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Abstract

The article is devoted to the problem of the social sphere functioning of the areas in the Carpathian-Podillia region, in particular the emphasis is placed on the differentiation of the levels of its individual components, the dynamics of their changes and the complex analysis of functionality. The state of this sphere directly influences the economy and culture of the country and the region, and therefore the sectors of education, health care, culture, housing and communal services, etc. play a significant role in the economic development of the territory. Territorial boundaries of the research are defined within Transcarpathian, Lviv, Ivano-Frankivsk, Chernivtsi, Vinnytsia, Khmelnytskyi and Ternopil regions, among which there are established economic, labor-resource and informationalcommunicative connections, which also should be considered as the strong side of such cooperation. Also there were applicators in each of the suggested groups, demonstrating the functionality of the corresponding component of the social sphere (in some cases, two of them, in others five). At the first stage, we evaluated and analysed each component of the social sphere separately, based on selected applicators, which are reflected in thematic cartographic models. According to the results of the research, within the areas of the Carpathian-Podillia region there is a balanced development of the social sphere and its constituent parts. Lviv region is clearly by a high level of organization of the educational sphere, culture, trade and mass catering, as well as communication. For most areas of the region (Vinnytsia, Transcarpathian, Ivano-Frankivsk, Ternopil, Khmelnytskyi) there is a very narrow amplitude of summary indicators, which can confirm that in the consolidated form, the level of functioning of the social sphere does not have a significant difference in these regions. Hypertrophic development of one or two indicators is detected in each of the evaluated areas, while the majority of them are at a low level. The indicators of low level of social sphere formation in Chernivtsi region are justified. A summary table is prepared on the level of functionality of the social sphere according to the selected criteria within the specified regions. The conducted study allows determining the strategic directions of the social sphere development in the Carpathian-Podillia region in general as well as its individual areas. In addition, a comparative analysis of the social sphere development level to the indicators of the Western Ukrainian region and Ukrainian based on the statistics from the State Statistics Service of Ukraine is provided.

Key words

Carpathian-Podillia region, geospatial organization, social sphere, components of the social sphere, matrix of functioning level.

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INTRODUCTION

The modern stage of Ukrainian society development is oriented on social values that in the current environment reflects growing social weight of the creation of socially necessary product. The state of this sphere directly affects the economy and culture of the country; on this basis, one could claim that people engaged in education, health care, culture, housing and communal services etc. play a significant role in the economy. The example of the leading countries of the world shows that in addition to much attention to material production, a lot of effort are applied to priority social development, the prerequisites for social orientation of the economy are formed, to carry out state policy in the name of human as the main generator of civilization progress.

ANALYSIS OF THE RESEARCH

The problem of the development and functioning of the constituent elements of the social sphere is the research area of a large number of national and foreign scientists. V.I. Kutsenko and Y.V. Ostafiichuk consider the social sphere as a sphere of human activity, the result of which are services that meet the needs of society as well as individual members and are associated with the creation of added value (Kutsenko, Ostafiichuk 2005, Kutsenko 2008). N.G. Pigul points out that the organizational mechanism for building a social sphere should be based on clearly defined functions, principles and tasks that will allow more effective implementation of the state social policy in order to improve the quality of life of the population (Pigul, 2013). Y. Oliinyk and A. Stepanenko consider the study of the social space of territorial communities and their social locality as an important direction in the study of social geography (Oliinyk, Stepanenko, 2012). L.M. Niemec considers the social sphere from the point of view of the spatial-temporal organization of society in terms of globalization influences; innovation-investment image of territories, model development and social-geographic zoning for optimization of the society territorial organization and ensuring optimal living conditions of the population, participation in the regions development of strategies (Niemec, 2003). We have also considered this problem partialy while assessing the employment of population in the social sphere of the Carpathian-Podillia (Kuzyshyn 2015, 2017, 2018, Nemets 2003, Topchiev, Malchikova, Yavorskaya 2015).

The assessment of territorial development in connection with elements of the social sphere is the objective of modern studies of human geography. As a result of the analysis, there was emphasized the need for a dynamic comparison of the research results of the regional development factors (Pachura, Nitkiewicz, Matlovicova, Matlovic 2018). If in the late 90's of the XX century – beginning of XXI century the main attention was given to the study of the microscale phenomena of social orientation (Bontis, 2004), then at the beginning of the XXI century begins the



period of expanding the study space to the regions and states (Stahle 2008; Cooke, Clifton, Oleaga 2005). Most frequently this area of scientific interest involves the use of regional endogenous potential and the assessment of competitive advantages (Shiuma, 2008; Malhotra, 2008).

With the increasing significance of the social sphere functioning, there is a need for a detailed analysis of the level of its components formation and the achievement of the complexity in providing the relevant services. The relevant issues seem to have the need to determine the current state of formation and demand of individual elements of the social sphere, as well as the level of their provision in a specific region, which allows determining its rating position in the region. To do this, we need to analyse a system of indicators that will allow us to form a comprehensive view of the social sphere of the Carpathian-Podillia region.

PURPOSE, TASK AND METHODS OF RESEARCH

The aim of the article is to assess the development of selected dimensions of the social sphere in the Carpathian-Podillia region, as well as to show their spatial diversity. For this purpose, statistical information was used over the period from the 90's of the twentieth century to 2016. This allowed to determine the dynamic trends of the functioning of the social sphere and its components.

To conduct research, we have selected a system of indicators, which served the criteria for evaluating certain elements of the social sphere. It should be emphasized that they evaluated the functionality of certain elements regarding not quantity, but quality – provision, availability, demand of a certain social sphere element, which in our opinion reflects the real state of formation of social sphere and allows differentiating its components in terms of the functionality formation.

On the basis of the conducted component analysis, it is planned to rank the regions of the Carpathian-Podillia region in terms of the functioning of the elements of the social sphere. The method of matrix analysis was used to conduct the research, which allowed to analyse the state of functioning and differentiation of the level of social sphere elements in the context of the mentioned administrative units.

For the characteristics of each social sphere element of the region there is a corresponding rank (from 1 to 7), according to the indicator occupied by the region (the rank is higher, provided that it has the higher corresponding absolute index). Fewer points provide a better ranking.

Several blocks of criteria were used during the formation of matrix. They were grouped into: *educational sphere*: 1 – the coverage of children by preschool institutions; 2 – number of students of comprehensive educational institutions per 10 thousand people; 3 – the number of students of vocational schools per 10 thousand people; 4 – the number of students of higher educational institutions



with I-IV levels of accreditation per 10 thousand people; *cultural sphere*: 5 – availability of library funds per 100 people; 6 – availability of club membership per 100 people; 7 – attendance of museum institutions per 100 people; 8 – attendance of theatres per 100 people; 9 – attendance of concert events per 100 people; *sphere of health care*: 10 – availability of doctors per 10 thousand people; 11 – availability of average medical personnel per 10 thousand people; 12 – availability of hospital beds per 10 thousand people; 13 – planned capacity of outpatient clinics per 10 thousand people; *housing and communal services*: 14 – availability of housing space; 15 – an indicator of the level of private houses; *trade and mass catering*: 16 – availability of trade areas, 17 – retail turnover of enterprises per person (thousand UAH); 18 – retail of alcoholic beverages per person (l); *connection*: 19 – number of subscribers of mobile communication; 20 – number of cable connection subscribers; 21 – the share of households having access to the Internet.

The processing of such data served as the basis for the formation of cartographic models that form a spatial representation of individual components of the social sphere and form an integrated mapping of the territorial balance of the social sphere of the regions in the Carpathian-Podillia region of Ukraine.

In the process of research, methods of analysis and synthesis, dialectic and scientific abstraction, statistical method and method of matrix analysis were used.

RESULTS AND DISCUSSION

Territorial boundaries of the research are defined within Transcarpathian, Lviv, Ivano-Frankivsk, Chernivtsi, Vinnytsia, Khmelnytskyi and Ternopil regions (the area covers 19.1% of the territory of Ukraine and is home to 23.5% of the country's population). These areas have a compact location, which positively affects their cooperation and high interdependence.

Sufficiently well-established business, labour, information and communication should also be considered as the strong side of such cooperation. During the XX century in the areas of this region, employment in industrial sphere, agriculture and forestry dominated. However, at the same time, there were traditions of high interest in education, culture and tourism (many families in Western Ukraine have a tendency of joint rest on weekends, regular visits to cultural, festival and other mass events, as well as a peculiar commitment to supply the junior ones with proper education). In the late 90's of the XX century these areas of the economy have intensified their development in the region, but only tourism can be associated with the income industry. The proximity to the border with the European states and the facilitated communication with the Eurospace also had its positive effects (the features of globalization and Europeanisation in the areas of the region under study have increased due to personal visits to the countries of the European Union).



However, historically, these territories were formed not as one, because in different historical periods they were part of various state institutions. Only during the XIX and XX centuries these area remained parts of the Republic of Poland, Romania, the Czech Republic, the Russian Empire, and the Soviet Union, and each of the states had personal views on the formation of this territory, including the positions of the social space. Western states promoted the upmarket character of this direction, the Russian Empire did not consider it necessary to develop the social sphere in the colonized territories.

To a certain extent, such territorial attachment also affected the ethnic composition of the population in the mentioned areas, which can be defined as diverse. Within the limits of not only the investigated region, but also Ukraine in general, the most poliethnic regions include Transcarpathian and Chernivtsi (the share of ethnic Ukrainians reaches 60-75%). Monoethnic areas with the domination of ethnic Ukrainians include Ternopil, Ivano-Frankivsk regions (the share of ethnic Ukrainians is over 95%). Indirectly, these features also affect the functioning of the social sphere.

Consideration of social sphere elements should be carried out in the sectorial version of the assessment, but taking into consideration a certain territorial level.

The level of social sphere development is determined by the demand for services, and those, in their turn, vary according to the real possibilities of society at one or another stage of development. In today's conditions of an unstable economic situation in the country, the demand for many types of services has decreased due to low profits of the population, although there is an increase in interest in certain types of services (information, advertising, recreation, including tourism, health care, etc.).

The social sphere has certain territorial differences in the level of development and structure. Significantly higher level of its development and a wider sectorial structure is in cities compared to rural areas, in more economically developed industrial regions than in less developed agricultural areas.

The educational sphere is an important element in the formation of the social environment, the formation of an enlightened society and is a prerequisite for the preservation of intellectual society. Key indicators that characterize this area of the social sphere are qualitative characteristics of the educational space of the study area, for example, the coverage of children by preschool institutions, the number of students in general education institutions per 10 thousand people, the number of students of vocational schools , the number of higher education institutions students of I-IV accreditation levels per 10 thousand people. Such indicators allow us to assess the state of the educational environment in a certain area. During 1995-2016, in the areas of the Carpathian-Podillia region, the rate of coverage of children in pre-school institutions increased (from 31 preschoolers /

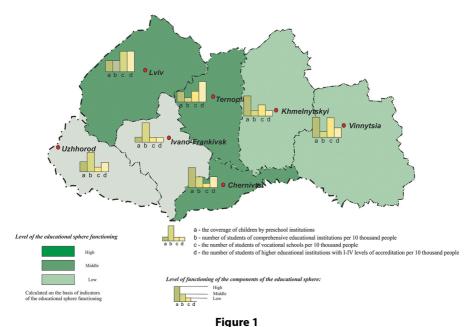


100 children of the corresponding age in 1995 to 62 preschoolers / 100 children of the corresponding age in 2016), which even exceeded the average Ukrainian index starting from 2010 (Statistical Collection 'Regions of Ukraine', 2017. Part 1). Higher level of security is characteristic of the Podilsk regions. From 1995/1996 academic year up to 2013/2014 the number of students of comprehensive educational institutions in the amount of 10 thousand people decreased (from 1464 to 1039 students per 10 thousand population) and only during 2016/2017 academic year there was a tendency for an increase in the number of students in accordance to the number of residents (1067 students per 10 thousand population). It should be noted that this indicator has more positive numbers than the average in Ukraine. Over the period of 2000-2016 there was a decrease in the number of students of vocational education institutions per 10 thousand people from 104 to 81 students (but it is worth mentioning that these indicators are more positive than in Ukraine in general). The highest indicator is characteristic of the Lviv region (in 2016 - 107 students of vocational schools per 10 thousand people). As to the indicator of the number of higher educational institutions students in the Carpathian-Podillia region there was an increase in the number of students per 10 thousand people from 2000/2001 academic year to 2005/2006 academic year, but in subsequent academic years their number decreased faster than in Ukraine in general (Statistical Collection 'Regions of Ukraine', 2017. Part 1).

However, if we evaluate the educational sphere in a comprehensive way according to the criteria we have selected for our ranking, the matrix table confirms that the most prevailing this sphere is in Lviv region, and indicators of Vinnytsia, Ternopil and Chernivtsi regions are also high, while in other areas of the region there are problems with certain assessment components of the educational environment development, or generally low efficiency of their functioning (Table 1). In comparison with the average indicators of Ukraine and indicators characteristic of all areas of the Western Ukrainian region, this area always presented higher indicators of coverage of children by preschool institutions, the highest number of students and learners in general and vocational schools. Only a decrease in the number of students in higher education institutions in this region is higher than in Ukraine in general (this can be justified by the outflow of students to European, first of all, Polish educational institutions).

Culture covers institutions and establishments that produce cultural goods, offer spiritual values to the population etc. (libraries, theatres, clubs, museums, film studios, television, radio, newspaper and magazine publishing houses). Their placement is also associated with the peculiarities of people's resettlement: there is the higher concentration of cultural objects in large populations settlements. In the areas of the Carpathian-Podillia region there are over 5,7 thousand libraries, 6,4 thousand club facilities and cultural buildings (Statistical Collection 'Regions of





The indicators of the educational sphere functioning in the Carpathian-Podillia region

Source: Statistical Yearbook 'Regions of Ukraine', 2017. Part 1

Ukraine, 2017. Part 1). They are placed according to the administrative division (in settlements – centres of administrative-territorial units, in urban microdistricts) and on a production principle – on the basis of enterprises, educational institutions, etc. For our analysis, we selected two areas – the availability of these institutions, which were evaluated through the index of availability of certain institutions for population and the population attendance of cultural and art establishments.

The indicator of the availability of cultural institutions, in particular library funds and club facilities in the Carpathian-Podillia region, is higher than the average in Ukraine and in the Western Ukrainian region in general. Although since 2000 these figures are deteriorating in Ukraine, the decline rate in the region under study is not so significant. Thus, the average indicator of the availability of library funds in the region comprises 688 copies per 100 people, and in most regions (Vinnytsia, Lviv, Ternopil, Khmelnytskyi) it exceeds 700. During the estimated period (2000-2016), the deterioration of the availability of library literature was most noticeable for Vinnytsia, Transcarpathian and Khmelnytskyi regions (reducing the number of copies per number of inhabitants to 25%). At the same time, attention was paid to this issue in Lviv region and the amount of literature in libraries even increased (by almost 25% in the number of book copies per number of inhabitants; probably this could be connected with the increase in the number of students in higher educational establishments of Lviv, which had been the main users of libraries).



If on average in Ukraine the provision of places in clubs is 10 places per 100 people, in this region it exceeds 15 (in Ternopil regions – 18 and Khmelnytskyi regions – 24). Another positive thing is that during 2000-2016 the availability of club facilities in almost all regions remained at the same level as in 2000 (except for the Transcarpathian region only, where this indicator decreased to 10 places per 100 local inhabitants). Of course, a more qualitative picture of the assessment of this indicator would be if the employment rate of places and the use of club facilities in terms of regional areas were evaluated, and at present, such statistics are not available.

Among the museum establishments of the Carpathian-Podillia region (161 establishments, almost 28 % of the total Ukrainian indicator) dominate regional history, historical, memorial museums. Most of them are situated in regional centres (the leader is Lviv), and among the regions as a whole the leader is Ternopil region – 30. The rate of attendance of museums in the regions of the area is higher (in 2016 – 46 visits per 100 people) than in Ukraine in general (37 visits per 100 people) and continues to grow. Higher indicators from the average regional rate were recorded in Transcarpathian and Lviv regions (48 and 75 visits per 100 inhabitants), the lowest – in Chernivtsi (31 visits per 100 inhabitants) (Statistical Yearbook of Ukraine for 2016, 2017. Kyiv, 2017). The reason for such a significant amplitude can be both quantitative indicators of museums as well as the practical interest of tourists and recreationists to this form of rest. If we evaluate the trend of museums attendance in 2000-2016, it should be noted that in all areas without exception there was an increase in interest to these attraction objects (particularly, in the Transcarpathian region this indicator has more than tripled, in Lviv and Khmelnytskyi has grown by 2.5 times).

The largest number of professional theatres functions in the Lviv region (9 out of 112, which operate in Ukraine). There are 27 professional theatres in the region in general. Regarding attendance, despite the established stereotype that the population of western Ukraine are theatre fans, the indicators are lower than in Ukraine – 11 visits per 100 inhabitants (with the exception of the Lviv region – 18 visits per 100 inhabitants) (*Statistical Yearbook of Ukraine for 2016, 2017. Kyiv, 2017*). It should be noted that this indicator includes a significant tourist component, because many Ukrainian and foreign tourists consider it mandatory to visit theatres during their travel programs. In terms of the dynamics of the Melpomene centers attendance, Khmelnytskyi region demonstrated the most positive dynamics during 2000-2016 (attendance has increased almost twice), and in the Transcarpathian region the same indicator has deteriorated almost twice.

Concert and festival activities today are an integral part of the cultural leisure of the population. However, within the region there are quite significant fluctuations of indicators characterizing the interest of the population to this element of organized cultural leisure. In general, there is a tendency in the region to increase



interest in concert events among the population – if in 2000 such events were visited by 5 people per 100 local residents, in 2016 this figure increased to 7. But depending on the region there are different fluctuations. While in Lviv region, during this period, there is actually an increase in attendance at concert events (from 5 to 11 visits per 100 local inhabitants), these indicators remain stable in Ivano-Frankivsk region (1-3 visits per 100 local inhabitants). In other areas, attendance rates are within the range of 6-8 visits per 100 local residents, which is higher than in Ukraine generally.

Assessing the level of functioning of the cultural sphere components, it should be noted that their highest level is characteristic of the Lviv and Khmelnytskyi regions, high and relatively balanced - in Vinnytsia and Ternopil regions. If we analyse the dynamics of individual indicators, then from 2000 to 2016 in the areas of the Carpathian-Podillia region there is a deterioration and lagging behind the average Ukrainian indicator and indicator of the Western Ukrainian region in general regarding the availability of library funds, but there is an increase in the availability of places in clubs, there is an interest in visiting museums and the attendance of theatrical at concert events decreases.

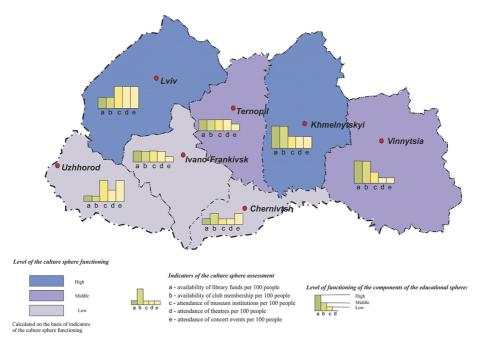


Figure 2

The indicators of the culture sphere functioning in the Carpathian-Podillia region Source: Statistical Yearbook of Ukraine for 2016, 2017



The health-improving complex includes a system of medical and recreational institutions that provide health care (disease prevention, treatment), health improvement and recreation. There are 50000 doctors of all specialties in the health-care institutions within the region (almost 27 % of the total Ukrainian indicator) and more than 100 thousand of medical staff (more than 27 % of the total Ukrainian indicator). The availability of doctors in the region under study is one of the highest in the country, but the percentage of sick people is constantly increasing due to unfavourable living conditions, inappropriate nutrition, and so on. Thus, from 2000 to 2016, the availability of doctors per 10 people in the Carpathian-Podillia region increased from 45 to 50 specialists (in Ukraine this figure is significantly lower). The indicator of the availability of average medical personnel is also at the high level (more than 100 per 10 thousand population) as well as the amount of hospital beds (more than 77 per 10 thousand population). The highest rates are characteristic for Ivano-Frankivsk, Lviv and Ternopil regions.

The situation with the planned capacity of outpatient clinics is quite tense (all medical institutions conducting an outpatient appointment – out-patient clinics, out-patient departments, clinics, out-patient departments of hospitals, medical health centres, etc.). The situation improves since 2010, but lags behind the all-Ukrainian indicators. Only in two regions of the area (Vinnytsia and Transcarpathian) the planned capacity of outpatient clinics is higher than the average in Ukraine.

The medical field, according to selected criteria, has the highest index of functionality in the Ivano-Frankivsk, Lviv and Ternopil regions. Quite qualitative medicine can function in the Khmelnytskyi region. In other regions, the rating positions of the medical sector are rather low and, accordingly, indicate the problem of its development.

Housing and communal services satisfy the needs of people in housing, provide functioning of dwelling houses, hotels, small enterprises and institutions. This direction of the social sphere provides maintenance and repair of the housing stock and communal infrastructure. The entire housing fund in the Carpathian-Podillia region comprises 256 million square meters, which is more than 26 % of the state's housing stock. The city housing stock has a higher level of gas, hot and cold water supply, and sewerage than in the rural areas. Within the studied region, the main residential areas are concentrated in rural areas (more than 55 % of the total regional index). Today, in order to improve the living conditions of the population, considerable attention is paid to the development of investment (at the expense of private costs of individuals and legal entities) and individual housing construction. The average availability of housing stock in the region is higher (25.8 m² / person) than in Ukraine in general (22.9 m² / person). Among the areas of the region, the highest level of housing availability is characteristic of Vinnytsia (almost 30 m² /



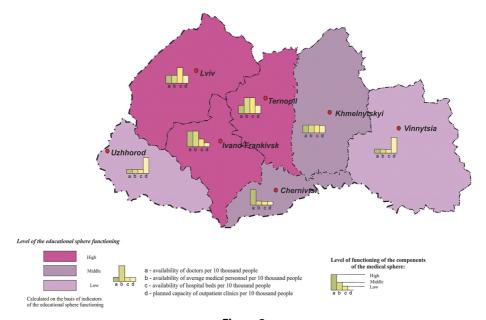


Figure 3
The indicators of the medical sphere functioning in the Carpathian-Podillia region
Source: Statistical Yearbook of Ukraine for 2016, 2017

person) and Khmelnytskyi region (27 m^2 / person), the lowest is in the Lviv region (23 m^2 / person).

Communal infrastructure is an integral part of residential and household needs of the population and enterprises. It covers electricity, heat supply, gas supply, water supply, sewage, improvement and sanitary cleaning of the territory. Among indicators that characterize the arrangement of apartments in the Carpathian-Podillia region, the indicators of natural gas supply, sewage and centralized water supply are the highest. According to the index of natural gas supply, the highest indicator is characteristic of Ternopil, Chernivtsi and Khmelnytskyi regions (in all, over 93 % of the total regional indicator). The best water supply is typical for Lviv and Ternopil regions, sewage services and hot water supply – for the same areas. Centralized heating is best arranged in Ternopil and Khmelnytskyi regions.

With a consolidated assessment of the indicators that ensure the quality of the housing and communal complex functioning of these territories, the ranking of the highest positions are typical for the Ternopil and Khmelnytskyi regions, while Lviv, Ivano-Frankivsk and Vinnytsia regions are close to the average.

The trade space has the highest level of availability per inhabitant in Lviv and Ivano-Frankivsk regions, high enough in Ternopil, Khmelnytskyi and Transcarpathian regions.



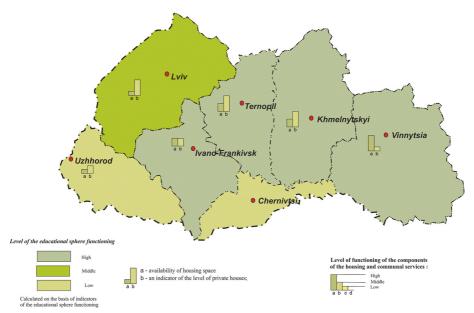


Figure 4
The indicators of the housing and communal services functioning in the Carpathian-Podillia region

Source: Statistical Yearbook of Ukraine for 2016, 2017

In the total volume of commodity circulation, groceries make up 65 %, non-food products – 35 %. The highest indicators of retail turnover per person is in Lviv region (13,5 thousand UAH / person, the indicator exceeds the average Ukrainian), and the lowest – in Ternopil region (7,6 thousand UAH / person). In addition to the traditional enterprises of the industry, a network of specialized stores, fast food catering establishments develope. The most dynamic retail turnover is developing within the Lviv region – over the research period, the indicator in this area has grown by more than 22 times (although there is a certain inflation component, but it is worth noting that this is also a sign of the welfare increase for the population of this territory). Also, a significant increase in retail turnover is characteristic of Ternopil, Khmelnytskyi and Chernivtsi regions.

An interesting indicator is the consumption of alcoholic beverages (in the calculation of pure alcohol I liter per person, which reflects the social consciousness and the popularity of a healthy lifestyle in the regions), according to which the minimum indices are characteristic for predominantly Podilsk regions (Vinnytsia and Ternopil – within 1.3 l / person), and the maximum – for the Lviv region – 2,7 l / person (however, a significant proportion of tourists that are visitors to the region and connoisseurs of gastronomic interests of the Carpathian region should be taken into account for this area).



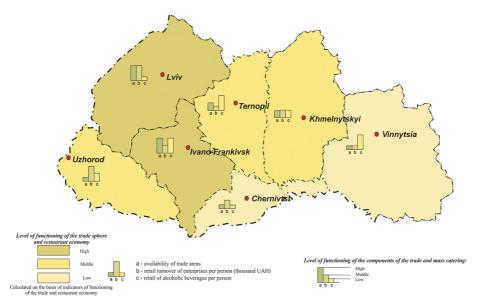


Figure 5
The indicators of the trade and mass catering functioning in the Carpathian-Podillia region

Source: Statistical Yearbook of Ukraine for 2016, 2017

According to the indicators characterizing the trade sector and mass catering, it can be noted that there is a very small amplitude between the regions, which allows us to assert the practically same level of functioning of the trading sphere. The highest level of formation is characteristic of the areas of the Carpathian region (Lviv, Ivano-Frankivsk and Transcarpathian regions), and the least intensively this sector is developing in Vinnytsia and Chernivtsi regions.

Communication as a branch of economy consists of enterprises, lines and nodes, which provide the process of transmitting information over a distance (ie, telecommunication). This includes communication departments, telephone and telegraph stations, post office, radio broadcasting, television, etc.

From the beginning of the XXI century along with the media (radio and television), an individual connection is developing extremely fast. At the same time, its traditional form – phone connection – is improving, interlacing with other types (satellite, radio). Another group of the latest telecommunication facilities widely uses video equipment and computers. This is telefax, e-mail, Skype, etc.

Due to accessibility to new forms and types of communication, there is a significant difference in the background of the regions. For example, Lviv region is the leader. Transcarpathian and Vinnytsia regions have rather high index characteristics as well. We have also monitored the dynamics of mobile communication users over the period of 2000-2016. Despite the intensity of this direction development,



it had a significant positive dynamics only within the Lviv region, while in other regions the indicator remained practically unchanged over the estimated period. The number of cable communication users in all areas of the region is decreasing, which can be connected to two indicators – switching to satellite TV or using more affordable and inexpensive technologies (frequency tuners, internet technologies, etc.). Actually, Internet access is the direction of communicative communication, which is actively progressing in all areas of the Carpathian-Podillia region without exception. Most actively it has developed in the Transcarpathian region – over 2000-2016 the number of users increased by almost seven times, in Ivano-Frankivsk – by 4.5 times, in other regions – by 2-3 times.

If one is to estimate the region's share of the indicator of the mobile subscribers number or the number of cable television subscribers, it is slightly more than 10 %, which corresponds to the correlation index of the population share in the Ukrainian index.

Relying on the indicator we have chosen for characterizing the sphere of communication, it should be noted that its most comprehensive development is observed in the Lviv region; rather high level of functioning is characteristic of the Transcarpathian and Vinnytsia regions. The least balanced sector of the social sphere is noted in the Khmelnytskyi region.

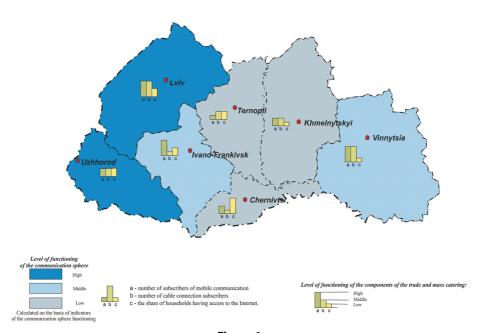


Figure 6

The indicators of the communication sphere functioning in the Carpathian-Podillia region Source: Statistical collection 'Regions of Ukraine', 2017. Part 2. Kyiv.



As a result of the analysis, the method of clustering was used through multivariate statistical analysis. On the basis of indicators generalization of blocks-criteria, an algorithm for assessing the functioning of the social sphere of the areas of the Carpathian-Podillia region was formed:

- the initial mass of information was analysed according to the indicators, which can be considered as two sub-masses - indicators-stimulators and indicators-destimulators;
- 2) for each of the six groups of indicators, the actual ranking is performed on the basis of absolute indicators, which are given in Statistical Collection 'Regions of Ukraine', 2017. Part 1; Statistical Collection 'Regions of Ukraine', 2017. Part 2; Statistical Yearbook of Ukraine for 2016, 2017;
- 3) for each region, a certain amount of rating indicators is determined, which gives its own semi-quantitative assessment of the social functionality in the regions according to the factors of stimulation;
- 4) in the format of a graph-tree, one can demonstrate the distribution of regional areas according to the level of social sphere formation and functionality;
- 5) the suggested meaning assessment of the final regions grouping according to the indicators of the functioning of the social sphere.

This methodological approach to qualitative rating indicators allows us to form a coherent picture of the problem and to evaluate the social sphere functioning of the areas of the region under study. It shows satisfactory results provided that there is a significant amount of evidence in the output masses of information and their statistical homogeneity and equilibrium.

On the basis of the analysis, one can see (Table 1) that the most balanced social sphere functions in Lviv region. This is due to the high level of organization of the educational sphere at the level of pre-school, general and higher education, the cultural sphere, which is monitored due to the demand of cultural institutions and their updating, the sphere of trade and mass catering that ensure the availability of food products and services for the local population and tourists, as well as communication (using of new and existing forms of communication by population) - these indicators provided the leading position of the region.

The general picture of the assessment shows that the majority of regions (Vinnytsia, Transcarpathian, Ivano-Frankivsk, Ternopil, Khmelnytskyi) have similar indicators of social development, but each of them often has its own advantages in the development of the social sphere elements. This does not allow to assert a balanced functioning level of the social sphere within these territories. Thus, for Vinnytsia region, the high development of the sphere of education, culture, housing and communal services and communications, but the low level of functioning of the medical staff sector and trade. Transcarpathian region is character-



Table 1 Ranking of parts of Carpathian-Podillia region according to the level of social sphere elements formation, indexes of 2016*

	CRITERIA FOR EVALUATION / RANK																						
Regions	Educa-tional sphere				Cultural sphere					Medical s phere				Housing and communal services		Trade and mass catering			Communi-cation			Combined ranking of the region	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	total	rank
Vinnytsia	1	7	2	4	1	2	3	6	5	6	6	6	2	1	5	7	6	1	2	1	6	80	4
Transcarpathian	4	1	6	7	7	6	2	4	2	7	7	7	1	6	4	5	2	3	3	3	1	88	6
Ivano-Frankivsk	6	2	5	5	5	4	5	4	7	1	1	4	6	3	3	2	5	2	2	6	4	82	5
Lviv	5	4	1	1	4	5	1	1	1	3	3	1	5	7	2	1	1	6	1	2	3	58	1
Ternopil	3	5	3	2	3	3	3	3	6	4	2	2	4	4	1	3	7	2	6	4	5	75	2
Khmelnytskyi	1	6	4	6	2	1	4	3	3	5	4	3	3	2	3	4	4	4	5	5	7	79	3
Chernivtsi	2	3	5	3	6	4	6	5	4	2	5	5	7	5	6	6	3	5	4	7	2	95	7

^{*} Calculated for Statistical Collection 'Regions of Ukraine', 2017. Part 1; Statistical Collection 'Regions of Ukraine', 2017. Part 2; Statistical Yearbook of Ukraine for 2016, 2017.

ized by a high development of the sphere of communication and trade, and other areas of social sphere are rather problematic. Ivano-Frankivsk region has a good level of functioning of medical services, housing and communal services and trade. Ternopil region shows good indicators for the functioning of the components of the educational sphere, culture, medicine, housing and communal services. Khmelnytskyi region is marked by good development of the sphere of culture, medicine, housing and communal services. As for the Chernivtsi region, in comparison with other regions of the Carpathian-Podillia region, this region has only high level in the sphere of education, while in the other groups of indicators there are unbalanced and low indicators. The suggested clustering of the regions of the research area (Table 1) shows their place according to the balance indicators of the social sphere functioning.

CONCLUSIONS

The social sphere of Ukraine in general and its major regions are experiencing the period of diversification of its components. The current assessment of the social sphere components is based on sectoral analysis. With significant potential, the regions of Ukraine do not always use their potential properly.



In the process of consideration of each social sphere component of the Carpathian-Podillia region, we analysed the main groups of criteria. This allowed determining the differentiation of levels of social sphere formation of the region in general. We have selected six main groups of indicators that allow us to consider the level of social sphere formation in the studied region – education, culture, medical sphere, housing and communal conditions, communication, trade and mass catering. In each of the suggested groups there were its own applicators, demonstrating the functionality of the corresponding component of the social sphere (in some cases, two of them, in others five). At the first stage, we have evaluated and analyzed each component of the social sphere separately, based on selected applicators, which are reflected in thematic cartographic models. At the next stage, we have carried out their generalization and have conducted the cluster analysis, which is reflected in the corresponding table.

On the background of the regional indicator of the social sphere functioning and formation Lviv region is marked by a high level of education (in particular, the number of pupils and students is high per 10 thousand local people), culture (increased interest of local people in visits to theatres, museums and concert events), trade and mass catering (indexes of shopping malls per number of inhabitants and expenses incurred by residents during the year in the trade network), as well as communications (number of users and availability of mobile and stationary communication) – these indicators provided the leading positions of the region. For most areas of the region (Vinnytsia, Transcarpathian, Ivano-Frankivsk, Ternopil, Khmelnytskyi) there is a very narrow amplitude of total indicators, which can be a confirmation that in the consolidated form the social sphere does not have a significant difference in these areas. Thus, Vinnytsia region is characterised by a high level of coverage of children by pre-school institutions and the number of students in the labor professions, the provision of population by library funds per 100 people as well as club facilities per 100 people, residential areas, and also has the highest number of cable television and mobile communication users in the region. The Transcarpathian region is a leader in terms of the number of students in general educational institutions, the attendance of the population of museum institutions, the planned capacity of outpatient clinics and the availability of the Internet for the population. The Ivano-Frankivsk region is characterized by high indicators of the number of students of general educational institutions, the coverage of population by doctors and average medical personnel, and the indicator of the number of mobile communication subscribers. Ternopil region is characterized by a high rate of number of students of higher educational institutions of I-IV levels of accreditation; high rates of population provision by middle medical personnel and hospital beds, as well as a high level of welfare in private dwellings. Khmelnytskyi region is a leader in coverage of children by pre-school institutions, availability of



library funds for the population and the number of places in club facilities, as well as availability of housing areas. The weakness of the social sphere of Chernivtsi region according to the criteria we have chosen is based on the low positions of the cultural sphere, housing and communal services as well as medical sphere.

The conducted study allows determining the strategic directions of the social sphere development in the Carpathian-Podillia region in general as well as in separate areas. On this basis, it is possible to create programs of regional development of the social sphere for the regional development needs.

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