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Geospatial Study of Human Development Index of Ukraine in the Light of Regional Indicators

Abstract: The article reveals the peculiarities in the formation of comfortable life features in the regions of Ukraine based on the analysis of the components and the human development index. In particular, it reveals the essence of the human development concept as one that enables people to develop their potential, to live productively and creatively in tune with their needs and interests. Its goal is to empower each individual in the chosen environment – country, region or specific locality. Human development involves balancing the formation of human abilities to improve their conditions of life. However, the level of regional human development will depend on the potential of the designated area. Since 2012, Ukraine has updated the method of estimating regional Human Development Index by which we can calculate the regional human development index. It includes 33 indicators grouped into six blocks in accordance with the basic aspects of human development. These are reproduction, social position, comfortable life, well-being, worthy work, and education. These indicators were selected on the basis of suitability for the annual calculation of provision available to the State Statistics Service of Ukraine, reliability estimates at the regional level under the specific issues of human development in Ukraine, unambiguous interpretation of the impact on human development, lack of high correlation between individual performance and adequacy of static and dynamic variation. According to the ratings of Human Development Index in 2012, conducted by the State Statistics Service of Ukraine and the Institute of Demography and Social Studies of M.V. Puhta, regions that constantly show high indicators of human development index are Crimea, Kharkiv, Lviv, Transcarpathian and Poltava regions. The largest group consists of regions with the average index indicator of the human development (most regions of Ukraine). Finally, the third group consists of regions with the lowest human development index (Kirovograd, Donetsk, Sumy regions). The results of calculations of regional Human Development Index can serve as a basis for identifying key issues and priorities of each region.

Keywords: Human Development Index, regional grouping regions, social development of the territory, territory of social cohesion

INTRODUCTION

Creating comfortable living conditions is a priority in all democratic societies. Traditionally, the basis of this desire is the combination of several elements mentioned, which determine

comfortable living conditions that are included in the concept of “regional human development.” This work is designed to determine the features of the formation of a definition in modern Ukrainian scientific literature.

Human development can be defined as enabling people to fully develop their potential, to live efficiently and creatively in harmony with their needs and interests (*Regional...*, 2001: 4). The main aim is to provide each person in the country, region or specific locality with individual opportunities. O. Topchiev defines human development as a dynamic concept, which represents the expansion of choices, including the ability to live a long life and a good life, the ability to get an education, access to the means that provide a decent living standard (Topchiev, 2005:241).

Human development involves considering the formation of human possibilities to improve their conditions of life. However, the level of regional human development will depend on the potential of definite area.

Thus, the aim of this publication is to identify geospatial features of the Human Development Index regions of Ukraine in the light of individual indicators of social development areas. The analysis is based on the dynamics of these indicators over the period from the year 2000 to 2012.

Significance of the study. Research in the field of welfare at the regional level in Ukraine has been conducted by scientists in many areas, and therefore has a pronounced interdisciplinary character. Nevertheless, we will mention only the Ukrainian geographers that were interested in the subject matter concerned in this paper. Among these scientists, the following names should be mentioned: M. Bagrov (2005), M. Bagrov, L. Rudenko, I. Chervaniov (2012), O. Topchiev (2005), A. Shabliy (2001, 2012). Their research should create a thesis for the issue of geospatial analysis at the national or regional level.

Thus, O. Topchiev developed the technique for the assessment of the quality of life in the system indicators (Topchiev, 2005). A. Shabliy in his studies (Shabliy, 2001, 2012) analyzed the importance of social indicators for well-being and social situation of the population. (Bagrov i in., 2012) defined the modern social orientation of the Ukrainian society based on his research.

RESULTS AND ANALYSIS.

METHODOLOGICAL AND THEORETICAL FOUNDATIONS OF RESEARCH

The human personality became the epicenter of progress, because human development is not only a main goal, but also the most important determinant factor of social development. In modern Ukraine, studies often correctly stated that the economy couldn't be a main goal but a means of solving social problems of the country. In the early twentieth century an outstanding Ukrainian scientist M. Tugan-Baranovsky insisted that the task of the government is to provide the citizens with welfare and increase their cultural level. In other words, the concept established at that time outlined the studies, but now it's time to move from the empirical to the complex research.

Since the year 1993, when Ukraine was first included in the UNDP report, its overall rating has declined, transitioning Ukraine from the group of countries with high human development to the group of countries with medium human development. During the recent years, Ukraine has made progress in human development, which is measured by the Human Development Index. It is the summary measure of long-term assessment of progress in three main directions of human development – the opportunity to live a long and healthy life, access to knowledge and GNI per capita.

From the year 2001 to 2011, in Ukraine there was a method of assessing the level of national human development (Resolution of the Board of the State Statistics Committee of Ukraine and the Presidium of the National Academy of Sciences of Ukraine (05.04.2001 and 14.03.2001 № 182/76), according to which the practice of the state statistics introduced annual calculations of integrated indicators since the data for the year 1999. Using the proposed method ensures the validity of the scientific support systematic calculation of indices of human development in Ukraine in the comparison of socio-economic development in certain regions of the country, the definition of each region by a universal scale. It allows performing comparison of a two methodologically correct analyzes of basic indicators: by a combined index and each of the nine indexes of certain aspects of human development (*Regional...*, 2012, 2013).

In the year 2012, a new method was launched. It calculates the regional human development index including 33 indicators united into six blocks in accordance with the basic aspects of human development – reproduction, social position, comfortable life, prosperity, decent work and education. These indicators were selected because of the suitability for the annual calculation of provision available to the State Statistics Service of Ukraine, as well as the reliability estimates at the regional level, under the specific issues of human development in Ukraine, unambiguous interpretation of the impact on human development, lack of high correlation between individual performance, and the adequacy of static and dynamic variation. Thus every aspect of human development indicators is monitored by the respective unit, forming a system of human development indicators regions that form the whole regional Human Development Index.

Let's analyze these indicators in the context of defined blocks.

In the block “Reproduction of Population” the base is the total fertility rate parameters giving the average number of children that a woman gives birth to for the whole childbearing period, as the most valid indicator of the fertility activity and the process of the succession of generations in the country; infant mortality and life expectancy at birth; and the probability of men and women living to the age of 65.

Block “Social Status” figures represent crime rate that characterizes the general criminal situation; an indicator of the number of patients with new cases of active tuberculosis (per 100 thousand population), showing the intensity of the deployment of the TB epidemic and effectiveness of arresting its spread; the number of patients with new cases of alcoholism and alcoholic psychosis, mental and behavioral disorders due to the use of drugs and other psychoactive substances (per 100 thousand people); indicator of the number of orphans and children deprived of parental care (per 100 thousand children aged 0–17 years), thus

describing the occurrence of the instances of child and, to some extent, the effectiveness of social programs to reduce it; adolescent fertility rate (number of children born to mothers between 15–17 years of age, 10 thousand girls of appropriate age), which characterizes the rate of teenage birth rate, which is a threat to the health of the child and the mother, leading to problems (delay) in social adaptation and mother's care and the education of children; and the rate of deaths from intentional self-harm (100 thousand people), demonstrating the mental health of the population.

The level of life comfort is measured by the provision of housing in the urban areas. The percent of apartments (single-family homes) equipped with a centralized sewerage and drainage and centralized gas supply in rural characterize comfortable accommodation in terms of basic amenities in apartments. An integral indicator of the environment is an assessment of indicators of land resources, water and air, as well as planned capacity of the outpatient clinics (10 thousand people) characterized by the number of visits for the shift in a medical facility (clinics, dispensaries, clinics, outpatient department of hospitals, ambulance health care, etc.) that provide appropriate medical assistance and show the availability of the health services. Volume of public services (for 1 person), in UAH describes the availability of services, and the ability of the population to use them.

Block "Welfare" is assessed according to the criteria of poverty, percentage of households that made savings or buy real estate; minimum number of food baskets, which can be purchased on average revenue reflects the level of welfare provision on the food products; gross regional product (per 1 person); and the proportion of households that have a steady base set (TV, refrigerator, washing machine).

Level of decent work is measured through the level of employment; unemployment rate; the proportion of workers who are paid wages less than 1.5; proportion of employees who work in conditions that do not meet health and safety standards; ratio of the average and minimum wages; and the coverage of social insurance.

In the block "Education", criteria areas follows: pre-enrollment schools for children aged 3–5 years; the coverage of secondary education for children of school age (6–18 years); the proportion of people with no education or below the higher education among people of 25 years and older; average years of schooling of people aged 25 and older; and an average score for the results of the external independent evaluation (in all subjects), which describes the overall quality of school education.

These methodological approaches are also reflected in behaviorist theories (also referred to as the spatial theory of human behavior). The given theory is considered to be interdisciplinary. Another founder of this theory, Julian Volpert in 1964 emphasized that the geography of spatial behavior focuses on the social and psychological mechanisms that have a strong spatial component and act on a spatial structure (Shabliy, 2012: 178). Behaviorist approach allows us to investigate the decision-making processes at the territorial level in social and political behavior of the population of a particular region. This assessment of social indicators determines the location of the population in a certain area of the space-time coordinates. Empirical studies give the indices of human development in the geospatial context. Based on the analysis of six major blocks that characterize basic aspects of human

development, the Institute for Demography and Social Studies named after M.V. Ptuhly came up with characteristic components of the Human Development Index. Every year there is rotation of the regions based on specified parameters. According to the ratings of the Human Development Index in 2012, conducted by the State Statistics Service of Ukraine and the Institute of Demography and Social Studies of M.V. Ptuhly, there are three groups of regions (*Regional... 2012: 20*):

- leading regions that by the results of calculations of the Human Development Index rank a leading place;
- regions of intermediate groups that, by the results of calculations of the Human Development Index occupy a middle position;
- bottom regions, which according to the integral calculations receive last places.

Regional leaders are relatively stable, but they are also a very colorful and controversial stock. Permanent leader is the Kharkiv region. The Kharkiv region is in the top three ranking in the development of the labor market and the level of education, and is a leader in the state and health, material well-being, the living conditions of the population and social environment. But there are some problems with the ecological situation in the region and the financing of social services.



Fig. Human development index

Source: own study based on *Regional...*, 2013

During the period of the years 2010–2012 leader the Human Development Index is the western region Transcarpathia, and periodically – Lviv. Each of them has its leading components. The Transcarpathian region is traditionally characterized by a high fertility rate, longevity of the male population (which is not typical for Ukraine), a high level of

accomplishment in rural areas (including the provision of public services), safe environment and a high level of coverage in the secondary education school age.

Lviv region is also one of the leading ones. It takes the fourth place according to the index of human development funding and has a leading position in the life expectancy at birth. Almost all indicators of social environment have a relatively large value compared to other blocks. An important feature is that the region has virtually no areas of concern among the indicators of Human Development Index.

Among the regions with a high level of Human Development Index are also the Autonomous Republic of Crimea and the Poltava region.

Crimea is characterized with a high comfort life by a significant proportion of houses and apartments equipped with centralized sewerage and drainage and gas supply. These indicators characterize comfortable accommodation with basic amenities in rural areas as well as in urban areas, and they are quite high. In addition, the region is characterized by a high index of the level of the sales services, that to some extent characterizes service availability, and the ability to use them. The structure of the welfare in the region characterized by a high per capita gross regional product, which is one of the most important indicators of economic development of the region and therefore is the basis of welfare. Moreover, the strengths of the area include a high level of employment and a relatively low official unemployment level.

The Poltava region has one of the lowest infant mortality rate, which is a sensitive indicator of the impact of medical, demographic, and social well-being of the population. In addition, the region is marked by high capacity of the planned outpatient clinics, which characterizes the accessibility to health services. The area stands out with a high level of security of the food products, measured through indicators of food basket.

Regions of the main group. Regions of the group occupy the places between 6 (Kyiv region) and 22 (Lugansk region), in a general index of regional human development. In turn, they can be divided into regions which in recent years have improved or held their position in the overall ranking, and regions whose position in the ranking dropped.

In the first group, the regions worth mentioning are: the Podniprov'ya area – Zaporizhia, Cherkassy, Poltava and Western – Ternopil and Ivano-Frankivsk.

The stability of Zaporizhia region in the indicators of regional Human Development Index is based on the on the indicators of welfare – the majority of the population identifies themselves with the middle class, a large proportion of the adult population has deposits in financial institutions as well as significant purchasing power.

Cherkasy region has greatly improved its position in the ranking due to significant improvement in welfare and working conditions.

Ternopil region is characterized by a high level of average life expectancy at birth and a high proportion of citizens obtaining secondary education.

Ivano-Frankivsk region has a high rate of reproduction of the population – including the total fertility rate, low child mortality and long life expectancy, as well as low crime rate and a minimal number of orphans and children deprived of parental care. The region also has good index of housing in the urban areas and an increased level of the secondary education of children.

Other regions included in this group (Crimea Republic, Mykolaiv, Dnipropetrovsk, Volyn, Rivne and Luhansk regions) had significant fluctuations in the overall rankings in a relatively short period of time (2010–2012). In these areas there are significant variations in the overall crime situation, characterized by an intense spread of the diseases caused by substance abuse, fluctuations in the amount of the sale services, and constant fluctuations in employment, as well as a relatively low percent of the social insurance coverage for the employees.

The bottom regions. In this group are the areas that consistently show the worst regional components of the Human Development Index – Donetsk, Kirovograd and Sumy.

The cause of the low position of the Donetsk region are low indicators associated with reproduction of the population, particularly one of the lowest total fertility rates, a high rate of infant mortality, low life expectancy at birth, and a relatively low probability of men and women living to the age of 65. The improvement of living in this area is quite low because of a small percent of houses in rural areas equipped with centralized sewerage and drainage and centralized gas supply.

The main criterion for putting the Sumy region in the bottom group is a high rate of poverty, calculated in terms of median level (a special formula which helps calculating the total charge per adult is based on the following equivalence scale: 1.0 (first adult): 0.7 (other adults): (children).

The ranking place of the Kirovograd region has improved, but it did still remains in the bottom group. The positive developments have taken place in almost all human development indicators of evaluation, but unfortunately the demographic development and the state of the social environment are very damaging for the rating of the region.

Tab. 1. Index and rating index of regional human development in the regions of Ukraine

Regions	Years							
	2000		2005		2010		2012	
	Index	Rating place	Index	Rating place	Index	Rating place	Index	Rating place
Crimea Republic	0,577	3	0,493	9	0,494	7	0,657	6
Vinnitsa	0,551	6	0,440	23	0,435	24	0,611	21
Volyn	0,485	21	0,463	18	0,475	16	0,623	15
Dnipropetrovsk	0,496	20	0,484	11	0,480	13	0,623	14
Donetsk	0,450	26	0,397	27	0,401	27	0,626	12
Zhytomyr	0,496	19	0,452	20	0,438	23	0,590	25
Transcarpathian	0,547	9	0,505	6	0,488	8	0,678	2
Zaporizhia	0,508	16	0,457	19	0,463	20	0,659	5
Ivano-Frankivsk	0,509	15	0,482	13	0,487	9	0,626	13
Kyiv	0,539	10	0,483	12	0,532	4	0,653	7
Kirovograd	0,501	18	0,419	25	0,423	26	0,590	24
Lugansk	0,412	27	0,412	26	0,428	25	0,628	11
Lviv	0,555	5	0,502	8	0,483	12	0,666	4
Mykolaiv	0,468	25	0,466	16	0,472	17	0,652	8
Odessa	0,507	17	0,468	14	0,455	21	0,638	10
Poltava	0,576	4	0,506	5	0,510	6	0,640	9

Rivne	0,482	22	0,504	7	0,465	19	0,616	19
Sumska	0,474	24	0,446	23	0,444	22	0,596	23
Ternopil	0,533	12	0,466	15	0,486	10	0,622	17
Kharkiv	0,549	7	0,537	3	0,561	3	0,691	1
Kherson	0,482	23	0,447	21	0,468	18	0,599	22
Khmelnysky	0,537	11	0,508	4	0,516	5	0,611	20
Cherkasy	0,548	8	0,492	10	0,485	11	0,622	16
Chernivtsi	0,521	14	0,437	24	0,479	14	0,673	3
Chernihiv	0,523	13	0,466	16	0,475	15	0,618	18
City of Kyiv	0,717	1	0,659	1	0,698	1	0,673	1

Regional..., 2011, 2012, 2013

Each of the above regions has its own specific problems in human development factors. At the same time, finding a solution for them is possible only through the development and the introduction of complex or targeted social programs aimed at providing all or some aspects of human development, provided they coincide with the strategic objectives of social policies.

TRENDS OF THE REGIONAL RANKINGS

General provincial regions in the first decade of the XXI century developed inconsistently. There are regions that almost always took a leading place in regional Human Development Index, other fall behind the leading group and there are also regions that consistently have average percentages that practically do not change their position, as well as regions lying in the bottom group, that are consistently placed in the bottom part of regional Human Development Index. According to the analysis of such trends, we can predict the development of regional indicators for regional Human Development Index in the near future.

Regions that constantly occupy a high position

This group includes leading regions, which may indicate a continued focus on the factors of human development. This group of regions includes Kharkiv, Lviv and Transcarpathian regions.

Regions that fluctuate at the top

These regional territories, despite having a leading place in the rankings in some years, have a more unstable position due to significant fluctuations in individual indicators of social development. This group includes The AR of Crimea and Poltava region.

Regions that consistently show average results

This is the largest group. The components of the human development of regions do not have an impact on these regions in the general ranking, as the regions have different positive

and negative domains. Thus, if the western regions (Ternopil, Ivano-Frankivsk, Volyn, Rivne regions) of this group have relatively high ratings on the social environment and demographic development, the review of the regional funding programs of human development could provide significant results to improve their rating. Other areas in the group (Zaporizhzhya, Poltava, Odessa, Cherkassy, Mykolaiv, Dnipropetrovsk, Lugansk regions) have a high level of comfortable living in urban areas and a high rate of the consumer services.

Regions that fluctuate at the bottom

The group includes Vinnitsa, Lugansk, Khmelnytsky and Chernihiv regions. They are characterized by spontaneity, uncontrollability and lack of centralized levers of influence on the human development process, and that, according to the results of the Human Development Index between the years 2000–2012, were among the least socially oriented.

Regions consistently at the bottom

This group includes the areas that consistently take the last places, according to indicators of Human Development Index. These are Donestk, Kirovograd and Sumy regions.

To stabilize and improve the situation in the social sphere, the last two groups need to make an analysis of the factors of human development for all segments of its hierarchical structure, and develop a comprehensive system of social activities aimed at:

- increasing the value of skilled labor;
- ensuring the labor the right to social security, education, health and housing;
- development of social infrastructure and accessibility to basic social services;
- policies supporting families, mothers and children.

CONCLUSION

Thus, the results of calculations of regional Human Development Index can serve as a basis for identifying the key issues and priorities of each region.

The results of our grouping in both tabular and cartographic versions allows us to develop of a number of measures to respond to the status quo. The regions with consistently high rates of Human Development Index have to share their positive experiences in other regional areas of Ukraine. Some regions need a certain correction in their socio-economic development, as they occasionally fall out of the group of leaders. These fluctuations indicate that they have a significant potential that needs to be planed and used efficiently, providing improvements in these areas. A significant number of the areas with average Human Development Index confirm the generally known trend that these areas don't have the systematic policies for the improvement and optimum utilization of all components that have the ability to affect the standard of living. The list of the bottom regions consists of regions that generally differ with a powerful economic development but it is not shown on the general welfare of the population in these areas.

Quantitative importance of the index components also reflects, to some extent, the effectiveness of the public authorities involving human development of the region. Especially during Ukraine's transition to a parliamentary-presidential model of government, administrative and territorial reforms and the related growth of the role of local state executive bodies and local authorities are needed.

References

- Bagrov, N. (2005) *Geography in the information world*. Kyiv: Lybid.
- Bagrov M., Rudenko L., Chervaniov I. (2012). The "new" geography in the Ukrainian reality: mission and development trends. *Ukrainian Journal of Geography*, 39 (3), 11-18.
- Regional Human Development. Statistical Bulletin* (2011). Kyiv: State Statistics Service of Ukraine.
- Regional Human Development. Statistical Bulletin* (2012). Kyiv: State Statistics Service of Ukraine.
- Regional Human Development. Statistical Bulletin* (2013). Kyiv: State Statistics Service of Ukraine.
- Topchiev, O. (2005) *Socio-geographic research: methodology, methods and techniques: Tutorial*. Odessa: Astroprint.
- Shabliy, O. (2001) *Human Geography: theory, history, Ukrainian Studies*. Lviv: Ivan Franko National University of Lviv.
- Shabliy, O. (2012) *Fundamentals of Human Geography*. Lviv: Ivan Franko National University of Lviv.

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