 2007.

Though it is not easy to see systematic tendencies, it seems that poorer countries often have somewhat more unequal income distributions than richer ones[16], e.g. Turkey has the most unequal income distribution, both measured with the Gini coefficient and the relation 10R–10P. The Northern EU members have quite high GDP pc and equal income distributions and relatively high female incomes and economic activities.

In the next table (Table 7) the Pearson correlation coefficients between the HDI, GDP pc and the income distribution variables are presented.

Table 7. Pearson correlation coefficients: HDI, GDP pc, Gini, 10R–10P, Female income, percent of male (F/Minc), Female economic activity, percent of male (F/M%)

Tabela 7. Wskaźniki korelacji Pearsona: Wskaźnik Jakości Życia, Produkt Krajowy Brutto per capita, Gini, stosunek 10 najbogatszych do 10 najbiedniejszych, R–10P, dochód kobiet, udział mężczyzn, aktywność zawodowa kobiet, udział procentowy mężczyzn

	HDI	GDPpc	Gini	10R–10P	F/Minc
GDPpc	0.874				
p-value	0				
Gini	–0.245	–0.196			
p-value	0.191	0.3			
10R - 10P	–0.145	–0.108	**0.918**		
p-value	0.444	0.569	**0**		
F/Minc	0.148	0.004	**–0.498**	–0.396	
p-value	0.417	0.983	**0.005**	**0.03**	
F/M%	0.296	0.147	**–0.612**	**–0.562**	**0.807**
p-value	0.1	0.422	**0**	**0.001**	**0**

Significant (at least on the 5% level) coefficients in **bold figures**.
Explanations of variables and source: see table 6 and before.
Source: See tables 1–4.
Źródło: Jak w tabelach 1–4.

As table 7 illustrates, the correlation coefficient between GDP pc and HDI is the same as before. The signs of both the correlation coefficients for HDI and the Gini coefficient and the 10R–10P relations are certainly negative, but not significant. The correlation coefficients between HDI and F/Minc and F/M% are positive but not significant either.

The signs of the correlation coefficients between GDP pc and the income distribution variables are the same as between the last mentioned variables and HDI, but the levels of significance are even lower.

Regarding the correlation coefficients between the income distribution variables, the following observations can be made. All coefficients are significant. The correlation coefficient between Gini and 10R–10P is very high and positive. The correlation coefficients between F/Minc and F/M%, respectively, and Gini are negative, which could be interpreted in the following way: Relatively high (low) female incomes means a more equal (unequal) income distribution. Relatively high (low) female economic activity means a more equal (unequal) income distribution. Even the correlation coefficients between 10R–10P and F/Minc and F/M%, respectively, are negative, which is no surprise because

[16] ”Poor” and ”Rich” is expressed by GDP pc.

of the strongly positive correlation coefficient for Gini and 10R–10P. Finally the correlation coefficient between F/Minc and F/M% is strongly positive, which is no surprise: As higher the female economic activity, relative to the one of males, as higher female incomes, relative to males.

CONCLUSIONS

The paper describes the economic situation of the populations in 32 European countries (27 EU members, 3 EU candidates and 2 future EU candidates) with the help of three main variables: (1) Gross domestic product per head of population in purchasing power parities (GDPpcPPP), (2) the Human development index (HDI), and (3) the Quality of life index (QLI). GDP pc can be seen as an absolute measure of the standard of living in material terms, including the absolute differences between countries. While some critical points of view can be mentioned in connection with this measure, one of the advantages of it is the fact that many comparable calculations can be found in National accounts, both from national and international organisations. Even the HDI consists of quite objectively calculated variables. HDI gives yet a more relative measure of living standards in different countries. As the UNDP [2007] shows, the differences are quite small. There are at least three explanations for this. Firstly, the differences between countries regarding life expectancy and education are much smaller than the ones in GDP pc. Secondly, it is not sure, that countries with higher GDP pc even have higher life expectancy and more education than countries with lower GDP pc. Thirdly, the way of including GDP pc in the HDI seems to lead to a quite low valuation of this part of the HDI.

While both GDP pc and HDI are based on quantitatively measurable figures, the QLI can be seen as a subjective measure of personal welfare in a country and therefore a suitable completion of the other two variables. The Quality of Life Index (QLI), published by the Economist, consists of 9 different aspects. This index compares countries in a relative way.

Depending on the method of calculation, there is a high and positive statistical correlation between GDP pc and HDI. Of course, even life expectancy at birth and education is highly correlated with HDI, because of the construction of this index. More interesting are the high and positive correlations between GDP pc on one hand and life expectancy and education on the other hand. This can be interpreted in two different ways: (1) countries with high GDP pc can afford a high level of health and education. (2) In countries with a high level of health and education, human capital and productivity are high and therefore even GDP pc.

The countries are ranked according to the three variables HDI, GDP pc and QLI. The correlation coefficients are positive and quite high, which can be interpreted in the following way. Countries, which are on high (low) ranks in the HDI, are even on high (low) ranks in the GDP pc and the QLI.

While the USA has a very high ranking in GDP pc (2 among 177 countries)[17], in HDI (12) and in QLI (13 in 2005 and 7 in 2006) the position of this country is lower. Therefore

[17] Often the high level of economic performance in the USA is explained with high productivity, defined as yearly output per worker. Another explanation is the fact that employment as percent of

we even had a look at the income distributions in the 32 countries. With the exception of Turkey, practically all countries in our sample have more equal income distributions than the USA. While correlations coefficients between different income distribution variables are quite high and have expected signs, no significant correlations could be found between income distribution and HDI and GDP pc, respectively.

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the population between 15 and 64 is quite high in the USA, compared with the EU15. Furthermore, an average employed person in the USA workes almost 200 hours more a year than in the EU15. This means, too, that productivity calculated as GDP per worked hour is not much lower in EU15 than in the USA (see more details in OECD, Factbook 2008). In fact, several EU15 countries have higher productivity per worked hour than the USA.

STANDARD I JAKOŚĆ ŻYCIA W UNII EUROPEJSKIEJ I KRAJACH STOWARZYSZONYCH

Streszczenie. W artykule poddano dyskusji i analizie standard życia oraz jakość życia w 32 państwach europejskich. W celu wyrażenia standardu jakości życia zastosowano Produkt Krajowy Brutto per capita wyrażony parytetem siły nabywczej oraz Wskaźnik Rozwoju Społecznego z UNDP, zawierający wspomniany wyżej wskaźnik PKB oraz oczekiwaną długość życia wraz ze wskaźnikiem solaryzacji. Jakość życia została wyrażona Wskaźnikiem Jakości Życia i zawiera 9 różnych aspektów. Co więcej, zbadano możliwy wpływ rozkładu dochodów na PKB per capita oraz Wskaźnik Rozwoju Społecznego. Wyniki obliczeń statystycznych wskazują wysokie i pozytywne korelacje pomiędzy zmiennymi: PKB per capita, oczekiwaną długością życia oraz wskaźnikiem skolaryzacji. Także rankingi 32 państw dotyczące Wskaźnika Rozwoju Społecznego, PKB per capita wyrażonego parytetem siły nabywczej oraz Wskaźnika Jakości Życia cechowały wysokie i pozytywne korelacje. Jak wysoce ważny jest rozkład dochodów? Podczas, gdy korelacje pomiędzy różnymi zmiennymi rozkładu dochodów są wysokie, korelacje pomiędzy rozkładem dochodów oraz PKB per capita i Wskaźnikiem Rozwoju Społecznego nie okazały się istotne.

Słowa kluczowe: standard życia, jakość życia, Wskaźnik Rozwoju Społecznego, Wskaźnik Jakości Życia, ranking państw, rozkład dochodów, wskaźniki korelacji

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