

УДК 911.3

*Kostyantyn Mezentsev, Nataliia Mezentseva, Iryna Mostova***SPATIAL ASPECTS OF KIROVOGRAD REGIONAL LABOR MARKET FUNCTIONING**

*The essence and the basic concepts of the formation of regional labor market are considered. Polygonal and point elements of spatial structure of the regional labor market are defined. Cluster analysis of territorial units of Kirovograd region by complete linkage and Ward's methods is done; clusters of regions in terms of the socio-economic indicators manifestation at the labor market are identified. Typification of the local labor markets of Kirovograd region is carried out. Distinguishing of the sub-regional labor markets in the Kirovograd regional labor market is substantiated. The measures for optimization of the situation at the labor market of region are proposed.*

**Keywords:** spatial structure, regional labor market, sub-regional labor market, local labor market, typification.

**Костянтин Мезенцев, Наталія Мезенцева, Ірина Мостова. ПРОСТОРОВІ АСПЕКТИ ФУНКЦІОНУВАННЯ КІРОВОГРАДСЬКОГО РЕГІОНАЛЬНОГО РИНКУ ПРАЦІ.** Розглянуто сутність та основні концепції формування регіонального ринку праці. Визначено площинні та точкові елементи просторової структури регіонального ринку праці. Здійснено кластерний аналіз територіальних одиниць Кіровоградської області методами повного зв'язку і Варда та виділено кластери регіонів за проявом соціально-економічних індикаторів на ринку праці. Здійснено типізацію локальних ринків праці Кіровоградської області. Обґрунтовано виділення субрегіональних ринків праці на Кіровоградському регіональному ринку праці. Запропоновано заходи з оптимізації ситуації на ринку праці регіону.

**Ключові слова:** просторова структура, регіональний ринок праці, субрегіональний ринок праці, локальний ринок праці, типізація.

**Константин Мезенцев, Наталия Мезенцева, Ирина Мостовая. ПРОСТРАНСТВЕННЫЕ АСПЕКТЫ ФУНКЦИОНИРОВАНИЯ КИРОВОГРАДСКОГО РЕГИОНАЛЬНОГО РЫНКА ТРУДА.** Рассмотрены сущность и основные концепции формирования регионального рынка труда. Определены плоскостные и точечные элементы пространственной структуры регионального рынка труда. Осуществлен кластерный анализ территориальных единиц Кировоградской области методами полной связи и Варда и выделены кластеры регионов по проявлению социально-экономических индикаторов на рынке труда. Осуществлена типизация локальных рынков труда Кировоградской области. Обосновано выделение субрегиональных рынков труда на Кировоградском региональном рынке труда. Предложены меры по оптимизации ситуации на рынке труда региона.

**Ключевые слова:** пространственная структура, региональный рынок труда, субрегиональный рынок труда, локальный рынок труда, типизация.

**Introduction.** Situation at the labor market reflects the most of socio-economic and political processes taking place in the country, and focuses most acute problems of society: high unemployment, increasing of structural imbalances in employment, uncontrolled outflow of labor force, changes in its quality and motivation, reducing of incomes and so on. At the same time, labor markets of Ukrainian regions have their own specifics. A special group is formed by labor markets of depressed regions, a typical example of which is the labor market of Kirovograd region.

The works of economists and geographers such as S. Bandur, T. Zajats, E. Libanova, V. Onikienko, V. Petyuh, M. Shalenko, O. Levada, V. Saychuk, O. Homra and others are devoted to theoretical and applied problems of functioning of the labor market in Ukraine. However, the human-geographical studies of regional and local labor markets in Ukraine didn't lose its relevance. These primarily refer typification of local labor markets of regions and identification of sub-regional labor markets. The aforementioned predetermined the topic of this article that aimed at the distinguish of elements of the spatial structure of the regional labor market, in particular, typification of local labor markets and identification of sub-regional labor markets in Kirovograd region.

**Theoretical background. Regional labor market** is a human-geographical space where as a result of relationship between employers and employees the demand, supply and price of labor are conformed, which is caused by socio-economic and geographical factors.

Nodal region theory (developed by

J.R. Boudeville and supplemented by the school of regional science) and the theory of "center-periphery" (by J. Friedman) are the basis of the concept of regional labor markets [1, p. 32]. Nodal region theory makes it possible to divide the large region into relatively integral spatial units, each of them consists of a core (center) and related areas (peripheral zone). The theory of "center-periphery" explains the evolution of spatial systems, universal character of their changes and formation of certain hierarchical division of spatial units into the core and periphery within regions, between regions, within country and so on.

Taking into account these theories, in the late 1970-s regional science scholars formulated concepts that explain the national labor market segmentation [1, p. 32]. Based on the connections of labor use, they developed a theory of distance (defines centers of manpower gravity and their potential outer boundary depending on the development of the transport network, demographic characteristics and the availability of various fields of employment), regional segmentation (based on differences in the structure of labor and jobs and their mutual impact national labor market can be divided into relatively closed regional markets) and the dual labor market (workers involved in labor migrations are divided into two groups according the mobility: the first one consists of highly skilled workers with high earnings, reliable jobs, and high mobility, and the second – lower skilled workers with lower earnings and employment opportunities).

Regional labor market is developing based on the connections in use of manpower. Primary balance between supply and demand of labor is emerges at this level. At the level of regional labor market the main fo-

cus is shifting from closed labor relations to the self-reproduction of labor resources.

The main functions of the regional labor market (RLM) are:

- informative – RLM provides information concerning the wages level, job offer, quality of labor, etc.;
- mediation – RLM provides the mediation between employers and employees;
- pricing – RLM provides the balance between demand and supply of labor, determination of its value;
- stimulative – RLM stimulates employers in competitive conditions to use labor resources better, and employees to improve their qualification;
- progressive – RLM contributes to new job offering in accordance with modern requirements and elimination of inefficient places of employment, conditions sectoral and spatial movements of labor.

The spatial structure of regional labor market is characterized by *polygonal* (regional, sub-regional and local labor markets) and *point elements* (centers of labor markets at different levels).

Functioning of the RLM is influenced by a number of human-geographical factors, the main groups of them are: environment of the labor market formation (natural and socio-economic environment, social infrastructure, settlement system), natural reproduction of labor resources, spatial labor mobility, quality of manpower [3, p. 30]. In general, the factors of formation and functioning of regional labor markets we can divide so:

- demographic and settlement factors: natural increase/decrease, migration, sex and age structure of population, share of working age population, number of urban and rural population, etc.;
- socio-economic factors: the level of socio-economic development of regions, sectoral and spatial structure of the economy, the level and quality of life, opportunities and conditions for recovery of labor, labor migration, etc.;
- educational, skills and medical-geographical factors: the level of education and skills, the experience, mentality, attitude to work, the possibilities of training and retraining of workers, health and level of medical care, etc.;
- site/situation factors.

#### **Kirovograd regional labor market: typification of local labor markets and identification of sub-regional labor markets.**

Kirovograd regional labor market consists of 21 local labor markets that administratively covering 21 districts and four cities of regional subordination.

The main features of Kirovograd regional labor market are: people aged 40 to 59 dominate in the age structure of the economically active population of the region; every third unemployed in region is young person under 35 years; the highest level of unemployment is typical for rural areas; average annual number of employees during last ten years declined from 317.2 thousand to 209.8 thousand, but the high share of seniors in its structure remains; employment in the formal sector is constantly decreasing; average nominal wages in region

in 2010 was only 81.1 % of the average value of the country; average salary of women was 82.9% of men's one, and higher than average value in Ukraine (75.0%); the pent-up demand in the region on the drivers, electric and gas welders, millwrights, tractor drivers and specialists in different engineering professions, on the other hand, there was a surplus of lawyers, economists, accountants and financiers. Based on the analysis of current trends at the labor market of Kirovograd region we can suggest that the situation characterized by surplus labor conjuncture and the necessity to improve the educational and skills level of production workers will continue.

The main limitative factors of Kirovograd regional labor market development are depopulation, intensive process of aging, numerous inter-regional labor migrations, increasing morbidity of population, the low level of economic development and regional social safety, poor business environment. The influence of all these factors has intra-regional differences. They become apparent in the following directions: urban and rural areas; regional center, cities of regional subordination and the districts; the area within a pole of influence of regional centers and cities of regional subordination, at the one side, and peripheral areas, at the other.

Grouping of territorial units of Kirovograd region by similarity of tendencies and peculiarities of labor market development was done using cluster analysis in STATISTICA program by joining method (complete linkage and Ward's methods).

Based on the results of analysis of tree diagram of territorial units clustering by complete linkage method in terms of such socio-economic indicators manifestation at the labor market as registered unemployment rate, burden per a work place/vacancy by persons not engaged in labor activity, average monthly nominal wages of employees, share of not engaged in labour activity that placed in a job in total number of the unemployed we can identify six clusters (Fig. 1):

Cluster 1 – regions with the lowest negative manifestation of indicators (Kirovograd and Svitlovodsk cities, Kirovograd, Bobrynets and Haivoron districts);

Cluster 2 – regions with low negative manifestation of indicators (Znamianka city);

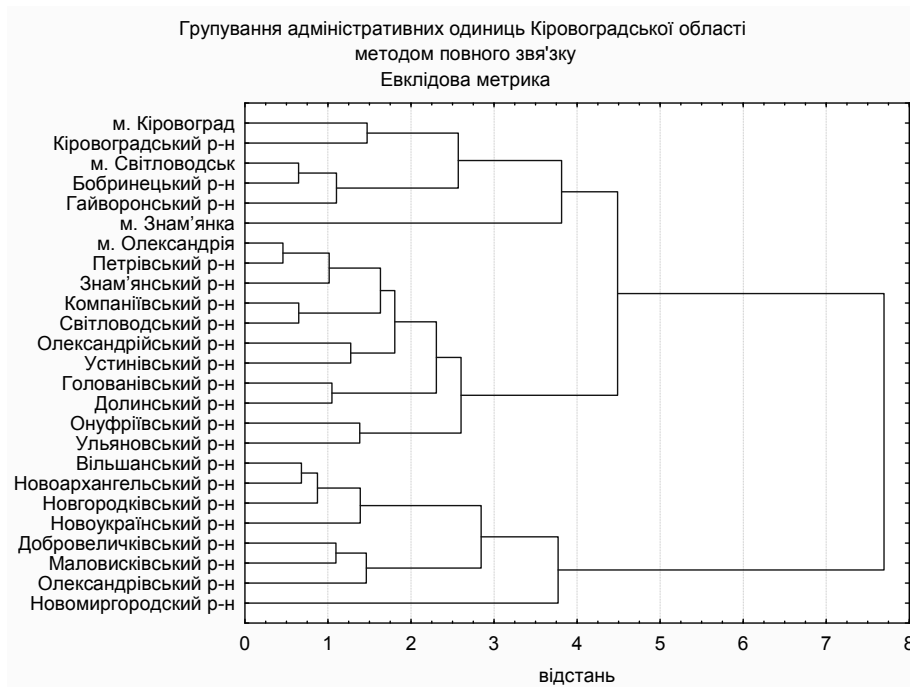
Cluster 3 – regions with middle negative manifestation of indicators (Olexandriia city, Petrove, Znamianka, Kompaniivka, Svitlovodsk, Olexandriia, Ustynivka, Holovanivsk, Dolynska, Onufriivka and Ulianivka districts);

Cluster 4 – regions with significant negative manifestation of indicators (Dobrovelichkivka, Mala Vyska and Olexandrivka districts);

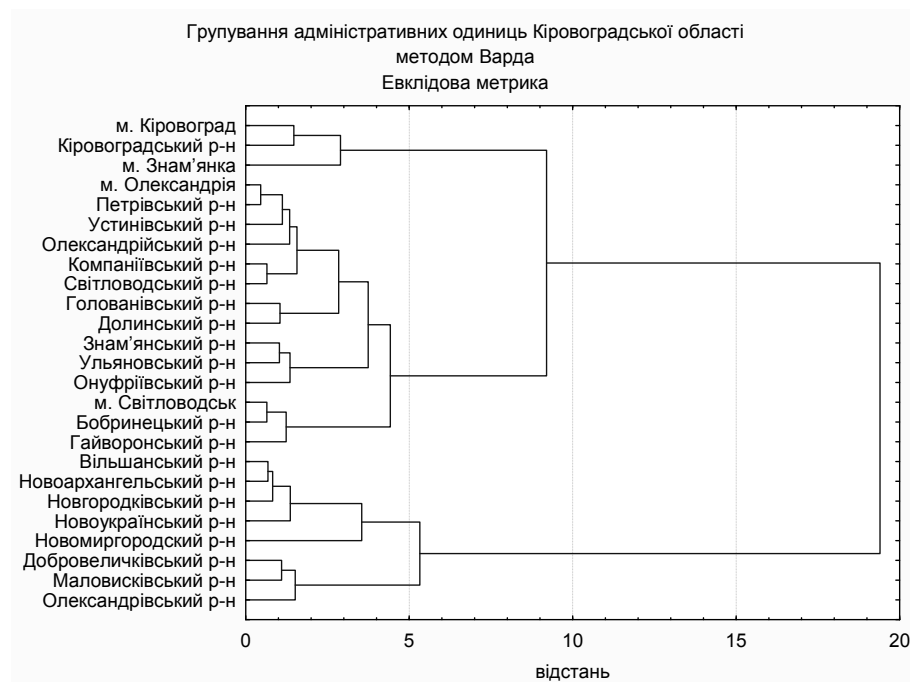
Cluster 5 – regions with the highest negative manifestation indicators (Vilshanka, Novoarkhangelsk, Novgorodka and Novoukrainka districts);

Cluster 6 – regions with catastrophic negative manifestation of indicators (Novomyrhorod district).

Based on the results of analysis of tree diagram of territorial units clustering by Ward's method in terms of the same indicators we can identify five clusters (Fig. 2):



**Fig. 1. Tree diagram of clustering (complete linkage method) of territorial units of Kirovograd region in terms of socio-economic indicators of labor market**



**Fig. 2. Tree diagram of clustering (Ward's method) of territorial units of Kirovograd region in terms of socio-economic indicators of labor market**

Cluster 1 – regions with the lowest negative manifestation of indicators (Kirovograd, Znamianka cities, and Kirovograd district);

Cluster 2 – regions with low negative manifestation of indicators (Svitlovodsk city, Bobrynets and Havoron districts);

Cluster 3 – regions with middle negative manifestation of indicators (Oleksandriia city, Petrove, Ustynivka, Oleksandriia, Kompaniivka, Svitlovodsk, Holovanivsk, Dolynska, Znamianka, Ulianiivka and Onufriivka districts);

Cluster 4 – regions with significant negative manifestation of indicators (Dobrovelichkivka, Mala Vyska and Oleksandriivka districts);

Cluster 5 – regions with the highest negative manifestation indicators (Vilshanka, Novoarkhangel'sk, Novgorodka, Novoukrainka and Novomyrhorod districts).

Based on results of clustering of territorial units of Kirovograd region in terms of socio-economic indicators manifestation at the labor market, and results of grouping of administrative units by the following com-

ponents of the labor market as registered unemployment rate, ratio of labor supply and demand, average monthly wages of employees, and taking into account the existing settlement systems, spatial differences and peculiarities of socio-economic development of the region we identified *four types of local labor markets* in Kirovograd regional labor market (Figure 3):

*Type 1.* Local labor markets with high level of jobs supply, the highest level of wages and skills of workforce in the region, a low level of registered unemployment rate, which determine the conjuncture at Kirovograd regional labor market and characterized by a middle level of tension at the labor market of Ukraine. The first type consists of Kirovograd local labor market (which is the core of Kirovograd regional labor market), Znamianka, Olexandriia, Svitlovodsk and Haivoron local labor markets (which are the core of sub-regional labor markets).

*Type 2.* Local labor markets with the middle levels of jobs supply and wages, low levels of unemployment, which are characterized by higher level of tension at the labor market. The second type consists of Bobrynets, Kompaniivka, Petrove and Ustynivka local labor markets.

*Type 3.* Local labor markets with middle levels of jobs supply and wages, high level of unemployment, which are characterized by a high level of tension at the labor market. The third type consists of Ulianivka, Onufriivka, Dolynska and Holovanivsk local labor markets.

*Type 4.* Local labor markets with low levels of jobs supply and wages, high level of unemployment, which are characterized by the highest level of tension at the labor market. The fourth type consists of Vilshanka, Dobrovelyckivka, Mala Vyska, Novgorodka, Novoarkhangelsk, Novoukrainka, Novomyrhorod and Olexandrivka local labor markets. They are in the critical situation concerning market conditions, burden per a work place/vacancy, opportunities to retrain and improve the skills of the workforce.

Analyzing the relationship of local labor markets and taking into account the peculiarities of Kirovograd sub-regional settlement system we can give following characteristics of sub-regional labor markets in Kirovograd region:

1) *Kirovograd sub-regional labor market* includes 7 local labor markets (Kirovograd, Kompaniivka, Bobrynets, Ustynivka, Novoukrainka, Novomyrhorod, Mala Vyska) and occupies 36.6% of the Kirovograd region, where live 45.3% of the region population. Sub-regional labor market was formed around the core of the regional labor market and is characterized by the highest levels of employment, skills and wages of labor, the lowest levels of unemployment and burden per work place/vacancy at Kirovograd, Kompaniivka, Bobrynets, Ustynivka local labor markets and at the same time the high level of tension in terms of employment, unemployment and wages at Novoukrainka, Novomyrhorod Mala Vyska local labor markets. It is characterized by labor surplus conjuncture.

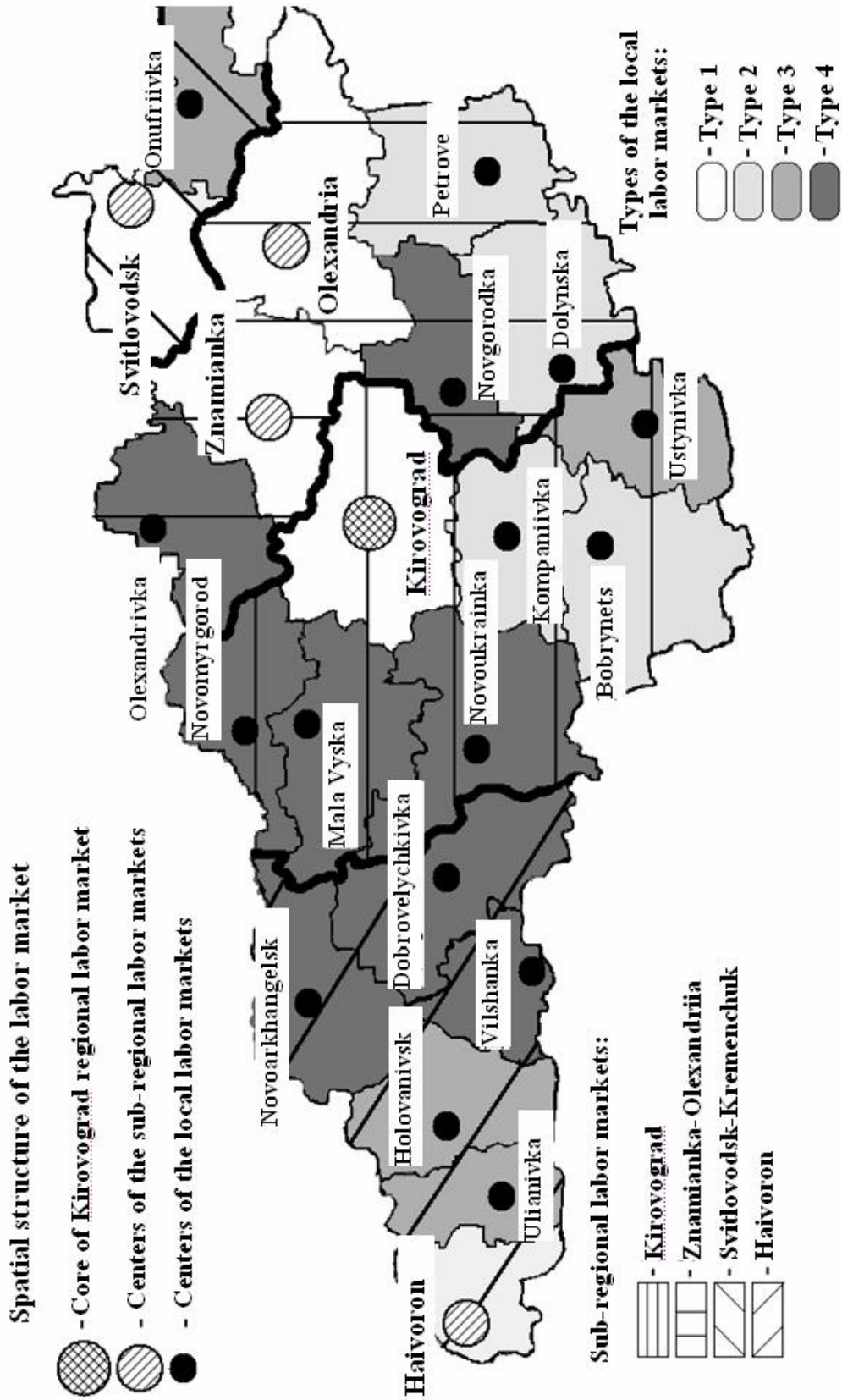
2) *Znamianka-Olexandriia sub-regional labor*

*market* includes 6 local labor markets (Znamianka, Olexandriia, Petrove, Dolynska, Novgorodka, Olexandrivka) and is characterized by middle levels of employment and wages, relatively low unemployment rate and burden per work place/vacancy. Efficiency of labor use in sub-regional labor market is characterized by problems due to some discrepancy of labor skills and available jobs. It occupies 32.1% of the region territory and 28.7% of population, and has labor surplus conjuncture, middle level of tension at Znamianka, Olexandriia, Petrove and Dolynska local labor markets and high level of tension at Novgorodka and Olexandrivka local labor markets.

3) *Svitlovodsk-Kremenchuk sub-regional labor market* was formed within the two regions (Kirovograd and Poltava) as a result of the geographical location, configuration of Kirovograd region, factors of the Svitlovodsk city emerging, existing of sub-regional settlement system, specific features of economic specialization and socio-economic relations of enterprises and establishments. It includes two local labor markets of Kirovograd region (Svitlovodsk and Onufriivka) and local labor markets of Poltava region (Kremenchuk-Komsomolsk, Kobeliaky and Kozelshchyna). Within the Kirovograd region this sub-regional labor market occupies 8.7% of the territory, where lives 8.7% of the population. It's characterized by middle levels of employment, skills and wages of labor, low levels of unemployment rate and burden per a work place/vacancy. Svitlovodsk-Kremenchuk sub-regional labor market has labor surplus conjuncture and middle level of tension.

4) *Haivoron sub-regional labor market* includes 6 local labor markets (Haivoron, Ulyanivka, Holovanivsk, Novoarkhangelsk, Vilshanka, Dobrovelyckivka) and covers 22.6% of the region territory, with 17.3% of the region population. Sub-regional labor market was formed on the basis of mining (graphite and granite) and manufacturing (sugar, etc.) industries and Pomichna railway junction functioning (Dobrovelyckha district). It is characterized by middle level of employment and wages, however, high levels of unemployment and burden per a work place/vacancy at Novoarkhangelsk, Vilshanka, Dobrovelyckivka local labor markets. Haivoron sub-regional labor market has labor surplus conjuncture, high level of tension and peripheral location in the region.

Common to all types of local labor markets measures for situation improvement at Kirovograd regional labor market are determined: stimulation of agriculture and food, building materials, engineering industries, industrial and social infrastructure development; improving of health care system, professional education and retraining of workforce, harmonization of manpower training in different professions in line with the needs of employers; development of entrepreneurship and self-employment; enhancing of motivation of rural population for employment in service industries (rural green tourism, eco-tourism, etc.); application of flexible forms of employment and public works.



*Fig. 3. The spatial structure of Kirovograd regional labor market*

**Conclusions.** Kirovograd regional labor market is characterized by lower than average in Ukraine indicators of economic activity of population, levels of employment and wages, and vice versa – higher level of unemployment rate. This situation is caused by excess of labor supply over its demand, which leads to labor surplus conjuncture at the regional labor market. The region has a number of common social problems such as poverty, low pace of the middle class formation, low standards of living as a result of low level of socio-economic development of region. Also the specific features of the

labor market of Kirovograd region are affected site/situation factors, in particular the location next to the economically developed regions, among which the region is seen as peripheral.

Spatial aspects of the regional labor market functioning are defined by the spatial structure of the regional economic sector, regional settlement system, peculiarities of the natural-geographic and socio-economic conditions and manifest in the functioning of the existing sub-regional and local labor markets.

#### References:

1. *Shalenko M. Koncepciya teritorialnoi segmentacii rynku praci Ukrainy ta yiyi praktychne vykorystannya / M. Shalenko. // Ekonomika Ukrainy. – 1994. – № 7. – S. 31-38.*
2. *Mezentseva N.I. Zovnishni trudovi migracii v konteksti zajnyatosti na rynku praci Ukrainy / N.I. Mezentseva, K.V. Mezentsev // Visnik Kyivskoho universytetu. Geografiya. – 2010. – Vyp. 57. – S. 8-10.*
3. *Mezentsev K.V. Ocinka chynnyktiv funkcionuvannya Hmelnytskoho regionalnogo rynku praci / K.V. Mezentsev, V.S. Sajchuk // Visnyk Kyivskoho universytetu. Geografiya. – 2011. – Vyp. 58. – S. 30-35.*

#### Summary

#### **Kostyantyn Mezentsev, Nataliia Mezentseva, Iryna Mostova. SPATIAL ASPECTS OF KIROVOGRAD REGIONAL LABOR MARKET FUNCTIONING.**

Labor markets of Ukrainian regions have their own specifics. A special group is formed by labor markets of depressed regions, a typical example of which is the labor market of Kirovograd region. Kirovograd regional labor market is characterized by lower than average in Ukraine indicators of economic activity of population, levels of employment and wages, and vice versa – higher level of unemployment rate. Based on results of clustering of territorial units of Kirovograd region in terms of socio-economic indicators manifestation at the labor market, and results of grouping of administrative units by the following components of the labor market as registered unemployment rate, ratio of labor supply and demand, average monthly wages of employees, and taking into account the existing settlement systems, spatial differences and peculiarities of socio-economic development of the region we identified four types of local labor markets in Kirovograd regional labor market. Relationship of local labor markets and the peculiarities of Kirovograd sub-regional settlement system lead to the conclusion that four sub-regional labor markets were formed in Kirovograd region.

**Keywords:** spatial structure, regional labor market, sub-regional labor market, local labor market, typification.