

## TERRITORIAL DIFFERENCES OF HUMAN DEVELOPMENT INDEX IN ROMANIA

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**ABSTRACT** - The measuring of human capital, human development from both a quantitative and a qualitative point of view is difficult, the problem being further complicated if we consider regional and territorial approaches as well. At an international level, the Human Development Index is usually used for measuring and comparing these issues. This index addresses the most complex level of development of a region through the aggregation of the three indices from demographic (life expectancy at birth), social (education level) and the economic sphere (GDP per capita) with which we can have a much more complex picture about living standards of the population as well as the development level of a country. Because the applicability of this index has caused serious debates since its introduction, this study also focuses on selecting the right indicators for measuring human development.

**Keywords:** life expectancy at birth, education, GDP per capita, differences, HDI, Romania

### INTRODUCTION

The United Nations Development Programme (UNDP) already calculates and publishes this index since 1990 with the aim of measuring and comparing human development in different parts of the world. This index tackles the development level of a certain region in the most complex manner, since combining the three indexes from the fields of demography (life expectancy at birth), social sciences (the level of education) and economy (GDP/inhabitant), we get a more complex image on the living standards, on the population's development level. Thus, the HDI has three basic components:

- longevity: measured by life expectancy at birth
- the knowledge obtained through education resulting from the combination of two indexes: the education level of the adult population (above 15 years), namely the inverse rate of illiteracy (two-thirds) and the schooling rate obtained by correlating the adequate age groups to the three respective levels of education (one third)
- living standards: measured through the "purchasing power parity" method of the GDP/inhabitant stated in US dollars.

Analyzing the components of the human development index, we can sketch out not only the differences between counties but also their uneven evolution. The 2009 Human Development Report shows that at last Romania has achieved some progress regarding the growth of the human development index, thus occupying the 63<sup>rd</sup> place out of 182 countries, with a value of 0.837<sup>2</sup>. In the

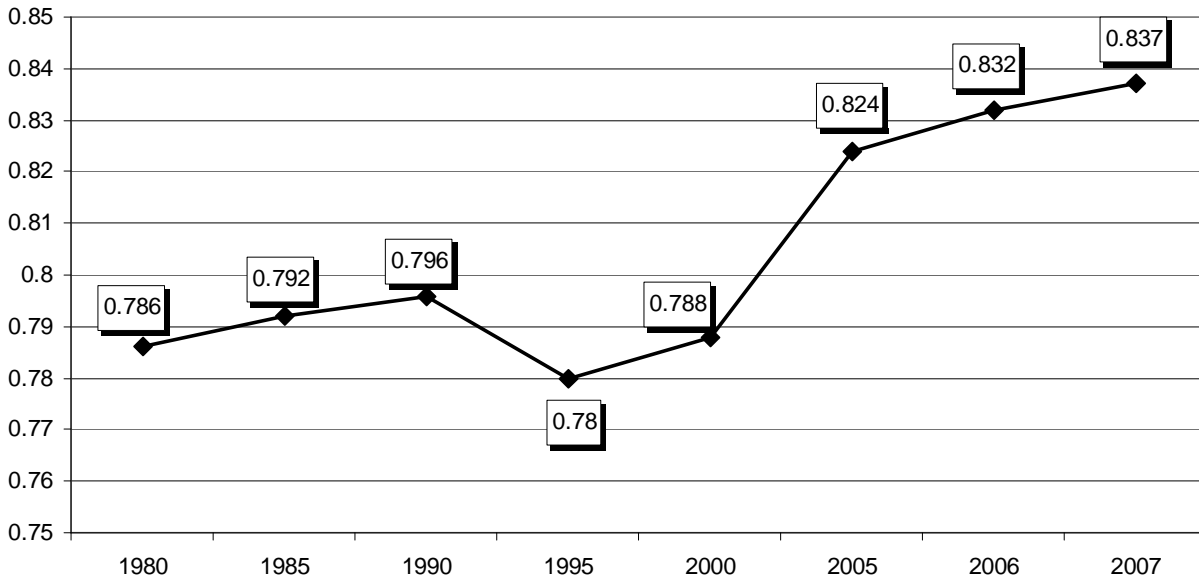
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<sup>2</sup> We have to mention that in 2009 a recalculation of the HDI's component was made, mainly in the case of GDP/capita/ppc\$ that was based on the comparative research of the World Bank made in 2008. Thus, if in 1990 the respective calculation was made according to geographical areas, with one country of reference for each (Austria for Europe), from 2008 on a single reference was taken, namely the USA, with the value of the USD dollar at constant prices in 2007. Since in this country the prices are higher than the ones in the countries of reference from the previous years and the dollar has depreciated significantly in the last decade, the values of the GDP/capita/ppc\$ for certain countries has been modified radically. Thus, in the countries where the prices were lower or higher, the values of the GDP/capita/ppc\$ have also increased or decreased. In Romania, the correction

case of Romania, life expectancy at birth has increased from 71.9 to 72.5 years, while the GDP per capita, calculated at Purchasing Power Parity, is situated at 12,369 dollars. In 2007, the rate of the literate population was 97.6%, with a schooling rate of 79.2%.



**Figure 1.** Values of the HDI in Romania between 1980-2007

Source: Human Development Reports, 2009

Before turning to the analysis of the existing inequalities regarding the HDI, I would like to analyze the evolution, the trends and the characteristics of each component.<sup>3</sup>

### **THE EVOLUTION OF THE LIFE EXPECTANCY AT BIRTH IN THE LAST TWO DECADES**

Life expectancy at birth is the most adequate index for expressing the evolution of the mortality in the case of a country's population, since beside the age structure of the population it also contributes to a better comparison of the life expectancy nationwide and worldwide as well. The evolutions from the beginning of the 90s are marked by the consequences of the transition period both economically and socially, namely the degradation of the living standards, the closing of some big industrial centres and consequently the drop in employment, as well as the pauperization of certain communities. All these changes are very well represented by the decrease of the life expectancy until 1995 from the value of 69.6 registered in 1990 to 69 years. This decline can be attributed in a great measure to the increase of the mortality due to the illnesses of the digestive tract and cardiovascular diseases, mainly in the case of the male population, worsened by the economic situation, typical for Romania in the years of transition. A comparison of the evolution of this index with other neighbouring Central European states (Czech Republic, Poland or Hungary) emphasizes the fact that in places where the economic growth was faster even at the beginning of the 90s, the life expectancy had also registered a mild improvement compared to Romania or Bulgaria, where the stagnation of the economy had a major impact on the decrease of life expectancy (Dolea – Nolte – McKee, 2002). Until

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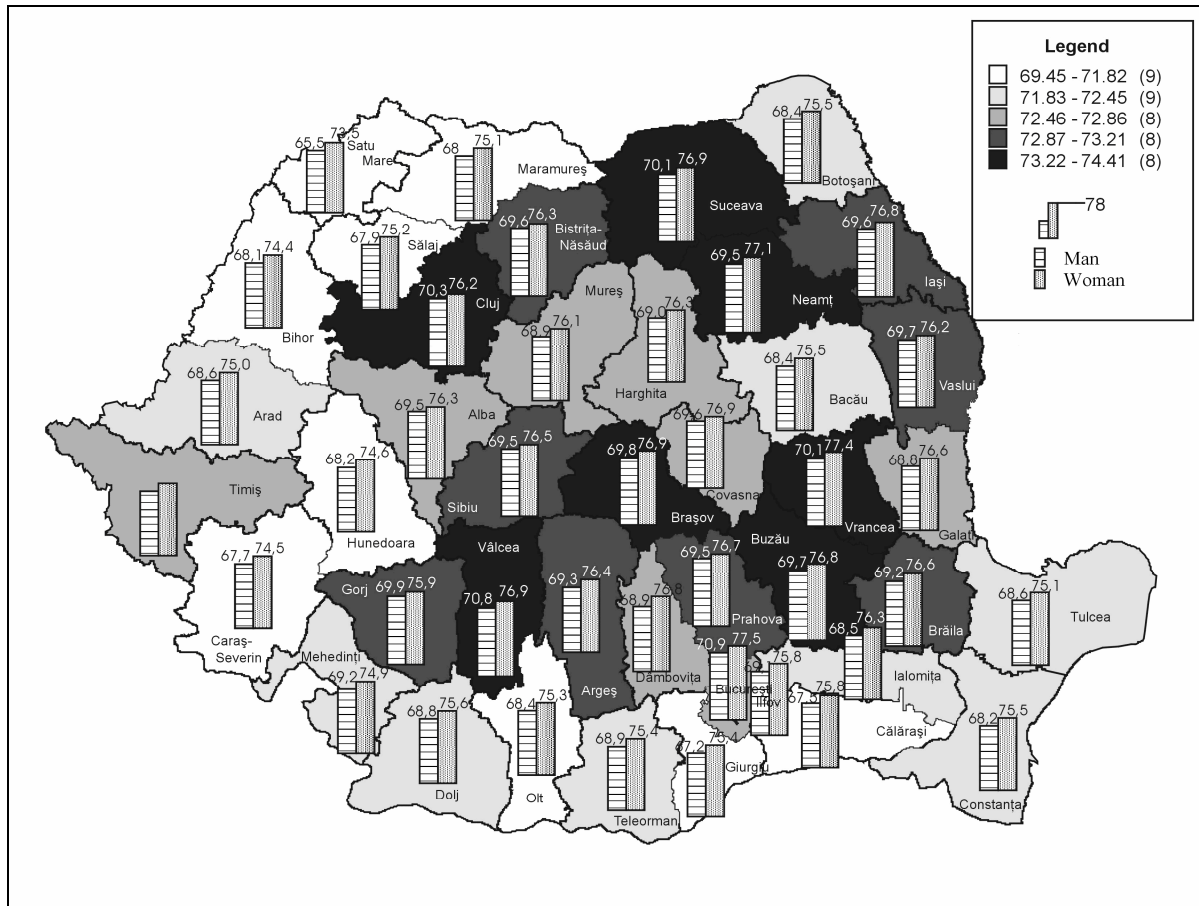
was made upwards which explains the small changes, for example those from 2005 when the value of the index was changed from 0.813 to 0.824 (Mărginean, I., 2010).

<sup>3</sup> We have to take into consideration that the latest data available are those from the 2009 UNDP Report and are calculated for 2007; however, there are not data relating to the level of counties.

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2001, we can observe a mild recovery, life expectancy growing in this short period up to 71.2 years, being at 73.03 years at present (2008).

When analyzing this index, we can find significant differences between regions, counties, types of settlements and sexes. However, we have to have in mind the general tendency idea valid not only for Romania but in a global context as well: the life expectancy of women is higher than the one of men, and this index has higher values in urban areas than in the rural ones.



**Figure 2.** Life expectancy at birth in 2007

Source: the author, according to the Romanian Statistical Yearbook, 2007, INS, București

Thus, in 2008 the difference in the case of this index was 7 years between the two sexes, respectively 69.49 years for men and 76.68 for women. These socio-demographic inequalities between men and women are also due to the differences in the life style, this phenomenon being called the male supra-mortality. However, we can draw the conclusion that the life style of the urban population, the availability of some specialized institutions, a greater accessibility to health care and the access to different communal services contributes to a higher life expectancy both for men (with approx. 2 years) and women (with more than one year).

At regional level, life expectancy at birth is the highest in the București-Ilfov Region and in the Centre Region of the country, the lowest values being measured in the West and North-West Regions (in both categories the life expectancy of the population has exceeded 71 years). In contrast with these positive evolutions, in some regions and counties the life expectancy at birth has hardly reached 70 years, the lowest values thus being measured in the western and north-western regions (in both areas the life expectancy of the population has exceeded 71 years). In counties such as Bihor, Caraș-Severin and Satu Mare, the life expectancy of the population barely reaches 70 years, the latter

one being the county with the lowest values at national level (69.89 years). We have to mention that there are great discrepancies within these counties, the inhabitants in the mountain areas being more isolated and having a more limited access to communal services than those situated in the proximity of bigger cities. On the other hand, the differences in the case of the life expectancy at birth are closely related to the nutrition habits of the population in these territories, as well as the poor quality of the health infrastructure. The differences are even more striking if we analyze the extreme values in the case of both men and women. Thus, the difference between the life expectancy of men living in București and Satu-Mare counties is 5.3 years, this value being only 4.03 between the counties with the highest and lowest values in the case of women.

### **INEQUALITIES REGARDING THE ROMANIAN POPULATION'S LEVEL OF EDUCATION**

The education level and the investments in human capital are probably the most important measures on the way to becoming a society. Theodore Shultz (1971) considers that the higher educational expenditures can lead to the increase of work productivity and implicitly to economic growth. Nowadays economic growth cannot be sustained without a highly qualified workforce. G. Becker considered that very few countries – or actually none – have reached a significant economic growth without first investing substantial amounts of money in training their work force (Becker, 1977).

Considering the three stages of education, namely the primary, secondary and higher-education, the average schooling rate of the population in the 2005/2006 school year in Romania was 72.9%, oscillating between 50% and 100%, according to the developmental level of the certain territories. Thus, in less developed counties, such as Giurgiu, Vrancea, Tulcea, Neamț, Călărași, Botoșani, the schooling rate of the population hardly reached 60%, while in counties with a more developed economy, with a higher rate of the urban population and where all levels of education were present, this index was above 80% (especially in Iași, Cluj, Timiș counties, as well as București).<sup>4</sup> We have to mention the fact that the gross schooling ratio in all the education levels is double in the urban environment compared to the rural one, being 96.7% in the cities and 44.5% in the rural areas. Regarding the two sexes, the gross enrolment ratio tends to be almost equal until the age of 14, after which the feminine sex exceeds the masculine one with 3.8 percent for the ages 15-18 and with 11% for the ages 19-23.

A major tendency that can be observed while following the data from the last two censuses is the growth of the ratio of the population with university degree (from 7.1% to 10.1%) and the decrease of the illiterate from 3.1% (1992) to 2.4% (2007). We can say that the spatial structure of the Romanian population's education level is very stable: the correlation between the rates of the illiterate according to the two censuses was 0.404, while in the case of the population with university degree this value has increased to 0.544, not showing major changes in the spatial distribution of education. The main characteristics of this spatial structure are the concentration of the population with a university degree in the bigger cities of the country, as well as the concentration of the illiterates in the rural areas with a very low level of development.

The existing inequalities among the population's level of education can be very well illustrated by means of the Lorenz curve in the two years of reference, 1992 and 2002. As we can observe both in the case of the illiterates and the population with university degree, inequalities have somewhat decreased throughout these ten years (in the 1992–2002 period), however there are still relatively high disparities between the two extreme values of the population's level of education. In order to determine the inequalities between them, the most appropriate indexes are the Gini Coefficient and the Hoover Index.

These indices indicate the fact that inequalities are higher in the case of the population with university degree, than in the case of the illiterates. This can be explained by the decreasing number of the latter and the expansion of higher education, as well as the difficulties certain groups of society

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<sup>4</sup> This can be explained also by the high number of the students coming from other counties.

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have to face regarding the access to education. In a territorial profile, the greatest percentages of the population with a university degree can be found – besides the capital – in Cluj (13.9%), Braşov (13%), Timiş (11.9%), Sibiu (11.4%), Constanţa (11.2%) and Iaşi (10%) counties. We have to note the fact that the higher education in these areas, as well as the great number of universities (mainly in Iaşi, Cluj, Timiş counties and in Bucharest), has long traditions, being considered points of reference in the Romanian higher education. The counties which are in a disadvantageous situation have a reduced level of development, where the lack of the institutions of higher education is also reflected in the reduced number of inhabitants with a university degree. This category consists of Giurgiu, Călăraşi, Vaslui, Ialomiţa and Teleorman counties, where the proportion of the population with a university degree remains well below 5%.

However, the problem is more serious for the people who have not graduated any school and are illiterate. The pupils expelled from the educational system are not considered victims of the social, educational inequalities, but are seen as young individuals costing society a lot of money due to the expenses of their professional preparation and integration (Neagu – Stoica – Surdu, 2003). Even if in the last decade the number of illiterates has decreased from 3.1% (1992) to 2.6% (2002), this number of half a million still being quite high, actually causing quite severe problems in today's Romanian society.

The same problem is reflected in the inequalities regarding the pupils that the educational system actually has to confront, namely the problems connected to the low school attendance of the children coming from poor families and disadvantaged environments, as well as to the fact that a large segment of the school age population is not included in the educational system. The causes of this situation can be searched in the mentality of some families being in poverty: they do not send their children to school regularly because of social-economic reasons (these children have to help their parents in the household). Thus, the participation to education of these children is more decreased, and consequently the quality of their school training diminishes their chances for accessing the labour market. The most vulnerable groups of the population are those coming from a rural environment, who need to interrupt their studies after the obligatory education because of the high educational costs needed for continuing their studies (Neagu – Stoica – Surdu, 2003).

### **INEQUALITIES IN THE LEVEL OF THE GROSS DOMESTIC PRODUCT (GDP)**

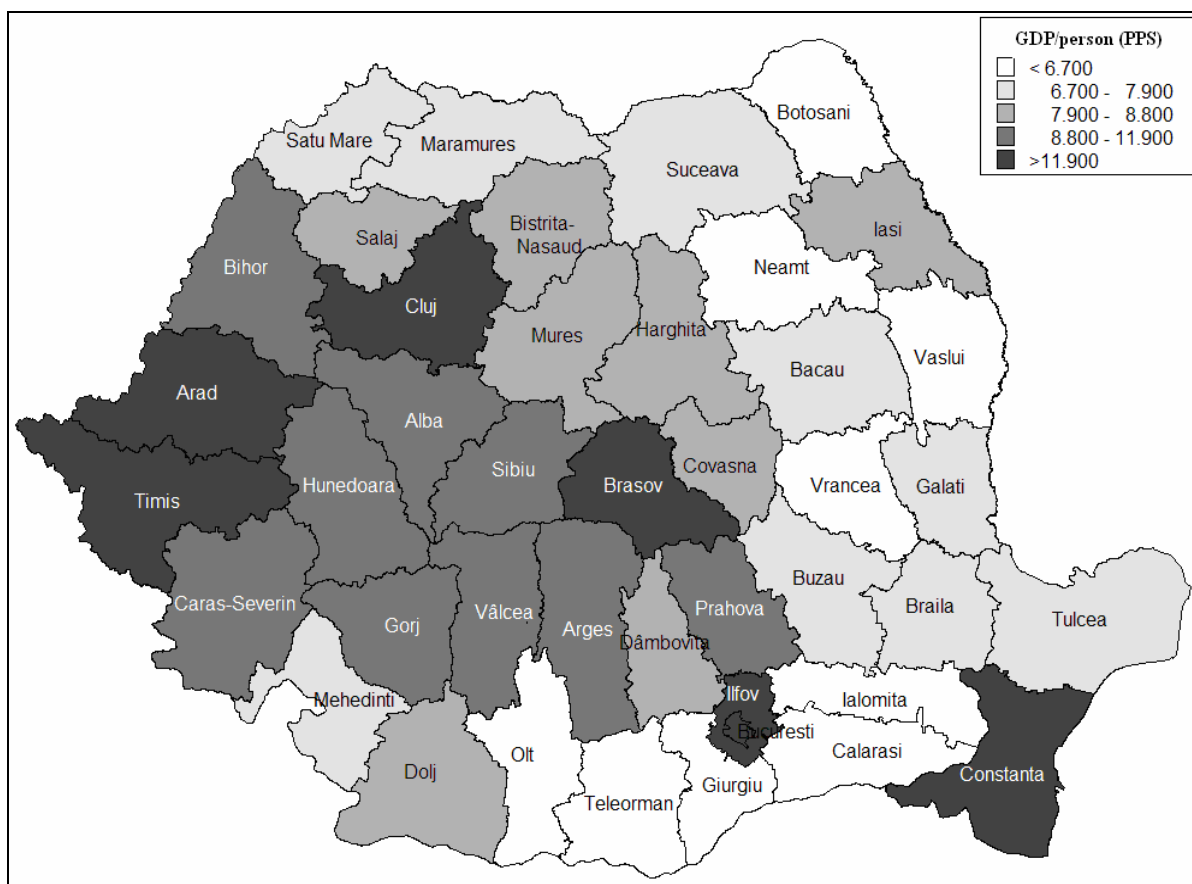
A peculiarity of the Romanian regional development is the mosaic-like structure of the country, the relatively developed areas neighbouring quite underdeveloped ones, a fact that can also be explained by the localization of the natural, human, infrastructural resources, their proportions varying from one point in the space to another.

In the mid 90s, the growth of the GDP per capita was affected to a large extent by the economic decline of the whole country. The restructuring of the state-owned enterprises, the privatization of the economic structures was not done in a strong pace, these having been influenced even more by the difficulties appearing in the Balance of International Payments and by the deficit of the central budget (Réti, 2003). The inflation was kept at a high level, however, together with the closing of the industrial units unemployment started to increase, thus the regression affected the national economy as a whole. At the end of the 90s, the stabilization of the country's macro-economic processes, the consolidation of the Foreign Direct Investments and last but not least the reduction of the inflation to 16% have largely contributed to the growth of the GDP per capita, which in 2001 has reached a 5.7% increase. Even with these positive changes, the GDP per capita remains far below the average values of the EU, only the capital of the country showing a higher economic performance with a particular place in the Romanian spatial-economic structure. This special evolution of the capital has contributed even more to the increase of the existing economic inequalities.

The higher level of GDP per capita is mostly common for the areas close to Bucureşti, as well as the Transylvanian counties, a phenomenon greatly determined by their regional position, by their proximity to western countries and also the ability and openness towards new inventions.

Somewhat higher rates of the GDP per capita can be observed in the case of the industrial axis stretching along Gorj-Vâlcea-Argeş-Prahova Counties, continuing towards Constanţa, which actually

represent those counties that have managed to strengthen their position in the current economic structure due to the investment policies of the communist regime. The least developed counties are still the ones situated in Moldova, this area being considered the country's pole of poverty, followed by Oltenia and partially Muntenia.



**Figure 3.** Allocation of counties on the basis of GDP/capita in 2007

Source: the author, based on data taken from Eurostat

### CHANGES TAKING PLACE IN THE EVOLUTION OF THE HUMAN DEVELOPMENT INDEX

The different evolution of the three components shows the favourable situation of certain counties that is also reflected by the growth of the human development index. The most remarkable growth was registered in the case of the education index and the GDP (7% growth). This can be explained both by the expansion of the different forms of education, especially higher education, but also by the stabilization of the country's macroeconomic processes that has directly resulted in the dynamic growth of the GDP, also influencing the positive evolution of the county and national HDI.

The actual analysis is connected to the evolution of the HDI in Romania in the last decade, this being the central point of the paper itself. We have managed to analyze this index twice on the basis of the available territorial data in 1995 and in 2005. In fact, in 1995, the South Transylvanian axis (Braşov, Sibiu and Timiş counties) had the highest HDI together with Cluj county, as well as the northern parts of Oltenia and Muntenia (Gorj and Argeş counties), and of course the capital, Bucharest (the HDI values being between 0.760-0.792). The opposite pole was represented by the underdeveloped regions already mentioned (Botoşani, Vaslui, Călăraşi, Giurgiu and Teleorman), where the HDI hardly reaches the 0.700 value. These counties have been considered for several decades as being the less developed territories, namely Botoşani, Vaslui, Tulcea, Ialomita, Călăraşi,

Giurgiu, Teleorman, Olt in Moldova and Muntenia, as well as Satu Mare and Bistrița-Năsăud in Transylvania.

The economic boom in the second part of the 90s has positively influenced the development of certain regions, which was very well reflected in the territorial evolution of the HDI's values. In consequence, the biggest changes that have been observed could mostly be found in the case of areas with a higher level of human developmental (Bucharest, Timiș, Arad, Bihor, Cluj, Sibiu and Brașov counties), contributing at the same time to the increase of differences in regional development. In fact, the increase of the index reached 14% in the above mentioned regions, while in others this change has barely reached 3%. All these indicate the stabilization of the current spatial structure, as well as the divergence in the levels of development.

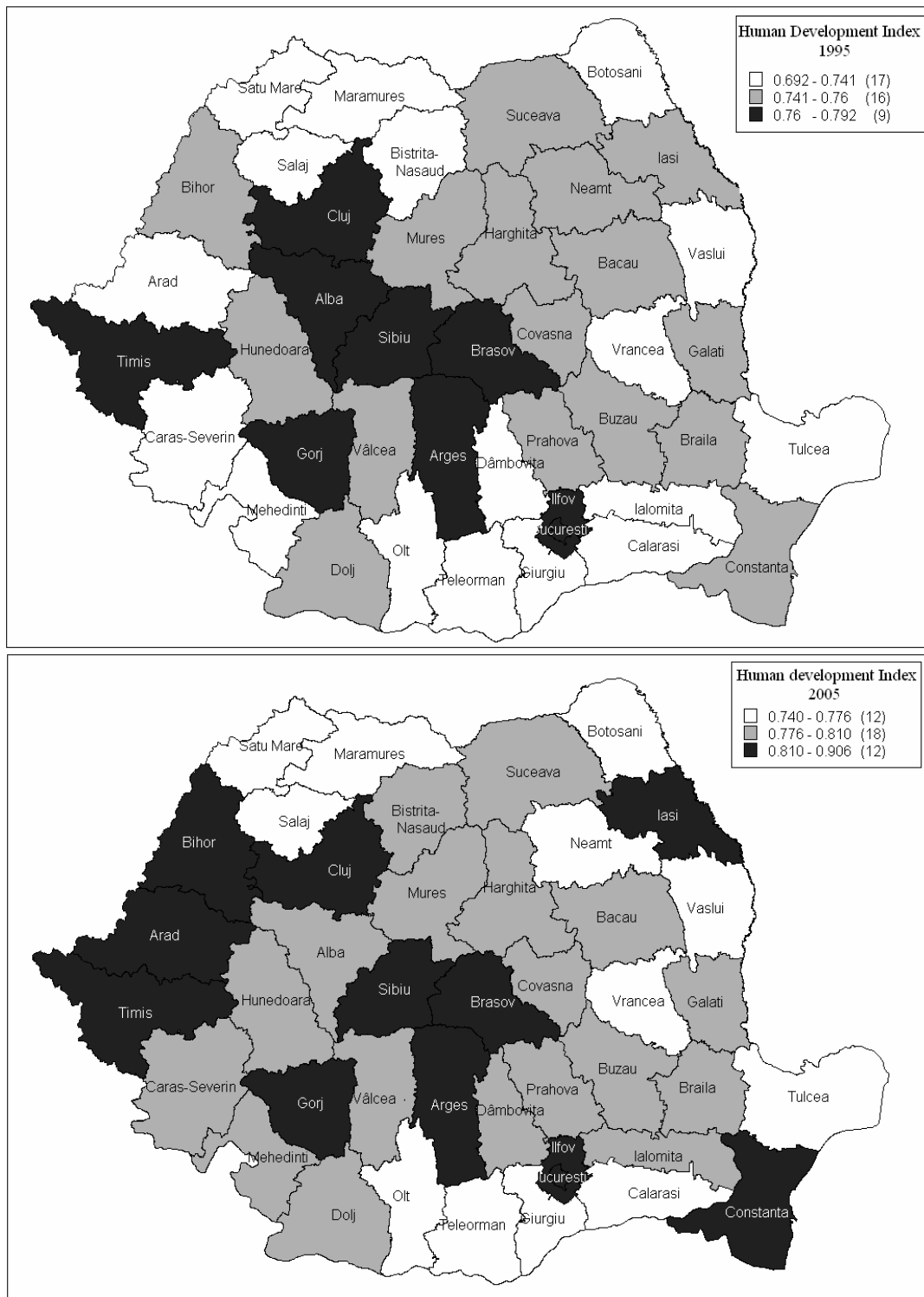
We have to mention that among the indicators forming the HDI, the schooling rates were affected by the most unfavourable changes, since both the life expectancy at birth and the GDP indicators were characterized by an increase in most of the regions. This decrease of the schooling rates was the result of the unfavourable demographic processes after the change of regime, namely the severe drop of the natural increase, as well as the intensity of demographic aging in some regions that have very much influenced the variations in the number of the pupils registered at primary and high schools. In some regions, all these are worsened by the high frequency of early school drop-outs, which represents a very severe social problem as well.

Since the Spearman correlation of the GDP per capita and the HDI indicates a strong, close connection ( $r=0,886$ ), we will mostly concentrate on analyzing the factors which have determined the modifications in the ranks of the counties according to the two indicators mentioned above. In this comparison, according to the HDI, Iași, Suceava, Dolj, Dâmbovița, Neamț and Sibiu counties have been much better situated than in the case of GDP per capita, due to the fact that in the past few years the evolution of both life expectancy and the schooling rate was more favourable than the above mentioned regions' economic efficiency on the whole. On the contrary, Satu Mare, Tulcea, Ialomița, Sălaj, Caraș-Severin and Covasna counties rank much higher according to GDP per capita, but lower in the case of HDI. This can mainly be attributed to the high rate of illiterates, the increase of school drop-outs and, last but not least, to the fact that life expectancy at birth is lower than the national average.

As I have pointed out, at last Romania has achieved some progress regarding the increase of the Human Development Index; however, among the countries of the European Union it occupies the last place, being exceeded even by Bulgaria (*Human Development Report, 2007*), while Slovenia with an index of 0.929 is the Central European state being on the best place in the UNDP, occupying the 29<sup>th</sup> place, followed by the Czech Republic – 36<sup>th</sup>, Estonia, Poland, Slovakia and Hungary that occupy the places 40<sup>th</sup>–43<sup>rd</sup>, with indexes between 0.883 and 0.879.

The analysis of the components of the Human Development Index reveals some important aspects: Romania is close to the EU25 average regarding the gross schooling ratio and the literacy rate of the adult population, the situation is rather unsatisfactory regarding the life expectancy and the GDP per capita, occupying the last place after Lithuania, Latvia and Bulgaria. This can also be attributed to the amount of money allocated to the public health system, which in 2006 was a mere 433 dollars/person, putting Romania on the last place in the EU again. Regarding the sums spent for children's education in primary school, in the 2003–2006 period, Romania has allocated 941 dollars per child, this sum being also the smallest in the EU.

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**Figure 4. Human Development Index in 1995 and 2005**

Source: the author, based on the data from the Human Development Reports<sup>5</sup>, 1995 and 2005

<sup>5</sup> The National Human Development Report for Romania, as well as the available data refers only to 2005.



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The differences in HDI are even greater than 0.100 if we consider that the country with the highest score, namely Ireland, has a value of 0.959, which in the case of Romania is only 0.837. The increase of the HDI values in western countries was much lower (stabilized between 0.5 and 2.5% in the 2000-2005 period) than in the countries belonging to Central and Eastern Europe, where the increase of this index oscillated between 2.5 and 5%. Thus, in 2007, according to the HDI the countries of the European Union could be classified as follows:

- countries with a high HDI (0.900-0.959): Ireland, Sweden, the Netherlands, France, Finland, Denmark, Spain, Austria, Belgium, Great Britain, Luxemburg, Italy, Germany, Greece, Slovenia and Cyprus.
- countries with an average HDI (0.850-0.900): Portugal, the Czech Republic, Malta, Hungary, Poland, Slovakia, Lithuania, Estonia and Latvia
- countries with a low HDI (0.800-0.850): Bulgaria and Romania.

We have to mention the fact that in some countries, even though they did not suffer losses of position, the education index shows decrease, mainly regarding the literate population in the case of Greece, Cyprus and Malta. Taking into consideration the favourable demographic situation of these countries (positive natural growth doubled by a positive migration growth), we can suppose that probably the greater number of the immigrants has contributed to the decrease of the average education level, as well as the increase of the rate of illiterates.

### CONCLUSION

The inequalities that have recently appeared in the economic and social spheres of the country can be directed towards a more homogenous spatial structure and with the help of adequate interventions these can be used for achieving territorial cohesion. First of all, the disparities regarding life expectancy at birth between women and men should somehow be diminished. However, in this process the improvement of the health system, the change in the population's life style, as well as the increase in living standards should be the first issues on the agenda. At the same time, in future, more attention should be paid to measures and support programs exclusively meant for increasing the accessibility to education, for reducing the inequalities existing between the levels of education, as well as the dedicated infrastructure and for overcoming the phenomenon of school drop-outs and the exclusion from the education system and the labour market. These measures would have to aim at taking over some of the burdens from the children's families (mostly the costs of education) since, in Romania, where a quarter of the population lives below the breadline, while another quarter hardly reaches this threshold, the high costs of education may lead to losing the battle for becoming a competitive knowledge-based economy. Therefore, in my opinion, only the increase of the amount of money allotted to health and education can lead to the decrease of the existing disparities and the development of a healthy and innovative human capital.

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