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THE HUMAN DEVELOPMENT INDEX IN RURAL HUNGARY: TERRITORIAL INEQUALITIES

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SUMMARY

The Human Development Index (HDI) of UNDP has aroused wide interest and discussion among researchers and policy makers. HDI is generally used for measuring national performance with regard to human welfare and development. It combines indicators of income, life expectancy and education into a single dimension.

The article explains the application of the HDI methodology at micro-regional level, and the correlation between HDI and several variables: rurality, unemployment, level of physical infrastructure, density of entrepreneurship, age distribution and migration.

At the time of investigations the national average of HDI in Hungary was 0.613. Only one micro-region reached the lower limit which is internationally considered to be a high value. The Nyírbátor micro-region was at the bottom, with a very low value of 0.133, which is less than 22 percent of the national average, and only 16 percent of the analogous value for Győr which is at the top.

The value of HDI and rural character are in close correlation to each other.

More than 90% of the micro-regions with a low HDI value belong to the group of predominantly rural regions.

The rural character of a given micro-region and the development level of its human resources are also correlated to the unemployment rate.

There is an interaction effect between HDI and rurality. This suggests that the positive effects of HDI on the analysed indicators are intensified by the level of urbanisation and the negative effects of rurality are intensified by a low level of HDI.^{1,2}

1. INTRODUCTION

The economic and social inequalities became more visible and significant in post-socialist Hungary. Rural and urban inequalities, as well as other regional differences, had existed during socialism too, but economic and

social welfare policies had tried to control them in different ways: by means of limiting economic investments into private and family businesses, and offering welfare and low-price services.

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² Szent István University Gödöllő, Institute for Rural Development and Existion. Maps and the significant part of calculations made by Béla Mokos. Special thanks to David L. Brown (Cornell University, USA) and Csaba Forgács for their very useful comments.

After the political change rural regions having favourable conditions, like the surroundings of Budapest and North-Western Hungary, produced significant infrastructural and economic development, whereas others, like the south-western and north-eastern regions of Hungary, exhibited a lower level of development or were even lagging behind. The income inequalities (Hoover indices) between towns and villages considerably increased between 1988 and 2000 (Nemes-Nagy, 2003). The Hoover index of income among micro-regions increased from 9.1 to 13.5 and among settlements from 10.8 to 15.6 between 1988 and 2000. According to this trend rural population are losers on average: they experience lower income, higher level unemployment, and a lack of services and infrastructure (Obádovics, 2001).

The observation and evaluation of socio-economic processes are the most important factors for those who work on the improvement in the lives of people living in poor and underdeveloped regions. During the last few years serious efforts have been made in Hungary to find an indicator suitable for characterising the general status of society and monitoring the on-going changes. There are enormous differences among rural areas in Hungary. A bigger unit of Hungary, like a county or even a region, is not suitable for demonstrating these characters of human resources. The purpose of the present paper is to suggest a Human Development Index, based on the HDI of UNDP, for the situation in Hungary, and to examine the character of spatial inequality at micro-regional level.

In international literature the most generally used indicator for such purposes is HDI³. It first appeared in 1990,

and has been calculated regularly in more than 160 countries since then. Human development concept, which was used in developing HDI, focuses on the economic performance of a country or region, and the characteristics of human resources.

HDI was developed in the framework of the UN Development Programme (UNDP). It comprises indices indicating life expectancy, education, and economic activity. These factors are undeniably the most important segments of human development, in addition to which HDI could also include other indices, such as: quality of life, condition of the natural environment, or other variables, e. g. the general state of human skills. However, the lack of data and difference between data structures keep these fields within considerable limits.

2. A BRIEF REVIEW OF LITERATURE

Literature related to social indicators is very large. All publications try to give a picture of human development by using different indicators concerning the conditions of and changes in society. Life expectancy, level of education, and economic activity (income) are parts of many models of social indicators (Bukodi, 2001). HDI itself is only a part of any broader social indicator model.

Relevant literature lists several approaches of measuring the level of human development. Carlucci and Pisani compared indicators of four fields in nine EU member states (Carlucci – Pisani, 1995). These indicators covered the following fields: economic performance (inflation, unemployment, GDP annual growth rate), social sector (infant mortality, number of hospital beds per 1000 population, secondary and higher

³ Human Development Report 1990, Oxford University Press, New York, 1990.

education enrollment ratio in the age groups given), life quality (life expectancy for men and women, flats per 1000 head), and natural environment (forest ratio, nitrogen oxide emission per km², ratio of flats connected to a biological water cleaning system). In every country concerned, experts were invited to evaluate these statistical indicators according to their importance. These evaluations reflected "subjective" factors since, according to the authors, experts from different countries attributed different importance to the various human development indicators.

Approaches based on the calculated indices and functions of incomes and income inequalities are limited because, on the one hand, the available information is uncertain and in no ways should be considered comprehensive, and, on the other hand, they are founded on the basic categories of market economy, excluding correlated informal economic activities (Brown-Kulcsár, 2001). However, the index numbers of poverty fail to refer to the human factors of life quality, even if exploring relative deprivation constitutes a shift from the restricted material approach.

Soon after the Human Development Index was introduced, its criticism was also published. Some authors criticised the human development concept backing the index, while others disapproved of the methodology itself, i. e. the way of creating the index (Husz, 2001).

According to Niels Lind (Lind, 1992) HDI is a major innovation yet faces significant methodological problems. One of these problems is the question of validity: whether the index measures issues it had to observe, and whether it is reliable, making the differences between countries interpretable. In this sense, e. g., do Bulgaria and Russia really have an

advantage over Portugal and Costa Rica as suggested by the HDI report?

E. g., Lind argues that literacy is part of culture. Twenty percent of the adult population is functionally illiterate in Canada, while the official illiteracy ratio is only 1%. Many English-speaking Canadians are functionally illiterate in regions where French is the official language. Chinese people should learn a set of 1000 symbols along with their multiple meaning in order to become literate, whereas people living in countries using Roman letters need to know only 50-100 characters.

Similarly, incorporating the value of GDP causes problems, as Lind asserts. He claims that this indicator is disadvantageous for countries where there is a significant ratio of herdsmen and nomad population, and where agriculture and latent informal economy is of fundamental importance. Yet this is the case with the majority of such countries.

In Lind's view, the main deficiency of the HDI concept and its application is the fact that its introduction was not preceded by a comprehensive scientific and social debate, although numerous countries were handicapped due to the problems listed above, and others were brought into advantageous positions by the HDI. McGillivray and White also formulated serious critical remarks on the application of HDI (McGillivray – White, 1992). They pointed out the redundancy between HDI and GDP, and also highlighted the difficulties of comparing the index data on a time scale. With regard to these deficiencies they suggested a limited application of HDI.

In 1990 Hungary was at the 30th place in terms of HDI, which was better than the 43rd place suggested by GDP

data.⁴ From that time on, Hungary's position has declined, reaching the all-time lowest 50th place in 1995. The decline was mainly due to the decrease in GDP, which could not be counterbalanced by a slight increase in life expectancy and level of education. Since then, Hungary has risen by 3-4 places (Magyarország vidékfejlesztési terve [Hungary's rural development plan], 2000). Accordingly the level of HDI has increased since 1990 (Nyitrai, 2001). However, the rank position of Hungary has not improved parallel to this change because the HDI level of other countries has risen too.

3. INTERNATIONAL METHODS AND RESULTS

The first UN Human Development Report (1990) has introduced a new method of development measurement. It assessed life expectancy, qualification, and income in order to create an index of human development. HDI has evolved as an index expressing social-economic differences. It is based on the difference between minimum and maximum values for every dimension, and indicates the position of a given country in a value domain between 0 and 1.

Apart from the comparison of countries, the main reason for the creation of the Human Development Index was to characterise differences between social groups and quality of life. The overall HDI values of different countries may often conceal substantial regional divergences in terms of the development of human resources; in other words, it is not sensitive to deviation within a given country. Thus, the value of the Human

Development Index and its components may show significant deviations between geographical regions, administrative units, towns, villages, sexes and ethnic groups as well, which are not reflected with the overall HDI value of the country in question.

The relative importance of social development indicators presents another problem. Every factor has to be appropriately weighted in the index. Despite the fact that several components of socio-economic development strongly correlate to each other, there is still enough deviation to choose appropriate weights for the end-result. In the HDI of UNDP, the three factors (life expectancy, literacy, and income) have equal weight. Namely, it is difficult to decide which component is most important; this is why all the three components got equal weight.

For those who are not at home in the literature on HDI, the logic behind the index is shown by the following formula.

Formula 1:

$$I_{ij} = 1 - \frac{\text{Maximum } X_{ij} - X_{ij}}{\text{Maximum } X_{ij} - \text{minimum } X_{ij}}$$

In this formula, I_{ij} is the i^{th} indicator in the j^{th} country. For example, I_{ij} is the indicator of life expectancy, and X_{ij} the indicator of life expectancy in a given country. Maximum X_{ij} is the maximum value from the sorted dataline, and minimum X_{ij} is the minimum one. The value of HDI of a country equals to the average of the three indicators.⁵

⁴ Christopher J. L. Murray: Development data constraints and the Human Development Index. Discussion Paper no. 25, May 1991. UNRISD Publications.

⁵ The equation was modified in Hungary by the Institute for World Economics when calculating county HDI values. The numerator is not the difference between the measured and the maximum values, but the difference between the measured and the minimum values. Therefore, it is unnecessary to deduct the quotient from 1 (Ed. Fóti, 1999, p. 64).

Formula 2:

$$\text{HDI}_j = \frac{I_{1j} + I_{2j} + I_{3j}}{3}$$

The index has a special methodological feature: if the lowest or the highest value happens to coincide with the lowest or the highest value for the countries, regions or micro-regions, the HDI value for a territory may easily be 0 or 1. If a small region is the last or the first in respect of the three index fractions, its HDI value will be 0 or 1. However, a 0 HDI value is rather confusing, since it suggests that the human development of people living in a given territory is zero. Yet this is not the point, since the HDI value illustrates the state of regions in relation to each other. Husz also noted that, provided there is a positive development of the same pace in every country or region (e. g. in respect of illiteracy or life expectancy at birth), the HDI value will not change. Thus, the index does not show the absolute development of human resources in a given region but demonstrates its position in the ranking (Husz, 2001). However, for the sake of simplicity, since 1994 UNDP has fixed the extreme values for comparative analyses between countries. Therefore the annually recounted values have become comparable as well.

E. g., in the case of education, the minimum value is 0 per cent and the maximum value 100 per cent, so in a country where adult literacy is 75 per cent the index value is 0.75⁶. Similarly, if the minimum value of life expectancy at birth in a group of countries amounts to 25 years and the maximum to 85 years, a country with a life expectancy of

55 years has a 0.5 value⁷. Using this method, the problems arising from the different dimensions of the main factors can be eliminated.

In certain cases the determination of extreme values generates new problems. While it is possible to set the lowest and highest value for enrolment (0% and 100%), it is not simple to determine the minimum and maximum value for life expectancy at birth. There is no guarantee that the extreme values will not be surpassed, and thus problems will have to be faced (e.g. in case of Rwanda where life expectancy at birth was only 24 in 1994). By setting the extreme values of GDP in such an arbitrary way, similar difficulties will arise.

Indicators used for the calculation HDI:

UNDP uses the following four indicators for the calculation:

- Life expectancy at birth
- Adult literacy rate
- Rate of enrolment in primary, secondary and higher education (hereinafter: enrolment rate)
- GDP per capita

Life expectancy at birth. Life expectancy calculations published by the United Nations Population Division include 5-year averages. Calculations for 1998 were made by means of linear interpolation of the average of 5 years. However, other indices are based on annual calculation.

Adult literacy rate. The indicators for adult literacy rate are based on a re-estimate and projection of the estimates of UNESCO. The latter combined the estimates of UN Population Division with

⁶ $1 - (X_{\text{max}} - X) / (X_{\text{max}} - X_{\text{min}}) = 1 - (100 - 75) / (100 - 0) = 1 - 25 / 100 = 0,75$

⁷ $1 - (X_{\text{max}} - X) / (X_{\text{max}} - X_{\text{min}}) = 1 - (85 - 55) / (85 - 25) = 1 - 30 / 60 = 0,50$

the newest literacy data received by national censuses.

Enrolment rate. Enrolment rate equals to the number of children enrolled in primary, secondary and higher education, divided by the number of children within the respective age group corresponding to each level of education.

GDP per capita. GDP indicators used in the report were provided by the World Bank, and they always derived from the latest research by the International Comparison Programme. The research covers 118 countries, and in addition the World Bank provided data for another 44 countries. Research was carried out according to world regions. For this reason there are differences between currencies, classification methods, and aggregation formulas. As a result, data from different regions cannot be directly compared.

From these four indicators, three indexes were created. The first was life expectancy at birth calculated using Formula 1. The second was the education index calculated from the adult literacy rate and the enrolment rate with weights of 2/3 and 1/3, respectively. The third index was the GDP per capita based on the calculation in Formula 1. Finally, the HDI value is given by the mean of the three indexes (Formula 2).

Classification according to human development: All countries of the world are classed into three groups according to their human development index: high human development (HDI of 0.800 or above), medium human development (between 0.500 and 0.799), and low human development (below 0.500).

Classification according to income: All countries are classified according to income categories used by the World Bank: high income (per capita GNP of \$9,361 or more), medium income (be-

tween \$761 and \$9360), and low income (\$760 or less).⁸

Because of differences in statistical practices and availability of data in different countries, numerous efforts have been made to substitute certain elements of HDI. Moreover, components can change depending on political and economic changes in a country, and in terms of priorities they lay down for themselves. Employment or unemployment may constitute components reflecting the present situation of a country (e. g., the countries of Eastern and Central Europe). The substitution of factors is also common for the main indicators: e. g., literacy can be replaced by the level of qualification, or life expectancy by mortality rate.

4. TERRITORIAL INEQUALITIES AND HDI IN HUNGARY

Social, economic and regional differences may be well-known, but HDI shows them more clearly and, in addition, within any individual country separately. The 1993 Human Development Report was the first to include detailed data on US ethnic groups (whites, Afro-Americans, Hispano-Americans). The findings sparked off a debate of social policy experts and decision-makers. To describe regional units within a country by HDI, the latter has been previously calculated in several countries (e. g. Poland, Brazil, Egypt, Mexico, Germany, India etc.). The present study includes a methodological experiment aimed at the adoption of the UN-approved human de-

⁸ Human Development Report, UNDP, New York, 2000, p 145.

velopment indicator for the description of regional differences within Hungary⁹.

HDI analyses in regional aspect were first published in Hungary as early as in the early nineties. Nemes-Nagy adopted the regional aspect to Hungarian application (Nemes-Nagy, 1998) publishing data and comparative analyses on county level.

The Institute for World Economics of the Hungarian Academy of Science conducted a comprehensive analysis of the features of human resource development (Fóti, 1999). Their calculations concerning HDI remained on county level, yet revealed specific differences. They identified counties of improving and declining position in 1996/97 as compared with 1990 data. It was observed that the group of counties with a value below the 1990 average have diverged: some of them were slowly catching up, while others were still declining.

The authors of the present study were the first to make a more detailed regional analysis and comparison of statistical micro-regions based on 1998 data (Obádovics – Kulcsár – Mokos, 2000; Obádovics – Kulcsár – Mokos, 2001). The index worked out this way could be used in respect of micro-regions within the country, and therefore it could be suitable for highlighting micro-regional differences with respect to the basic idea of HDI.

In the project described in the present paper the authors' main concern was to find an index suitable for comparing the conditions of human development in the micro-regions of Hungary. The application of a detailed Human Development Index would help political decision-makers in balancing social inequalities. It could also contribute to the reconsideration and re-structuring of welfare policy and the social safety net.

5. METHODOLOGY APPLIED AND RESULTS OBTAINED IN HUNGARY

Following three indices were created for calculating the Human Development Index for Hungarian micro-regions:

- Education index
- Income index
- Index of life expectancy at birth

Education index. Two indicators were used for the calculation of this index: the rate of literacy among people above six years, and the average number of grades finished by them. The two indices were combined by weighting, the rate of literate people having a weight¹⁰ of 2/3, and the average number of grades finished of 1/3. When calculating the index for literate people above the age of 6, X_{\max} equals 100, which implies that, in an ideal case, every adult is literate.

Income index. When calculating this index, income tax data per resident were used (APEH SZTADI 1999).

Index of life expectancy at birth. This index was calculated from 5-year average values (KSH 1996-2000).

To calculate HDI, the arithmetical mean of the three indices was computed. HDI values fall between 0 and 1 where four values indicate a better position in human development classification.

Hungarian micro-regions were classed into three groups by the human index: micro-regions with a high (above 0.600), medium (0.400-0.599), and low (below 0.400) human index. The maximum HDI value was 0.812 (in the micro-region of Győr, Győr-Moson-Sopron county), and the minimum was 0.133 (Nyírbátor, Szabolcs-Szatmár-Bereg county). The national average was 0.613.

The difference between the minimum and maximum values is sextuple. This huge disparity is the very reason why

⁹ In 2000, Hungary had 19 counties, 7 regions, 150 micro-regions, 23 cities, 195 towns, and 2913 villages (2000).

¹⁰ Weighting methods were based on the education index as calculated by UN.

some regions lag behind in economic performance and are not capable of attracting resources for their development (see the HDI 2000 map).

Similarly, there are enormous differences in respect of counties and regions as well. Only five counties (Győr-Moson-Sopron, Vas, Veszprém, Fejér, and Komárom-Esztergom; all of them are in Transdanubia, the western part of Hungary) have index values above the national average. On the other hand, Somogy, Borsod-Abaúj-Zemplén, and Szabolcs-Szatmár-Bereg counties (all of

them taking place in the south western and north eastern part of the country) stand last. Regional differences are also striking: the western part of Transdanubia is on the first place with 0.891, while the north-eastern part of the Great Plain stands last with only 0.164¹¹.

The level of urbanisation is also responsible for the differences in HDI. Micro-regions that are predominantly urban have an average HDI of 0.64, followed by significantly rural (0.58) and predominantly rural regions (0.38)¹².

Table 1.

Diversity of micro-regions by rurality and level of HDI in Hungary

Rurality	Low HDI		Medium HDI		High HDI		Altogether	
	Number of micro-regions	%	Number of micro-regions	%	Number of micro-regions	%	Number of micro-regions	%
Predominantly rural regions	54	91	31	53	7	22	92	62
Significantly rural regions	5	9	24	41	20	62	49	33
Predominantly urban regions	-	-	3	6	5	16	8	5
Altogether	59	100	58	100	32	100	149	100

Note: There is no case of a predominantly urban region with low HDI.

More than 90% of the micro-regions with low HDI values belong to the group of predominantly rural regions. This percentage is still over 50% in the group of micro-regions with medium HDI values. However, among micro-regions with high HDI values this ratio is reduced to 22%. Fifty nine percent of the 92 predominantly rural micro-regions belong to the group with low HDI values, and only 8% have high HDI values. Sixty two percent of the predominantly urban micro-regions have high HDI values, and none of them belong to the group with low HDI values.

HDI value and rural character are in close correlation. Table 1 demonstrates that there are predominantly rural micro-regions with high HDI values and, contrary, not all urban micro-regions exhibit high HDI values.

¹¹ Six regions of Hungary include three counties each, whereas the central region consists of Pest county and Budapest.

¹² This typology is based on the percentage of population living in rural communities: „Predominantly Rural” = >50%, „Significantly Rural” = 15-50%, „Predominantly Urban” = <15%, „Rural” communities” = local communities with a population density below 120 inhabitants/km². In: Creating rural indicators for shaping territorial policy. OECD Publication Paris. 1994.

The following micro-regions are predominantly rural according to OECD criteria, and yet exhibit high HDI values: Sárvár, Mosonmagyaróvár, Csorna, Celldömölk, Csepreg, Gyöngyös, and Gárdony. Predominantly urban micro-regions with medium HDI values are as follows: Tatabánya, Miskolc, and Gödöllő.

The following tables illustrate the correlation of some demographic, economic and consumption indices to HDI values. The key demographic and eco-

nomic variables of interest are: migration, unemployment, and entrepreneurship. A standard of living variable, the number of cars per 1000 inhabitants, is also being used. The rural character is continuously considered a controlling variable.

The annual migration balance calculated for the period of 1994-2000 reflects that there are major differences between micro-regions in respect of rural character and HDI values.

Table 2.

Average annual migration balance between 1994-2000
(per thousand inhabitants)

Rurality	Low HDI	Medium HDI	High HDI	Average of data
Predominantly rural	-0,7	0,0	2,3	-0,2
Significantly rural	-2,6	2,6	2,5	2,0
Predominantly urban	-	5,6	12,7	10,0
Average of data	-0,9	1,4	4,1	1,1

It was found that the negative migration balance is only characteristic of micro-regions with low HDI values, since high HDI values entail positive balances even in the predominantly rural category. The same phenomenon can be observed

among significantly rural micro-regions. It is apparent that micro-regions with low HDI values generate migration losses regardless of their rural/urban character, and thus their HDI values continue to decline.

Table 3.

Unemployment rate in 2000
%

Rurality	Low HDI	Medium HDI	High HDI	Average of data
Predominantly rural	10,9	6,8	3,8	9,0
Significantly rural	8,7	6,1	4,1	5,6
Predominantly urban	-	5,5	3,2	4,1
Average of data	10,8	6,5	3,9	7,6

The rural character of a given micro-region and the development level of its human resources are also correlated to the unemployment rate. However, it is also remarkable that HDI is much more

differentiated in predominantly rural regions. On the other hand, the rural character has a greater influence in the group of micro-regions with low and medium HDI values.

Table 4.

Number of entrepreneurs per 1000 inhabitants in 2000

Rurality	Low HDI	Medium HDI	High HDI	Average of data
Predominantly rural	48,6	61,4	67,0	54,3
Significantly rural	54,8	73,0	90,7	78,4
Predominantly urban	-	86,0	91,4	89,4
Average of data	49,1	67,5	85,6	64,1

HDI differentiates the number of enterprises in every category. There are more enterprises in predominantly urban regions with high HDI values than in predominantly rural ones with low HDI

values. As HDI values increase, the number of cars per 1000 inhabitants increases considerably. Therefore, the HDI value has a significant influence within the same rural/urban category.

Table 5.

Number of cars per 1000 inhabitants in 2000

Rurality	Low HDI	Medium HDI	High HDI	Average of data
Predominantly rural	180,0	203,9	236,7	192,3
Significantly rural	191,2	228,7	252,6	234,6
Predominantly urban	-	231,8	270,4	255,9
Average of data	180,9	215,6	251,9	209,7

All the above tables suggest that there is an interaction effect between HDI and rurality. This means that the positive effects of HDI on the analysed indicators are intensified by a high level of urbanisation, and the negative effects of rurality are intensified by a low level of HDI. The present study was aimed at pointing out some of the typical correlations demonstrating the applicability of the HDI methodology. However, further analyses are necessary to explore the relationship between HDI, socio-economic environment, and ongoing processes.

6. CONCLUSIONS

The presented data demonstrate that the authors' methodological experiment

was successful. By adapting HDI to Hungarian conditions they have managed to differentiate micro-regions. The national HDI average of 0.613 is mediocre. Only one micro-region, Győr, reached the lower limit of what is internationally considered a high value. The Nyírbátor micro-region is on the bottom with a very low HDI of 0.133, which constitutes less than 22 per cent of the national average, and only 16 per cent of the analogous value for Győr taking place on the top.

The development of human resources is closely related to the widening of choices and alternatives, the lack of which indicates that there are fewer chances for people, not each of whom having the chance for a long, creative and healthy life, high standard of living,

freedom, healthy environment, respect of others, etc. In terms of human development, neediness and poverty are responsible for much more trouble than simply the lack of material resources.

The authors have created and evaluated some of the above mentioned HDI indices. The findings of the present analysis are suitable for monitoring and strategy planning, and could be effectively used by decision-makers. Of

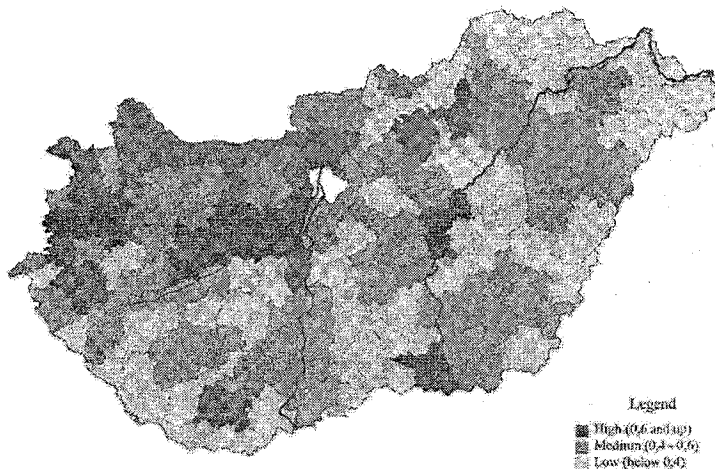
course, the publication of the results of the 2001 population census will bring about a qualitative change in data processing.

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Map

Human Development Index in Hungary by micro-regions in 2000



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**AZ EMBERI FEJLŐDÉS INDEXE A VIDÉK MAGYARORSZÁGÁN:
TERÜLETI EGYENLŐTLENSÉGEK**

OBÁDOVICS CSILLA – Dr. KULCSÁR LÁSZLÓ

Az UNDP emberifejlődés-indexe (HDI) széles körű érdeklődést és vitát váltott ki a kutatók és politikusok körében. A HDI-t általában a nemzeti teljesítmény mérésére

használják, tekintettel az emberek jólétére és a fejlődésre. A HDI egy dimenzióba egyesíti a jövedelem, a várható élettartam és az oktatás mutatóit.

A cikk ismerteti a HDI számításának módszerét mikro-regionális szinten, valamint a HDI és több változó – vidékiség, munkanélküliség, a fizikai infrastruktúra színvonala, vállalkozó-sűrűség, kor szerinti megoszlás, migráció – közötti kapcsolatokat.

Magyarország HDI-értéke országos átlagban 0,613. Egyetlenegy mikro-régió, Győr érte el annak a tartománynak az alsó határát, amely nemzetközi viszonylatban magas értéknek számít. A másik véglet Nyírbátor, amelynek HDI-értéke igen alacsony: 0,133 – kevesebb mint az országos átlag 22%-a, és mindössze 16%-a az éllovas Győrének.

A HDI értéke és a vidéki jelleg szoros korrelációban áll egymással.

Az alacsony HDI-értékű mikro-régiók több mint 90%-a a túlnyomóan vidéki jellegű régiók közé tartozik.

Valamely mikro-régió vidéki jellege és humán erőforrásainak fejlettségi szintje korrelációban áll a munkanélküliségi rátával is.

A HDI és a vidékiség között kölcsönhatás áll fenn. Ez azt sugallja, hogy a HDI pozitív hatásait az elemzett mutatókra fokozza az urbanizáció szintje, és a vidékiség negatív hatásait fokozza az alacsony HDI-szint.