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# THE COMPARISON OF SOME SELECTED ELEMENTS OF LIVING STANDARD IN POLAND AND IN THE NEIGHBOURING COUNTRIES

## Introduction

Year by year the interest in such categories as welfare, standard of living, quality of life, living conditions, style of living, well-being and others grows. This interest can be explained by the specific transition from the stage of „fascination" of the system transformation to the stage of "reflection" over the transformation results. Living standards of the population in Poland and other European countries are strongly diversified territorially. Such diversity results from general socio-economic development of these countries, the level of GDP per capita and the level of urbanisation and education of the society. Undoubtedly, the basis of the economic development of the whole Europe should be the balanced and parallel economic development of all European countries. The comparative analysis of standard of living is essential from the point of view of socio-economic changes that took place in Poland as well as in other European countries after 1989.

The main aim of the paper is to compare selected elements of living standard of the population in Poland and in neighbouring countries, i.e. Germany, the Czech Republic, Slovakia, Ukraine, Belarus, Lithuania and Russia. Another important purpose of the study is to identify disproportions in standard of living between the analysed countries as well as to distinguish the groups of countries having similar living standards.

The research is based on empirical data obtained from the International Statistics Yearbook 2006 as well as from different web sites related to the European statistics. The latest available data were used to estimate standard of living. Different measures were used in the study, both partial and composite ones. While examining standard of living such social phenomena as: level of socio-economic development of a country, situation on the labour market, as well as housing, health, education, culture, recreation, material living conditions and safety were analysed. Choice of the particular measures was determined by their substantial value as well as by the supply of statistical information.

## 1. Partial measures of standard of living

The data used in this paper characterise the elements of living standard in Poland and in the neighbouring countries as well as their territorial variations. The variables defining standard of living were divided into six groups. Selection of variables for the study was based on the substantial and formal criteria. Measures representatives were chosen deliberately to represent different fields of life and to reflect in the possibly correct way standard of living in Poland on the background of information con-

cerning neighbouring countries. We tried to use accessible measures logically and in the way that the measures could supplement one another. Measures representatives related to the following groups of needs: housing, health, education, culture and recreation, material living conditions and social protection. Measures were expressed in natural units and they are treated as complementary. In each group of needs, different number of measures representatives was accepted: five in groups related to housing and health and four in the remaining groups. Altogether 26 measures representatives were used, of which the majority were stimulants and only six de-stimulants. In case of the latter, the lowest values of the indices are demanded.

## 1.1. Measures of living standard in the group of needs concerning housing

The dwelling is the important element determining standard of living. It plays essential role in everyday life of each family. Obviously, high living standard in the field of housing needs is determined by the fact that dwelling is fitted with numerous installations (like a water line-system, a lavatory, a bathroom, gas from a gas-line system, central heating and warm water). Unfortunately, the lack of complete data concerning this subject makes it impossible to analyse this kind of equipment within households.

To estimate the level of satisfying housing needs, the following diagnostic variables were chosen:

- the average number of persons per dwelling,
- the number of dwellings completed per 1,000 population,
- the average usable floor space of a dwelling completed in $m^2$,
- the average number of rooms in a dwelling completed,
- the share of expenditures on housing, water, electricity, gas and other fuels (see Table 1).

**Table 1**

**Measures of living standard in the field of housing needs in 2003**

| | Poland | Germany | Czech Republic | Slovakia | Lithuania | Ukraine | Belarus | Russia |
|---|---|---|---|---|---|---|---|---|
| The average number of persons per dwelling | 3.0 | 2.1 | 2.3[b] | 3.1 | 2.5 | – | – | – |
| The number of dwellings completed per 1,000 population | 4.3 | 3.2 | 2.4 | 2.6 | 1.3 | 1.3 | 2.9[a] | 3.0 |
| The average usable floor space of a dwelling completed in $m^2$ | 115.8 | 114.6[c] | 104.9 | 114.3 | 106.2 | 101.7 | 97.5[a] | 85.4 |

**Table 1 continued**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| The average number of rooms in a dwelling completed | 4.8 | 5.2 | 3.9 | 3.6 | 3.5 | – | – | 2.4 |
| The share of expenditures on housing, water, electricity, gas and other fuels | 24.4 | 23.8 | 21.8 | 26.0 | 13.6[b] | – | 8.8[a] | – |

[a] 2002, [b] 2001, [c] Residential floor space.

Source: Roczniki Statystyki Międzynarodowej (2007, pp. 227-233, 236-239).

The level of housing conditions is the function of usable value (the quality) of dwellings as well as quantitative degree of satisfaction of housing needs (the number of dwellings completed, the population and its density). That is why, the particular partial measures were selected. Data concern inhabited and uninhabited dwelling stocks in both residential and non-residential buildings. The smaller the number of persons per dwelling, the better housing situation of a given country is. In Poland, on the background of other countries examined, this index seems relatively favourable; it amounted to 3.0 persons per dwelling. The best situation can be noted in Germany, where the number of persons per dwelling amounted to 2.1.

Next three indicators concern the number of dwellings completed. Data concern dwellings completed in urban and rural areas, in buildings newly built, rebuilt and expanded from non-residential buildings. When it comes to the number of dwellings completed per 1,000 population the most favourable situation can be noted in Poland – this index amounted to 4.3, while in Germany it amounted to 3.2, which can be explained by far lower demand for dwellings in Germany than in Poland. The worst situation can be observed in Lithuania and Ukraine where the indicator amounted to 1.3 dwelling per 1,000 population. In the Czech Republic as well as in Slovakia the index examined amounted to 2.4 and 2.6 respectively.

The following indicator within the group of housing needs relates to the average usable space floor on a dwelling completed, so the higher the index the better. In 2003, Poland reached the highest level of that indicator amounting to 115.8 $m^2$. The second position was taken by Germany with 114.6 $m^2$ (but one should mention that in case of Germany the available data concern only residential space floor so in fact the index would be higher if the usable space floor was included). A relatively high level of this indicator among countries examined characterises Slovakia – it was 114.3 $m^2$. Russia as well as Belarus had the lowest indices – 85.4 $m^2$ and 97.5 $m^2$ respectively.

To estimate housing conditions one could also use the measure of the average number of rooms in a dwelling completed. In case of this index, the situation seems the best in Germany, where it amounted to 5.2 rooms in 2003. In Poland this index was lower and amounted to 4.8 but still it was relatively high in comparison to other

countries. The measure in question was the lowest in Russia (2.4), which means the smallest dwellings completed in 2003 within the analysed group of countries. One should mention that the basic relation between the index of the average number of rooms in a dwelling completed and standard of living is positive. The higher the index, the higher degree of satisfaction of housing needs. In 2003 in Lithuania, the Czech Republic and Slovakia, the indicator ranged from 3.5 to 3.9 rooms in a dwelling completed.

The last of indices examined in this group determines the share of expenditures on housing, water, electricity, gas and other fuels in the general structure of consumption expenditures. It should be stressed that these expenditures are rather fixed and indispensable. A high share of these expenditures causes some limitations of expenses in other groups. The highest share of expenditures on housing, water, electricity, gas and other fuels in 2003 was witnessed in Slovakia (26%). The next position was taken by Poland with the indicator amounting to 24.4% and Germany having the index level of 23.8%. A low share of these expenditures is typical for the CIS states, particularly Belarus where the share of indispensable housing expenses amounted to 8.8% of total expenditures in 2002.

## 1.2. Measures of living standard in the field of health needs

Health, as one of the highest values in human life, makes a very important element of the population standard of living. While examining this specific group of needs, health status of population and healthcare as well as personal hygiene should be considered first.

Health status of population will be estimated through the following measures:
- life expectancy,
- the number of hospitals per 100,000 population,
- the number of beds in general hospitals per 100,000 population,
- the number of beds in psychiatric hospitals per 100,000 population,
- the incidence of tuberculosis per 100,000 population (see Table 2).

The indices mentioned above make it possible to compare the Polish population health status with health status in other neighbouring countries.

In 2003 life expectancy for the Polish inhabitants amounted to 70.5 years for men and 78.9 for women respectively. The year 2003 was the thirteenth in turn, in which uninterrupted growth of the average length of life was observed (in comparison to 1990 the life expectancy for men lengthened by about 4 years and in case of women by about – 3.4 years). Despite positive changes in life expectancy, the index for Poland is still unfavourable in comparison to the western European countries, including Germany. Life expectancy for Polish men is shorter by about 5 years than

the respective indicator for German men, and in case of women – by about 2.5 years. The majority of deaths in Poland were due to diseases of civilization, i.e. diseases of the circulatory system (50% of all deaths), malignant neoplasms (25% of deaths*), as well as the injuries and poisonings (80% of deaths in 2002 were due to all the illnesses mentioned above) (*Trwanie życia w 2002 r.*, 2003, p. 6).

**Table 2**

**Measures of living standard in the field of health needs in 2004**

| | Poland | Germany | Czech Republic | Slovakia | Lithuania | Ukraine | Belarus | Russia |
|---|---|---|---|---|---|---|---|---|
| Life expectancy in 2003 | M 70,5 K 78,9 | M 75,7 K 81,4 | M 72,1 K 78,7 | M 69,9 K 77,8 | M66,5 K77,7 | M 62,2[a] K 73,3[a] | M 62,3[b] K 74,1[b] | M 58,8[b] K 71,9[b] |
| The number of hospitals per 100,000 population | 2.1[c] | 4.2 | 3.6 | 2.7 | 5.3 | 5.6 | 7.2 | 6.3 |
| The number of beds in general hospitals per 100,000 population | 480.0[d] | 857.9 | 847.4 | 698.7 | 843.3 | 872.9 | 1071.3 | 987.9 |
| The number of beds in psychiatric hospitals per 100,000 population | 54.1[d] | 150.4 | 112.2 | 86.0 | 106.8 | 94.8 | 73.5 | 113.6 |
| The incidence of tuberculosis per 100,000 population | 22 | 8 | 11 | 19 | 63 | 26 | 60 | 115 |

[a] 2001, [b] 2002, [c] General hospitals only, [d] Data do not include places for newborn and day places in hospital wards.

Source: Ibid., pp. 126, 269-271.

Taking into consideration the index examined, one should note that the most favourable situation could be observed in Germany where life expectancy for men amounted to 75.7 years and for women – to 81.4. The next place is taken by the Czech Republic. Among eight countries considered Poland occupies the 3rd place. A slightly lower index of life expectancy is noted for Slovakia. However, in all countries of the former USSR, the level of indices is frightfully low. Having in mind the accessibility of data concerning this question, we can see that life expectancy for men ranged from 58.8 to 66.5 years, and for women – from 71.9 to 77.7 years. Among eastern countries, the best situation can be observed in Lithuania – reaching the upper limits of the presented ranges.

To conclude this topic, it should be stressed that life expectancy index is a common measure applied in estimating standard of living and social progress in general. However, this indicator is especially useful in case of long-term analyses concerning

* A growing number of deaths due to neoplasms is an alarming phenomenon that can be observed year by year.

social transformations. Nevertheless, life expectancy index is frequently used in international comparative analyses, most often for the purposes of estimating levels of the societies' civilisation development. It is one of the most comprehensive measures of living standard, commonly used to assess health status of the population as well as the effects of actions undertaken by individual countries in the field of health care.

Data concerning the number of hospitals per 100 thousand population as well as the number of beds in general and psychiatric hospitals per 100 thousand population indicate not very favourable situation in Poland in comparison to the rest of the examined countries. The index concerning the number of hospitals amounted to 2.1 for Poland and it was by half lower than in Germany. Moreover, all eastern neighbours of Poland reached high values of the discussed indicator. For Russia, this index amounted to 7.2 hospitals per 100 thousand population, and for Belarus 6.3 respectively. The most similar indicator, as far as the number of hospitals is concerned, in 2004 was noted in Slovakia, amounting to 2.7. Similarly unfavourable indicators for Poland include the number of beds in general hospitals and the number of beds in psychiatric hospitals per 100 thousand population. In case of Poland the indices amounted to 480 beds in general hospitals and 54.1 in psychiatric hospitals. In other examined countries, these numbers are much higher. As far as the number of beds in general hospitals is concerned, the highest indicator was reached by Belarus, amounting to 1071.3 of beds per 100 thousand population. In case of the latter indicator, i.e. the number of beds in psychiatric hospitals, in 2004 the highest level of it was reached by Germany (150.4 beds per 100 thousand population). One should add that the data concerning beds in hospitals include the number of beds that are ready to admit patients twenty-four hours a day.

Incidence of tuberculosis per 100 thousand population is another measure of living standard within the scope of health needs. In case of Poland, this index is almost three times higher than in Germany and two times higher than in the Czech Republic, amounting to 22 incidents of tuberculosis disease per 100 thousand persons. At the same time, this indicator is almost three times lower in Poland than in Lithuania or Belarus, and as many as over 5 times lower than in Russia where it amounted to 115 incidents of tuberculosis per 100 thousand persons. Thus, it can be noticed that the level of this index is much diversified among the examined countries. In Germany, this indictor amounted to only eight incidences of tuberculosis per 100 thousand population.

To sum up, it should be stated that only two out of five examined indicators of health status were relatively favourable in Poland, though still they were not very good. The best results in this field were reached by Germany. Altogether, it leads to the conclusion that in Poland, in comparison to other countries, the situation is rather unfavourable.

## 1.3. Measures of living standard within the scope of education needs

In the field of education needs, the following diagnostic variables were chosen:
- gross enrolment rate, primary schools,
- gross enrolment rate, secondary schools,
- gross enrolment rate, higher education institutions,
- the number of students per 10 thousand population (see Table 3).

Satisfying needs in the field of education is above all determined by the provision of common access to all educational levels, from the lowest to the highest ones. This fact resulted in the specific selection of particular measures for this group of needs. Gross enrolment rate is a quotient of the total number of pupils/students of a given educational level and the general population of age group corresponding with this particular level of education. In some countries, the index exceeds 100 because some pupils and students outside the given age group attend schools as well.

**Table 3**

**Measures of living standard within the scope of education needs in 2004**

| | Poland | Germany | Czech Republic | Slovakia | Lithuania | Ukraine | Belarus | Russia |
|---|---|---|---|---|---|---|---|---|
| Gross enrolment rate, primary schools | 100 | 99 | 102 | 100 | 100 | 95 | 101 | 118 |
| Gross enrolment rate, secondary schools | 119 | 100 | 97 | 92 | 103 | 93 | 93 | 93 |
| Gross enrolment rate, higher education institutions | 52[a] | 50 | 37 | 34 | 69 | 66 | 61 | 65 |
| The number of students per 10 thousand population | 535[b] | 2331 | 319 | 165 | 183 | – | – | – |

[a] In percentage of population within the age range of 19-24 years, [b] Including foreigners.

Source: Ibid., pp. 126, 269-271.

For the appropriate development of a human the first level of education is particularly important. Taking into consideration the first index mentioned above, i.e. gross enrolment rate in primary schools, we can see that its values for the countries examined range from 95 to 118%. Differences between particular countries are quite well visible (see Table 3), however unfavourable situation can be noted in Ukraine only, where the gross enrolment rate reached the value of only 95%.

Another important measure represents the percentage of young people at the post-primary age included in the education system since the secondary level of education often constitutes the basis for any further learning. Generally, the higher the percentage mentioned, the better. In Poland, it amounted to 119% but it should be

stressed that this index includes students attending not only different secondary schools but also lower secondary schools, vocational schools, as well as post-secondary schools, except for teacher training colleges and foreign language colleges. Nevertheless, the situation in Poland is favourable, similarly to the situation in Germany and Lithuania. The lowest value of the gross enrolment rate in secondary schools can be noted in Slovakia (it amounted to 92%) and then in Ukraine, Belarus and Russia (where it amounted to 93%).

The most appropriate measure describing education level of the society is in fact represented by the gross enrolment rate on the tertiary level of education. It presents the data concerning the percentage of young people of a given age group attending university, postgraduate and doctoral studies, i.e. schools that require graduation of the appropriate post-primary school. Secondary education, not even mentioning vocational or primary education, is becoming increasingly common; hence, it does not prove the high standard of living in a given country. The highest percentages of persons taking up studies at higher education institutions are reported in the former Soviet Union countries where the specific boom for the tertiary education can be observed. In Poland, the gross enrolment rate at higher education institutions amounts to 52% and it concerns only population of age ranging from 19 to 24 years. In Germany, this indicator amounts to 50%, in the Czech Republic, and Slovakia to 37% and 34% respectively.

The last of the indicators mentioned is represented by the number of students per 10 thousand population. Unfortunately, there are no data concerning the CIS countries. The highest value of this index was noted in Germany: amounting to 2,331. In Poland, the number of students per 10 thousand population amounted to 535 students (including foreigners), which gives our country the second place in the ranking. The next place was taken by the Czech Republic – 319 students, Lithuania – 183 students and at the very end Slovakia with 165 students per 10 thousand population.

Generally, in all examined countries the improvement in the level of satisfying educational needs can be observed. It is worth mentioning that there is a close relationship between the level of education and both objective and subjective elements of the quality of life. A higher level of education is a tool that prevents poverty giving at the same time feeling of stabilisation and financial security.

## 1.4. Measures of living standard in the field of culture and recreation

To estimate standard of living and make comparative analyses in the international scale, culture has to be taken into consideration. Satisfying needs in the field of culture and recreation is mainly illustrated by macroeconomic data. To carry out the analysis, the following diagnostic variables were chosen:

- television sets in use per 1,000 population,
- personal computers per 1,000 population,
- Internet users per 1,000 population,
- cinema attendance per 1,000 population (see Table 4).

The degree of equipping households with durable goods is an essential element indicating living standard of the population since it plays an important role in the process of satisfying both common and individual needs of household members. Durables, as the element of the household equipment, determine the process of fulfilling basic functions related, among others, with culture. That is why, the first two indicators were chosen. They are connected with satisfying needs within the scope of culture and recreation.

**Table 4**

**Measures of living standard within the scope of culture and recreation**

| | Poland | Germany | Czech Republic | Slovakia | Lithuania | Ukraine | Belarus | Russia |
|---|---|---|---|---|---|---|---|---|
| Television sets in use per 1,000 population in 2002 | 422 | 661 | 538 | 409 | 487 | 456 | 362 | 538 |
| Personal computers per 1,000 population in 2004 | 193 | 561 | 240 | 296 | 155 | 28 | – | 132 |
| Internet users per 1,000 population in 2004 | 236 | 500 | 470 | 423 | 282 | 79 | 163 | 111 |
| Cinema attendance per 1,000 population | 72[a] | 220[a] | 80[b] | 56[b] | 50[b] | 100[b] | 120[a] | 13[b] |

[a] 2001, [b] 1999.

Source: Ibid., pp. 243, 244 and 278.

Data describing audio-visual appliances concern households equipped with at least one piece of a given device. As far as the number of TV sets per 1,000 population is concerned, the highest level was reached by Germany and then by the Czech Republic and Russia. Poland took the sixth position in this ranking with the number

of TV sets amounting to 422. Despite our relatively low place, for many years we have been able to observe a very high degree of equipping the Polish population with TV sets (ca. 98.5% of the whole society have TV set). Belarus had the lowest number of TV sets per 1,000 population – the indicator value in this country was almost twice lower than in Germany.

Even greater diversity can be noted in case of equipping population with personal computers. Data related to this measure concern computers in private possession and for private use only and data referring to Internet users concern persons having the access to the Internet network. The greatest number of personal computers per 1,000 population can be noted in Germany and then in Slovakia, however the latter number is almost two hundred percent lower than in case of Germany. Poland with the number of 193 personal computers per 1,000 population takes the forth place. Low values of the index are characteristic for the CIS countries, particularly Ukraine, where the number of computers per 1,000 population amounted merely to 28. The situation is similar as far as the number of Internet users per 1,000 population is concerned. Eastern countries reached very low indicators, particularly in comparison with Germany, the Czech Republic and Slovakia. In Poland, the number of Internet users is over two hundred percent lower than in Germany or the Czech Republic and at the same time three times higher than in Ukraine. Such a situation proves that the index mentioned is highly diversified among countries. The above reflects on the one hand wide access of the EU population to the Internet and on the other hand very limited access of the CIS population.

Participation in traditional forms of culture, e.g. cinema attendance, is an essential form of cultural activity. The indicator of cinema audience per 1,000 population shows a very good situation in case of Germany where it amounted to 220. In Poland, this number amounted merely to 72, and in Slovakia – to 56. In case of other countries, the index examined was highly diversified. Russia observed the lowest cinema attendance – the indicator amounted to 13 and it was 17 times lower than in Germany and about 5.5 times lower than in Poland.

It should be stressed that the data quoted prove relatively low cultural activity of the Polish society, which can be explained by a relatively high level of prices of cultural services and the development of domestic forms of cultural activity (reflected among others by the indices concerning households with audio-visual appliances). To sum up, we can state that indicators concerning culture and recreation presented in this part show that the degree of satisfying cultural and recreational needs in Poland is lower than in the EU and these needs are not fully satisfied in our country.

## 1.5. Measures of living standard within the scope of material living conditions

Within the scope of material living conditions, the following diagnostic variables were chosen:

- passenger cars in use per 1,000 population (in pieces),
- fixed line telephone subscribers per 1,000 population,
- cellular phone subscribers per 1,000 population,
- the share of expenditures on furnishings and household equipment in total household expenditures (see Table 5).

One measure indicating the state of material living conditions of a given society is represented by the so-called motorisation rate identified as the number of registered passenger cars per 1,000 population in a particular year and within a particular area. In this case German society enjoyed the best situation since in 2003 the indicator for this country amounted to as many as 540.6 cars per 1,000 population. In Poland, this number amounted to 294.4. Ukraine and Russia reported the lowest number of cars. In Russia in 2003, this number amounted to 160.6 cars per 1,000 population. A low motorisation rate is correlated with a low level of wealth of the society. However, it should be mentioned that year by year a number of registered passenger cars is rising in all the countries examined.

Another macro-indicator describing the level of material living conditions is constituted by the number of fixed line telephone subscribers per 1,000 population. In 2004, Germany was the most developed country in terms of this number (having 661 subscribers per 1,000 population), and Slovakia was the least developed (232 respectively). In Poland, the number of subscribers per 1,000 population amounted to 293 and it was over two hundred percent lower than in Germany. The Czech Republic and Belarus reported a better situation than Poland as well.

**Table 5**

**Measures of living standard within the scope of material living conditions in 2003**

| | Poland | Germany | Czech Republic | Slovakia | Lithuania | Ukraine | Belarus | Russia |
|---|---|---|---|---|---|---|---|---|
| Passenger cars in use per 1,000 population (in pieces) in 2003 | 294.4[a] | 540.6 | 363.3 | 251.0 | 363.9 | 108.2[d] | 167.6 | 160.6 |
| Fixed line telephone subscribers per 1,000 population in 2004 | 293[b] | 661 | 338 | 232 | 239 | 256 | 311 | 256 |
| Cellular phone subscribers per 1,000 population in 2004 | 605[c] | 864 | 1054 | 794 | 966 | 289 | 113 | 517 |

**Table 5 continued**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| The share of expenditures on furnishings and household equipment in the total expenditures | 4.4 | 7.2 | 5.4 | 4.6 | 5.0[e] | – | 4.7[d] | – |

[a] Number of registered vehicles, [b] Data concern operators of the public network, [c] Including users, [d] 2002, [e] 2001.

Source: Ibid., pp. 236-239, 446, 447, 460, 461.

The situation is slightly different as far as the number of cellular phone subscribers per 1,000 population is concerned. In 2004, the Czech Republic reached the highest level of this indicator (it amounted to 1,054 subscribers per 1,000 population). Lithuania took the second place with the number of 966 subscribers, and the third place was taken by Germany. Poland took the fifth place in this ranking, overtaking Russia, Ukraine and Belarus. The lowest degree of saturating the society with mobile phones was observed in Belarus (the analysed index amounted merely to 113).

The share of expenditures on furnishings and household equipment in the structure of the total consumer expenditures was the highest in Germany. Once more it proves a high level of wealth of the German population. Poland and Slovakia enjoyed a similar level of expenses on furnishings; such expenses amounted to 4.4% and 4.6% of the total expenses respectively.

It should be mentioned that present material living conditions result from the past expenses of households and they are in close relationship with ways of spending current and future income. The analysis of equipping households with durables allows for expressing the conclusion that besides German and Czech households, Polish households are among the ones having better equipment within the group of countries examined.

## 1.6. Measures of living standard in the field of social safety

The last analysed group of needs includes needs of social safety. To examine this group of needs, four variables were used:

- reported crimes per 100 thousand population,
- expenses on national defence as the % of the GDP,
- fatalities in accidents at work per 100 thousand workers,
- the share of fatal accidents in the total road accidents in 2001 (see Table 6).

**Table 6**

**Measures of living standard within the scope of the social safety in 2003**

| | Poland | Germany | Czech Republic | Slovakia | Lithuania | Ukraine | Belarus | Russia |
|---|---|---|---|---|---|---|---|---|
| Reported crimes per 100 thousand population | 3616[a] | 7682 | 4142 | 1740 | 2029 | 1115 | 1282 | 2514 |
| Expenses on national defence as the % of the GDP in 2004 | 1,8 | 1,4 | 1,8 | 1,7 | 1,7 | 2,6 | 1,2 | 3,9 |
| Fatalities in accidents at work per 100 thousand workers | 4,7 | 2,9[b] | 4,3[c] | 3,9[c] | 8,6[b] | 10,0 | 6,4 | 15,0 |
| The share of fatal accidents in the total road accidents in 2001 | 10,2 | 1,9 | 5,0 | 7,3 | 11,7 | 17,4 | 25,4 | 18,8 |

Data concern the last available year, data for some countries are based on partial or approximate information, [a] Data provided by the Police Headquarters, [b] Per 100 thousand. employed persons, [c] Per 100 thousand insured employed.

Source: Ibid., pp. 126, 149-151, 189, 190, 452, 453.

The first indicator concerns a number of reported crimes per 100 thousand population. The lowest number of reported crimes was noted in Ukraine and Belarus. Unfortunately, this does not prove the actual low number of crimes in these or other countries, since the number in question results rather from the fact that only some part of the crimes committed are reported. Hence, the minimum values of this index are not quite reliable. At the same time, the highest number of reported crimes was noted in Germany. It is hard to assess whether this number is a positive symptom or not. On the one hand, it shows a high number of crimes committed in Germany. On the other hand, it indicates that the large number of petty crimes is commonly reported.

Another macroeconomic indicator of standard of living is represented by the share of expenses on national defence as the percentage of the GDP. Expenditures on national defence in the NATO countries (Poland, Germany, the Czech Republic, Slovakia, and Lithuania) include expenses connected with military matters. Expenses of defence departments are mainly included. Expenses on national defence in countries outside the NATO (Belarus, Ukraine, and Russia) generally concern the expenses of defence departments, excluding matters of public order and public safety. The highest share of expenses on national defence in the total GDP among the NATO countries in 2004 was noted in Poland and the Czech Republic (1.8%). The lowest index was reported in Germany (1.4% of the GDP), which results from previous investments in this country and from the richest military infrastructure that does not currently require such high expenditures like e.g. the infrastructure in Poland. In countries outside the NATO, the highest share of expenses on national defence was noted in Russia (3.9%) and the lowest – in Belarus (1.2%).

The following two indicators concern the number of accidents and represent de-stimulants of living standard. One of them concerns fatalities in accidents at work per 100 thousand workers. Russia reported the highest indicator value that amounted to as many as 15 fatalities per 100 thousand workers. Ukraine followed Russia with the value of 10 fatalities per 100 thousand workers. Once more Germany had the lowest number of fatalities. Slovakia followed Germany. In Poland, this index amounted to 2.9 and it was over three times lower than in Russia and over one and a half times higher than in Germany.

The last of the indicators mentioned concerns the share of fatal accidents in the total road accidents. The highest number, amounting to as many as 25.4%, was noted in Belarus. This means that one in every four participants of the road accidents died in the accident. Similarly to the results of the previous analysis the indices for Russia and Ukraine reached very high values, 18.8% and 17.4% respectively. In Poland, every tenth participant of a road accident dies and it is a rather high indicator, twice higher than in the Czech Republic and over five times higher than in Germany. As for the road safety and the share of fatalities in the total road accidents, Germany can be proud of the lowest average – the value of this indicator in the last year examined amounted to 1.9%.

To sum up, the data presented in this part of the paper show essential disproportions in living standards of populations inhabiting particular countries. On the basis of some chosen partial measures, we can state that the highest standard of living was reported for German population. A relatively good situation can also be noted in the Czech Republic. The worst situation can be observed in Russia, Ukraine and Belarus where the degree of satisfying consumer needs in all the groups examined is actually low. Since 2004 Lithuania has been a full member of the European Union and some socio-economic indices describing living standard in this country show some average level, however the level in question is still lower than in Poland or Slovakia.

When we divide all the countries examined into two groups: member countries of the European Union and countries of the Commonwealth of Independent States, we can notice that in the group of the EU members countries, Germany definitely enjoyed the highest standard of living. In this country, the highest values were reported in case of twelve out of twenty variables considered*. Taking into consideration the same criterion, the second place in this ranking was taken by Poland-four variables with the highest values, and then the Czech Republic with three best variables and Lithuania-one variable having the most favourable value. Slovakia did not have even one such variable. Poland achieved the maximum values of indicators in the group

* From the group of 30 analysed variables the ones which were incomplete or differed considerably between countries in relation to their definitions or methodological solutions applied while calculating were excluded. However, two new indices were added: GDP according to the purchasing power parity per capita in USD and the unemployed rate in % of professionally active population.

of housing needs. In case of minimum values of the indices examined, the first place was taken by Lithuania where seven most unfavourable indices were reported. The second place was taken by Poland – six unfavourable variables and the third place – by Slovakia – five variables. Both the Czech Republic and Germany reported one variable with the lowest value each. In Poland, the most disadvantageous values of indices were noted in case of health needs and in Slovakia – in the group of educational needs and needs related to material living conditions. Lithuania reported the unfavourable values in the groups of health needs and social safety.

In the group of the CIS states, the most favourable situation could be observed in Belarus where nine variables with the highest values of the feature were reported (these were variables from the groups of health needs, recreation and culture and material living conditions). Russia took the second place with six variables of the best values and the third place was taken by Ukraine where four favourable variables* were reported. Ukraine was at the same time a country that reported the greatest number of variables with the lowest value. As many as eight variables out of twenty analyzed were unfavourable for Ukraine. The second place was taken by Belarus with six negative variables and the last position in the ranking was taken by Russia that reported five variables with the lowest values.

## 2. Delimitation of the comprehensive standard of living index

In the research related to regional differences in standard of living, some comprehensive (composite) measures are often used. They are obtained by aggregating variables that belong to the set of diagnostic features characterising the phenomenon studied. The basic purpose of this paper is to describe disproportions in standard of living between Poland and its neighbouring countries. Moreover, groups of states that enjoy similar living standard are to be identified as well. In the previous part, a general profile of partial measures was presented. These measures may become a basis for the international comparisons of living standard.

### 2.1. The comparison of standard of living in Poland and in the neighbouring countries with application of the Hellwig's taxonomic measure of development

One of the typical comprehensive measures of living standard is the so-called Hellwig's taxonomic measure of development that is also called a measure of eco-

* In case of the CIS countries, the sum of the best values of indicators amounted to 19 (not 20) since the gross enrollment rate indicator was of the same value for all these states.

nomic development. Values of this measure range from zero to one, and the higher the value, the closer to the previously determined pattern (standard) the examined object is. Using the criterion of decreasing value of this measure, we can rank the objects starting from the best to the worst ones in respect of the analysed phenomenon. In this case, we can rank the countries in respect of living standard of their population (Zeliaś, 2000, p. 92).

Value 1 represents the best pattern of standard of living in the given socio--economic conditions, described by the most favourable values of diagnostic variables. On the other hand, value of this index closer to 0 (zero) means that the given country represents lower standard of living. Therefore, the closer the value of a comprehensive index to 1 (one), the closer the living standard of a given country to the constructed pattern is. It should be added that differences in values of this measure should be interpreted in the absolute way, not the relative one, i.e. how much higher (or lower) one value is than another one (not how many times).

Results of the analyses and the values of the comprehensive indices show essential disproportions in standard of living between the countries examined (Figure 1).

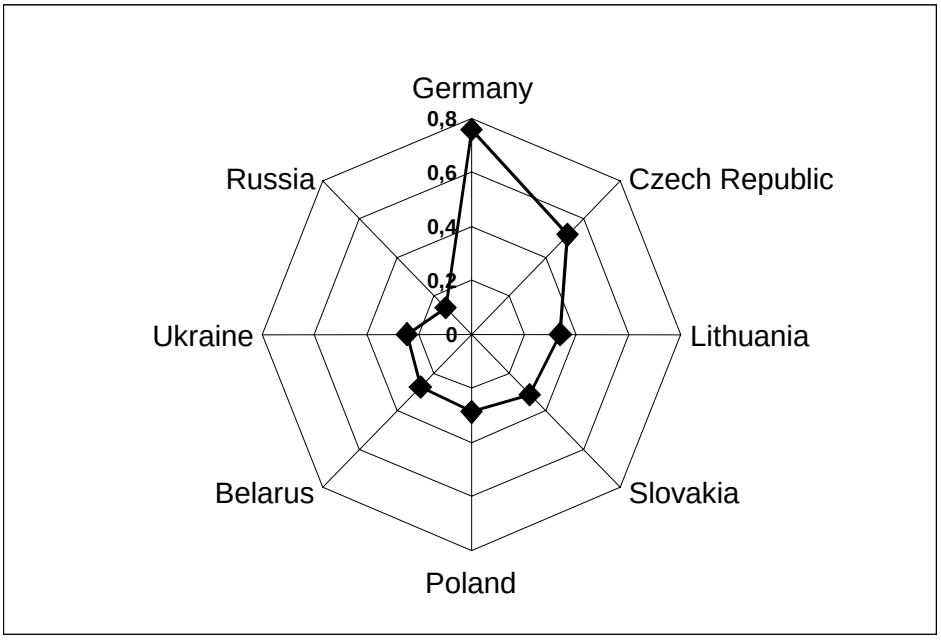


**Figure 1. Distance of Poland and the neighbouring countries to the standard according to the Hellwig's taxonomic measure**

The lowest standard of living was noted for the population in Russia (the value of the comprehensive measure amounted to 0.138). Living standards in

Ukraine and Belarus were also low (0.247 and 0.277 respectively). The highest standard of living measured by means of the Hellwig's method was noted for Germany (0.756), being the closest to the pattern. The Czech Republic occupied the second place (0.522) followed by Lithuania (0.339) and Slovakia (0.314). Poland took the fifth place only, with the value of the index amounting to 0.29. The difference between the analyzed countries, i.e. between the country with the highest value and the country with the lowest value of the comprehensive measure, amounted to as much as 0.618. Such a large disproportion shows significant differences in standard of living.

It should be stressed that the present analysis as well as the previous one (related to partial measures of living standard) show that the lowest standard of living was reported in Russia. However, only the use of the comprehensive index allows indicating how large the distance between Russia and other countries examined is. In case of the Russian population, the degree of needs satisfaction in all the examined fields is low. Probably, only the essential income improvement could increase standard of living of the Russian people.

## 2.2. Determining groups of countries with similar standard of living by means of the Ward's method

The next method – the Ward's method (Gatnar, 1998, p. 100) – is thought to be adjusted for preparing taxonomy of the features and objects in the best way. In our case, applying this method leads to distinguishing groups (clusters) of countries characterized by similar living standard. The basis for the calculation was provided by the final set of diagnostic variables. Results of interconnecting separate countries into clusters on the basis of their achieved standard of living were presented in Figure 2. Dendrograms (tree diagrams) illustrate both, the connections between countries and clusters arising at the successive stages of the procedure (Zeliaś, 2004, p. 90).

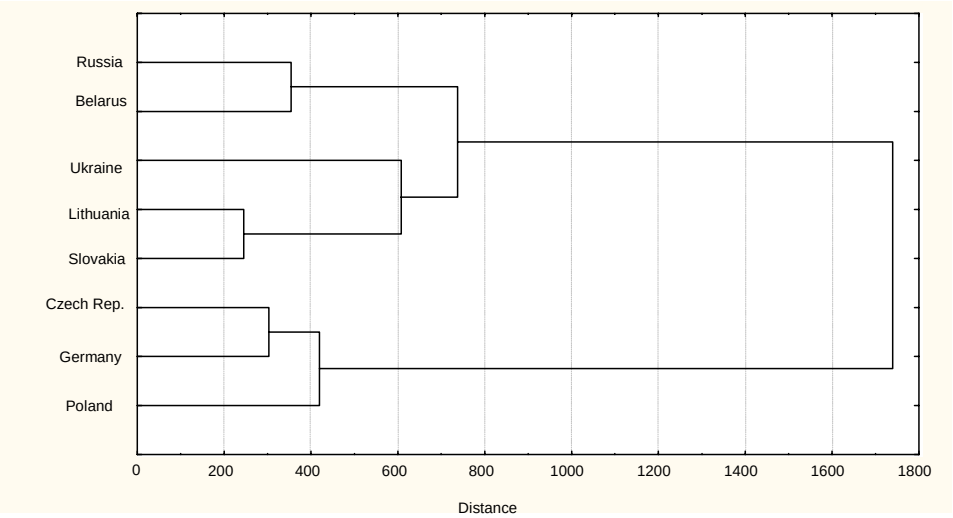


**Figure 2. Grouping the countries by means of the Ward's method**

At the first stage of the "cut", a dendrogram of connections allows to distinguish two clusters of countries similar in relation to living standard:
- the first cluster represented by Poland, Germany and the Czech Republic,
- the second cluster represented by Slovakia, Lithuania, Ukraine, Belarus and Russia.

Due to the next "cut", it was possible to distinguish the following groups of countries:
- the first cluster, like in the previous case, consists of Poland, Germany and the Czech Republic, but Germany and the Czech Republic are closer to each other with regard to the achieved standard of living,
- the second cluster is represented by Slovakia, Lithuania and Ukraine although Lithuania and Slovakia are more similar to each other,
- the third cluster consists of Russia and Belarus.

## 3. HDI – socio-economic development index

HDI is one of the comprehensive indices that measure social development and standard of living. The Human Development Index reflects the results in the field of the socio-economic development of individual countries and that is why it is sometimes referred to as the index of socio-economic development. UN introduced this system of calculation to make international comparisons. It was developed in 1990 and since 1993 the United Nations Organisation has used the index in its yearly reports.

To calculate the composite measure, the following basic dimensions are used:
- life expectancy at birth, as an index of population health and longevity,

– adult literacy rate (with two-thirds weighting) and the combined primary, secondary, and tertiary gross enrolment ratio (with one-third weighting), both measuring knowledge and education,
– gross domestic product (GDP) per capita at purchasing power parity (PPP) in USD, reflecting the level of economic development.

The HDI is calculated as the simple average value of the dimension indices and its value ranges from zero to one. A certain level of the HDI allows classifying a given country according to the following typology:
0.0-0.5 – low development of a country,
0.501-0.8 – medium development of a country,
0.801-1.0 – high development of a country.

The HDI report from 2006 included 177 states. Most of the data used in the report were derived largely from 2004 or earlier, thus indicating the HDI for 2004. Not all UN member states choose to or are able to provide the necessary statistics. Therefore they are not presented in this ranking (see Table 7).

**Table 7**

**Value of indices from the Human Development Report 2006**

| Value of indices from the Human Development Report 2006 Countries | HDI value | Life expectancy index | Education index | GDP per capita index (PPP US$) |
|---|---|---|---|---|
| Germany | **0.932** | 0.90 | 0.96 | 0.94 |
| Czech Republic | **0.885** | 0.85 | 0.93 | 0.88 |
| Poland | **0.862** | 0.83 | 0.95 | 0.81 |
| Lithuania | **0.857** | 0.79 | 0.97 | 0.81 |
| Slovakia | **0.856** | 0.82 | 0.92 | 0.83 |
| Russia | **0.797** | 0.67 | 0.95 | 0.77 |
| Belarus | **0.794** | 0.72 | 0.95 | 0.71 |
| Ukraine | **0.774** | 0.69 | 0.94 | 0.69 |

Source: Http://hdr.undp.org/hdr2006/statistics/documents/hdi2004.pdf, pp. 283-284 (19.10.2007).

In 2006, Poland occupied 37$^{th}$ place in the group of developed countries with the index value amounting to 0.857, lowering its position in the ranking by one place in comparison to the previous year. Germany took the 21$^{st}$ place, also reducing its position by one place. At the same time, the Czech Republic improved its position by one place, occupying the 30$^{th}$ place in the ranking. Lithuania occupied the 41$^{st}$ place, lowering its position by two places in comparison to the previous year. Slovakia once again occupied the 42$^{nd}$ place. In the report from 2006, Russia occupied the 65$^{th}$ place and it belonged to the "medium development" group. Its value of HDI amounted to 0.797 and as a result, Russia lowered its position by three places. Belarus kept its

position from the previous year, occupying the 67th place. The lowest place in the HDI ranking among the countries examined – the 77th – was taken by Ukraine although it improved its position by one place in the ranking in comparison to the previous year.

## Conclusion

Comparing Poland to its direct neighbours, one can notice that our country is characterised by a medium level of satisfying the majority of consumption needs. On the other hand, all the measures applied in the study including the comprehensive indices used in the study as well as the Human Development Index from 2006 confirm the high living standard of German population. The Czech Republic took the second place. The use of composite indices simultaneously shows low living standard of the CIS states populations, especially the Russian one. Moreover, the use of comprehensive measures indicated how large distance between Russia and other countries in the studied group is. In case of the Russian population, the degree of needs satisfaction in all the fields examined is low. As a result of the applied method of grouping, three basic groups of states were distinguished. Germany, the Czech Republic and Poland make up the first one, Slovakia, Lithuania and Ukraine make up the second one and Russia and Belarus belong to the third one.

Summing up, it is necessary to stress that the research carried out shows deep disproportions in standard of living among the countries examined. Between Poland and the neighbouring countries essential inequalities can be observed in relation to both general standard of living and separate elements describing the standard in question. These differences frequently result from economic, geographic and social differences connected with the specific situation of individual countries. Generally, Germany, the Czech Republic, Poland and Slovakia are characterised by their relatively modern structure of economy, creating at the same time good conditions for satisfying needs of their inhabitants. In contrast to these states, countries that report unfavourable values of socio-economic indices, because of their lack of resources and low developmental potential, create conditions to deepen structural differences, thus contributing to some increase in disproportions in standard of living.

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