STUDY OF DISPROPORTIONS OF TERRITORIAL COMMUNITIES DEVELOPMENT ON THE BASIS OF GEOINFORMATION MONITORING OF THE POPULATION'S QUALITY OF LIFE

Associate Professor, Ph. D. Olga V. Mashkova

Senior Lecturer, Ph. D. Roman S. Molikevych

Assistant Lecturer Natalia V. Omelchenko`

Postgraduate Student Hanna J. Napadovska

Department of Social and Economic Geography, Kherson State University, Kherson, **Ukraine**

ABSTRACT

The article deals with a number of fundamental questions concerning the study of the disproportions in the development of territorial communities on the basis of geoinformation analysis of the qualitative situation of population's life activity. Population's quality of life is the most important factor in the implementation of the balanced development policy, as it reflects not only the social and economic well-being of the population, but it also serves as a tool for monitoring of the state of population's life activity. Spatial analysis of the population's quality of life allows to determine the specifics of region's development as well as gives an opportunity to evaluate the most optimal limits of territorial associations and strategies for their further development. The geoinformation systems are the indispensable tool for this type of analysis. The article presents a methodology for conducting an analysis of the population's quality of life for the region (on the example of Kherson region, Ukraine) on the basis of an integrated approach, using both statistical assessments and data from a sociological survey of the population. There is established the mathematical and statistical dependence between the criteria of quality of life and its formation factors in the conditions of the chosen object of research. The standardizing of territorial units is carried out on the basis of parameters of people's quality of life. There is performed the analysis of spatial imbalances in the population's quality of life using applied geoinformation programmes. There are emphasized the aspect of formation of united territorial communities and the specifics of their spatial allocation on the basis of geoinformation analysis.

Key words: geoinformation systems, population's quality of life, territorial communities, balanced development.

INTRODUCTION

The profound and massive changes that have taken place in Ukraine in recent years and cover all aspects of public life, highlight the issue of raising the level of population's quality of life (LQ) and human development in general. The regularities of the spatial organization of life activity of independent territorial communities are also recognized as one of the priority areas of socio-geographical research.

Quality of life is a unique combination of characteristics of the standard of living (in its broad sense), with a unique way of life of the territorial community of people, natural and socio-economic conditions, geographical peculiarities of development and, of course, socio-demographic characteristics of the population itself. In fact, the population's quality of life is a certain degree of homogeneity of the signs of living environment and characteristics of the regional society, allowing it to play a role in the socio-economic development of the country. Socio-geographical study of quality of life is a significant aspect in the formation of a new network of administrative structures (united territorial communities) and the development of appropriate strategies for the development of these territories [8].

Taking into account the above-mentioned topicality and timeliness of studies on the population's quality of life, in order to find imbalances in the development of territories, the methods and techniques of GIS-analysis are considered on the example of the Kherson region – the southern region of Ukraine, which borders directly with the Peninsula of Crimea and is an agrarian region in terms of its economic development.

METHODOLOGY

The identification of patterns and dependencies of the formation of a living environment within the region was based on the systematic study and analysis of all resource-ecological and socio-geographical factors that determine the territorial differentiation of the main components of the quality of life, as well as the use of methods of mathematical statistics (correlation and regression analysis, factor analysis, cluster analysis). The basic method is to map the indicators of the population's quality of life and living conditions in the GIS environment.

Almost the most important aspect of modern approaches to the study of population's quality of life is the use of "objective" (statistical) and "subjective" (questioning) indicators. In the perspective of the most optimal representation of these indicators, mapping with using of GIS technologies are the most presentable. If we talk about methods for assessing the population's quality of life on the whole, we should highlight the methodology of the OECD Better Life Index (for international comparisons) and the methodology of Professor Irina Gukalova (for regional comparisons). The GIS analysis of the components of the quality of life in this article is made according to the method of Professor Gukalova. In detail the methodology is described in the work "Quality of life of the population in Ukraine: socio-geographical conceptualization" [1].

RESULTS AND DISCUSSION

The study of the quality of life in geographic sciences is excellent due to the fact that this category is characterized by complexity and integrity. Geography examines certain processes in a particular territory, and therefore LQ in it is considered as socio-

geographical process, formed under the action of certain conditions and factors. The study of quality of life in geographic sciences uses a system of components, such as: the level of health, education, material well-being, socio-economic, natural and ecological, cultural and other conditions of human life, as well as the subjective attitude of the individual to different spheres of his life. Also the distinguishing feature of geographical approach is the factor of territoriality (geospatiality), which reveals regional differences of quality of life at different levels (from micro to macro-level) and determine their causation. In the modern socio-geographical interpretation, the population's quality of life is a category that characterizes the conditions of life and the state of the population in a particular environment in terms of its ability to provide the restoration and balanced development of society [6].

The main assessment unit of the quality of life is precisely the block of socio-economic indicators and the priority attention is given to it. Component and integral analysis and presentation of indicators are carried out in the GIS environment. Fig. 1 shows a mapping of the results of the analysis of the most significant indicators of socio-economic development of the districts of the Kherson region (Ukraine) [5].
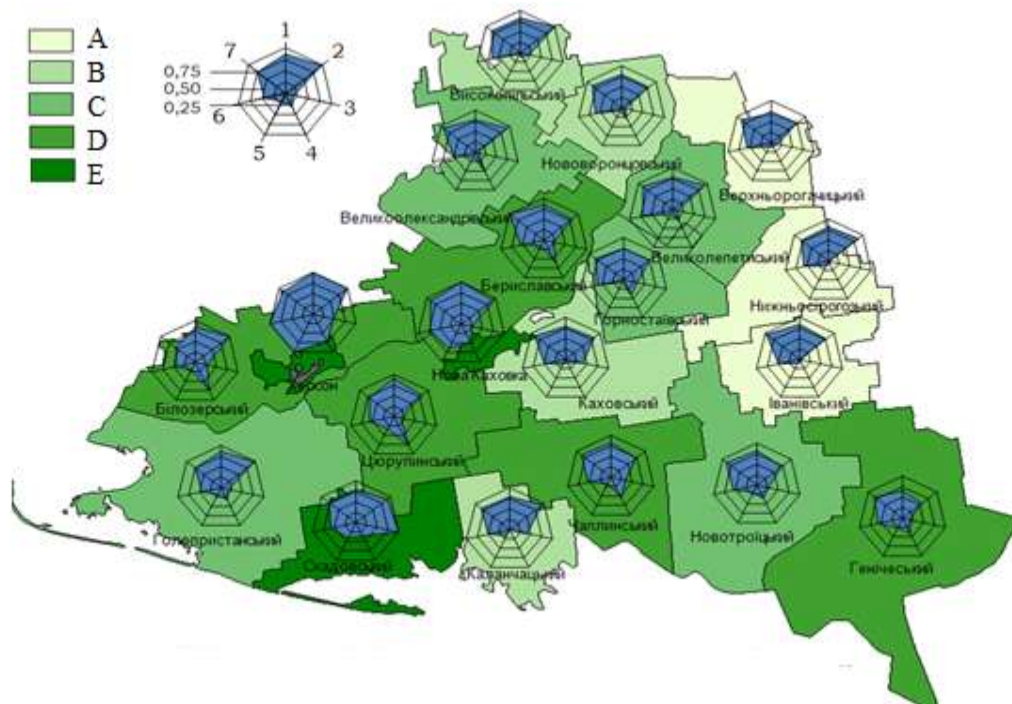

Fig. 1: Integral index of social and economic development of administrative districts of Kherson region, 2016 p. (A – low level (0,47 – 0,5); B – below average (0,51 – 0,54); C – average level (0,55 – 0,57); D – above average (0,58 – 0,68); E – high level (0,69 – 0,87). Component part: 1 – index of average monthly wage; 2 – index of providing the people by housing; 3 – index of capital investment; 4 – corrected index of unemployment; 5 – retail trade turnover; 6 – index of doctors' employment; 7 – index of nursing staff employment)

With the schematic map we can make the following conclusions regarding the territorial differences in the level of socio-economic development of the districts of the Kherson region:

- the index of the level of social and economic development in the Kherson region is naturally decreasing in the direction from the center to the periphery, the northeastern regions are the least developed;

- the indicators of socio-economic development are highly correlated with the level of urbanization (correlation coefficient r = 0.74) and population density (r = 0.83), which is explained better by socio-economic conditions in cities, availability of jobs, higher income of households, greater purchasing ability, higher level of social infrastructure development, etc.

According to this, it is understandable that today people are becoming more mobile and increasingly choosing their place of residence (temporary or permanent) from the point of view of maximizing conveniences for life by a number of criteria. They should include: living conditions, the ability to find a job (open one's own business, invest money), use quality services, have a good rest, and in general – diversify their lives, get options, etc. In Ukraine, all these criteria remain as the signs of the quality of the urban environment (as opposed to traditional rural) [3].

Urbanization fundamentally changes the life activity of the population not only directly from the cities but also from entire regions. It means modernization, social benefits, greater comfort of the home, availability of services, but it also means environmental disruptions, psychological overload, "city" diseases and other problems. Consequently, the development of cities transforms the way and people's living conditions affect the state of the population and its qualitative characteristics, and the intensity of these transformations is associated with the socio-geographical peculiarities of the development of a particular region. A high level of urbanization does not mean automatic high quality of population's life and vice versa; this is due to the ambiguity of the interaction of various components in the urbanized environment [4].

On the one hand, urbanization is a major factor in changing of the population's quality of life, on the other – it should itself be evaluated from the positions of this category: how urban are the living conditions of the population, whether the declared proportion of urban population in one or another area is proportional to urban employment, urban level of accomplishment of the territory and housing (in particular, the equipment with centralized sewage, water supply and hot water supply, etc.), the level of transportation, finally – whether it meets the level of awareness by population of the lifestyle, urban or rural ways of life? [7]

We have investigated the territorial differentiation of some "markers" of urbanization at the regional level in order to identify certain disparities in the quality of life of the population of the Kherson region.

For the integrated assessment of the level of "domestic" urbanization or the level of improvement of urban housing stock, an integrated average-weighted indicator was used, it characterizes the weighted average proportion of the urban population living on the residential area, equipped with a set of household utilities, which is the geometrical mean of five "particles": particles of the urban population living in the urban accommodation equipped by water supply, sewage, hot water supply, heating and gas (Fig. 2) [2].
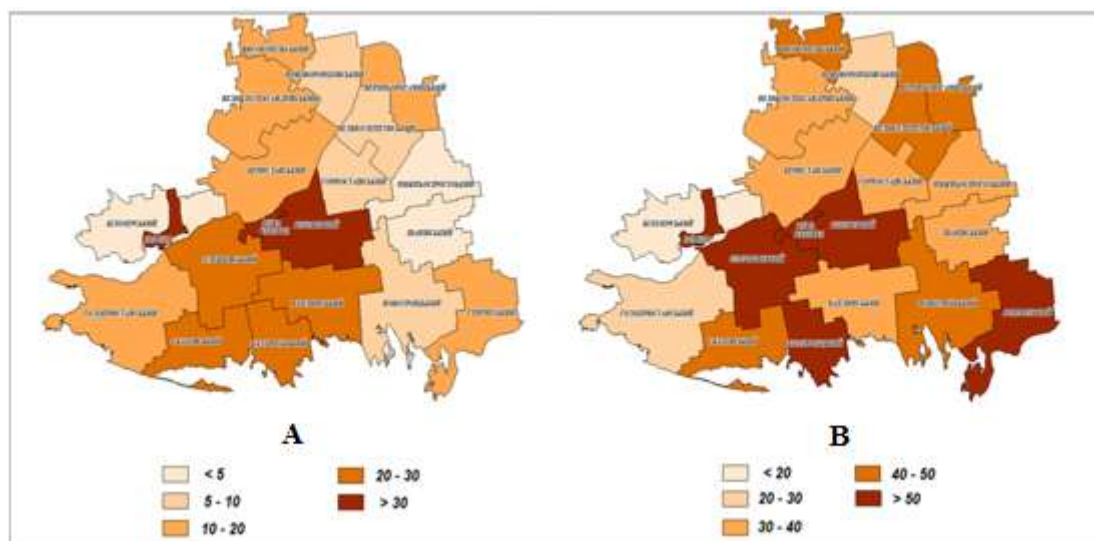
Fig. 2. Level of «domestic» urbanization and official level of administrative structures in the Kherson region, 2015 p. (A – weighted average part of urban population living in accommodation equipped by household amenities (%); B – particle of urban population (%))

Fig.3. Types of the districts of Kherson region by the level and peculiarities of urbanization of population's life (Types of the districts by the level of urbanization: 1-high level of urbanization; 2.1, 2.2 – with average level of urbanization; 3.1, 3.2, 3.3 – with law level of urbanization, 4 – with the lowest level of urbanization. Component indexes: 1-particle of urban population;2-changing of urban popiulation for the period 1989 -2015; 3-changing in density of urban population for 1989 -2015; 4-particle of urban housing stock; 5-part of urban population living in the equipped living space; 6-assessment of the urbanization level by the respondents)

As can be noted on the schematic map, the so-called "domestic" urbanization and the parameters of the official level of urbanization of administrative entities of the Kherson region are quite substantial in the direction of a substantial decrease.

The results of typification of administrative units of the region by the level and the peculiarities of urbanization of population living place have shown that, firstly, it is

advisable to take into account not one or two, but more indicators ("markers") of urbanization for the identification and comparison of various aspects of the multifaceted process of penetration of urban conditions and comfort in people's quality of life. Secondly, they are indicative of the existence of two urbanized nuclei – Kherson and Nova Kakhovka, which actually correspond to the average declared (official) level of urbanization in the region. All other territories are far behind in their assessment of urbanization (Fig. 2).

Improvement of the situation in different types of districts should be fundamentally different in nature with the awareness of a single priority – a worthy quality of life for the population. The characteristic of the urbanized environment in the Kherson region is the imbalance in the development of separate components.

In Fig. 4 there is illustrated group of administrative districts by the living quality assessments of respondents and the main factors of influence on this quality.
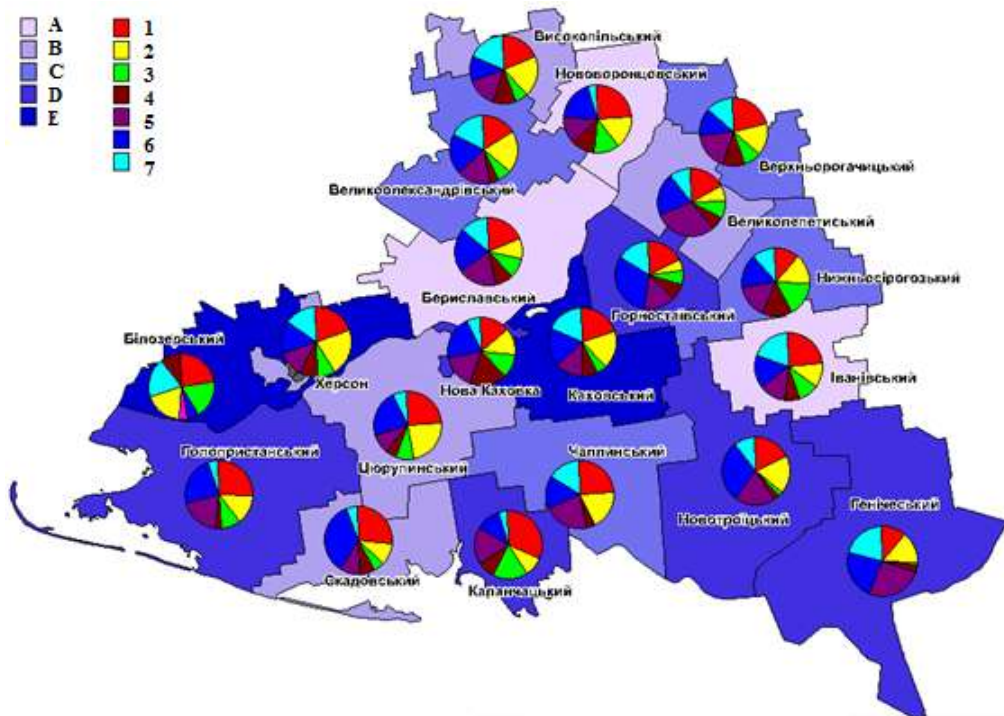

Fig. 4 Subjective assessments of population's quality of life in Kherson region (Ukraine) (Subjective assessments of life quality: A – low; B – below average; C – average; D – above average; E – high. The most important factors influencing the quality of life of the population (subjective): 1-low income; 2-ecological state; 3-living and housing conditions; 4- malnutrition; 5-low quality of medical service; 6-climate and weather; 7-quality of drinking water)

The priority factor of influence on the deterioration of the quality of life is determined by the factor of low incomes (and therefore the inability of full-fledged food, clothes, medicines, personal hygiene, etc.). Practically in each district this factor is rated as the most important one, but in some areas it is graded by the negative influence of poor quality of drinking water and medical services. As we see, the results of the survey do not correspond to the assessment of the socio-economic development of districts, which we carried out earlier on the basis of statistical indicators, but it is evidence of the

presence of spatial specifics in people's judgments about the standard of living in those or other areas. The districts, that are underdeveloped in the socio-economic plan, are among the leaders with the highest estimates by the level of satisfaction with the living standards and at the same time – among outsiders. Such results demonstrate at least the premature of conclusions about the population's standard of living only on the basis of official statistics.

CONCLUSION

In general, according to the results of the study, it was found that there is a significant differentiation of indicators of population's quality of life in the districts of the Kherson region. Most of the trends identified are explained quite well by the socio-geographical features of the development and urbanization processes of certain districts of the region. At the same time, it becomes clearer that official statistics do not provide a complete and unambiguous picture of the quality of life and the availability of these or other dependencies. Therefore, for an integral assessment of the population's quality of life, an integrated approach based on a combination of sociological and official statistics is appropriate. According to the results of geoinformation analysis, there are revealed the best indicators of the population's quality of life, typical for suburban central areas, where there is a rather high availability to consumer goods and various services. Accordingly, in these territories the formation of united territorial communities takes place more actively, in contrast to peripheral areas with a low level of socio-economic development and quality of life.

REFERENCES

[1] Gukalova, I. Quality of life in Ukraine: social and geographical conceptualization: Monograph / Institute of Geography. National academy of sciences of Ukraine, Kyiv, 2009, P.346.

[2] Gukalova, I., Omelchenko, N. Measuring the urbanization in Ukrainian regions: current approaches, Human geography journal, Ukraine, Vol. 20 No.1 pp. 22-28. 2016

[3] Mashkova, O. Conformities to the law of spatial differentiation of rural vital environment of the Kherson region, Scientific notes of Vinnytsya State Pedagogical University named after Michailo Kotzubynsky. Series: Geography, Ukraine, Vol. 19 No.1 pp. 160-165. 2009

[4] Melnychuk, A.; Kokovskyy, L.; Maryniak, B. Ecological and Economic security of the housing stock in Ukraine, Economic Annals-XXI, pp. 64-67 (In Ukrainian).2014

[5] Molikevich, R. Place and role of health indicators in research of quality of life. The scientific issues of Ternopil Volodymyr Hnatiuk national pedagogical university. Series: geography, Ukraine, Vol. 38 No.1 pp. 203—213. 2015

[6] Napadovska, H., Pylypenko, I. Socio-geographical analysis of possibility of applying forming components of the population in research of regional systems of the «Core-Periphery», Scientific bulletin of Kherson State University. Series: Geographic Sciences, Ukraine, No.5 pp. 35-41. 2016

[7] Pacione, M. Quality-of-Life Research in Urban Geography, Urban Geography, Bellwether Publishing, Vol. 24. No. 4. pp. 314-339. 2003.

[8] Udovychenko, V., Melnychuk, A., Gnatiuk, O, Ostapenko, P. Decentralization reform in Ukraine: assessment of the chosen transformation model, European Spatial Research and Policy, Vol. 24 No. 1, pp. 23-40. 2017