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**CLASSIFICATION OF MUNICIPAL AREAS BY LIVING
STANDARDS AND SOCIOECONOMIC DEVELOPMENT**

The article presents the main aspects of the studied problem, the generalized conclusions on the basis of the performed analysis and classification results are formulated. The data received as a research outcome can promote the solution of a number of tasks: to define the most problem areas of life in a region; to carry out the diagnostics of the condition of regional spheres of activity. The information can also be used while making administrative decisions and designing municipal programs of socioeconomic development.

Keywords: living standards; municipal area.

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**КЛАСИФІКАЦІЯ МУНІЦИПАЛЬНИХ РАЙОНІВ
ЗА РІВНЕМ ЖИТТЯ НАСЕЛЕННЯ І СОЦІАЛЬНО-
ЕКОНОМІЧНОГО РОЗВИТКУ**

У статті розкрито основні аспекти проблеми, що вивчається, сформульовано узагальнені висновки на основі виконаного аналізу і результатів класифікації. Дані, отримані в результаті дослідження, можуть сприяти вирішенню низки завдань: визначенню найбільш проблемних галузей життя населення регіону, діагностиці стану регіональних сфер життєдіяльності, а також можуть бути використані при розробці управлінських рішень та муніципальних програм соціально-економічного розвитку.

Ключові слова: рівень життя населення; муніципальний район.

Форм. 3. Табл. 1. Рис. 1. Літ. 15.

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ПО УРОВНЮ ЖИЗНИ НАСЕЛЕНИЯ И СОЦИАЛЬНО-
ЭКОНОМИЧЕСКОМУ РАЗВИТИЮ**

В статье раскрыты основные аспекты изучаемой проблемы, сформулированы обобщенные выводы на основе проделанного анализа и результатов классификации. Данные, полученные в результате исследования, могут способствовать решению ряда задач: определению наиболее проблемных областей жизни населения региона; осуществлению диагностики состояния региональных сфер жизнедеятельности; а также могут быть использованы при разработке управленческих решений, муниципальных программ социально-экономического развития.

Ключевые слова: уровень жизни населения; муниципальный район.

Problem statement. Currently the category "standard of living" is used more widely in scientific writings and everyday practice. Despite a large variety of the existing concepts on the above category, they fail to achieve a holistic picture of the phenomenon under study. Ambiguity in understanding the category "standard of living" is primarily connected with comprehensiveness of the subject area (Dagbayeva, 2005; Grzebyk, 2011).

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Standards of living and welfare are important socioeconomic criteria for choosing the direction and priorities of socioeconomic policy. Therefore, close attention of state and municipal government to people's living standards make the current research actual.

Review of recent publications. Since the complexity and multidimensionality of the category "standard of living" causes methodological ambiguity of its definition. We argue that the standard of living can't be expressed by a single characteristic value as its adequate assessment requires a whole system of them. However, the analysis demonstrated that a unified and universally accepted system of values that characterize people's living standards currently does not exist. We think that in order to perform a full assessment the system of characteristic values must be adapted to the conditions of a discrete region (and specifically in regard to municipal entities). In return it will create an opportunity for early detection and subsequent system analysis of changes occurring in the level of life of different population groups in the region and causes of these changes followed by proposals on further improvement of living standards in the region.

The basis for assessment of the standards of living is comprised of 3 main categories: "Population quality", "Level of prosperity", and "Quality of living conditions and social sphere".

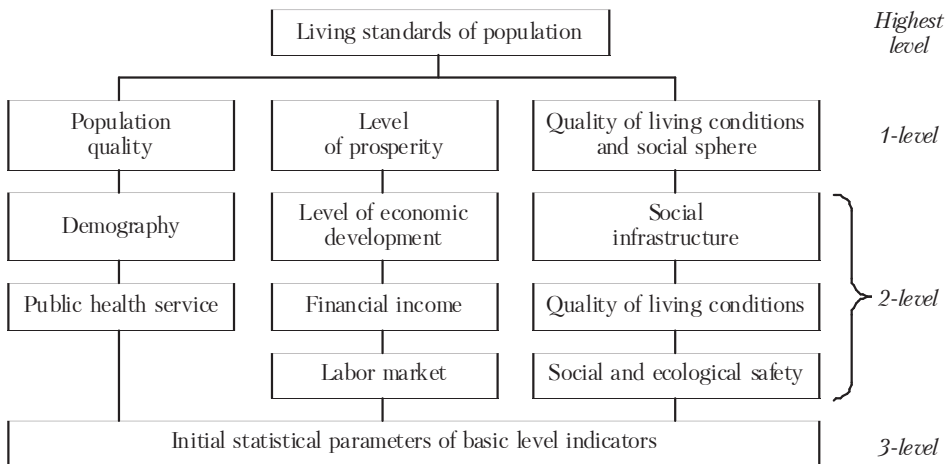


Figure 1. System of statistical parameters of people's living standards, authors' development

Research objective. According to the Strategy for Socioeconomic Development of Omsk region until 2025 one of the priorities is a balanced socioeconomic development of the region (Omskstat, 2013). Level of socioeconomic inequalities of municipalities is directly reflected in the standard of living of population. Hence, one of the objectives of this study is to identify the spatial differentiation of living standards.

Research methods. The above sets of variables describing the level of living of population in municipal districts of Omsk region were used for constructing the typological groups which should ultimately facilitate the process of conclusion making on the level of their differentiation (Poltarykhin and Vinnikova, 2013). In order to reduce

the dimension of feature space and get the integral characteristics (second level), containing more objective evaluation, by method of relative differences, we standardize the values of variables based on the following formula (Gritsenko, 2009):

$$t_{ij} = \frac{x_{ij} - \min(x_{ij})}{\max(x_{ij}) - \min(x_{ij})}, \quad (1)$$

where t_{ij} – the standardized value (coefficient) of j -indicator (variable) by i -region; x_{ij} – the value of j -indicator by i -region; $\min(x_{ij})$ and $\max(x_{ij})$ – accordingly minimum and maximum values of j -indicator in present totality; $i = 1, 2, \dots, N$ – the number of regions; $j = 1, 2, \dots, n$ – the number of indicators.

Formula (1) in the case of primary indicators that have a negative (crime rate, infant mortality etc.) impact on the living standards of population becomes:

$$t_{ij} = 1 - \frac{x_{ij} - \min(x_{ij})}{\max(x_{ij}) - \min(x_{ij})}. \quad (2)$$

Further on for obtaining in accordance with Figure 1 the integral characteristics of the second level (composite indices of first order) the following formula is applied:

$$I_{i1} = \frac{1}{n} \sum_{j=1}^n t_{ij}, \quad (3)$$

where I_{i1} – the composite index of the first order for i -region; t_{ij} – the standardized value (coefficient) of j -indicator (variable) by i -region; n – the number of indicators that form the composite index.

We carried out the calculation of all 8 composite indices of the first order in each municipal district. The analysis was based on statistical data (Omskstat, 2006–2013) during the period of 2005–2012 (which revealed major differences in living standards of population). The procedure of classification the municipal districts of the Omsk region was held by cluster analysis, the assessment of degree of similarity between them and their assignment to a particular cluster system were implemented in "STATISTICA".

Key research findings. For identifying the differences we calculated the average values of the first order indices of the obtained clusters. Of a particular interest is the analysis of obtained clusters features as their identification will allow track the relations between the indicators and give general characteristic of a prevailing socio-economic situation and living standards in the region (Alkhimenko, 2013; Asaliev et al., 2014). Thus, over the period from 2005 to 2012 there can be clearly distinguished 3 types (groups) of clusters in the region.

The greatest differences in the assessment of the standards of living and socio-economic situation as a whole in the context of obtained groups are associated with the level of prosperity: by clusters districts within the first group there are high values of all indices in the category "Level of prosperity." Districts of the first group clusters are also characterized by high index values in the category "Demography". As long as areas of this group had higher values for most composite indices of the first order, which characterize people's living standards, they were assigned to areas with high level of socioeconomic development.

The third group, unlike the second one, is characterized mainly by low levels of social and environmental safety, high level of health, a relatively higher level of wealth (although the overall level of well-being according to clusters is low). Areas of the

group are assigned to areas with conditionally low socioeconomic development. The second group is characterized by an extremely low level of economic development, monetary income and unfavorable situation at the labor market. At the same time areas of this group are environmentally safe areas. Areas of this group are related to as areas with low socioeconomic development.

Since the standard of living is the most important factor for socioeconomic development, analysis of the frequency of clusters entering this or that group for 2005–2012 allows distinguishing types of socioeconomic development of the Omsk region districts (to a stable type of socioeconomic development are related the municipal districts which are a part of a certain group during almost the whole analyzed period, to a relatively stable type – most of the years in a set period).

Table 1. Grouping of Omsk region districts by level and type of socioeconomic development according to the results of entering frequency into a particular cluster during the period of 2005–2012, developed by the authors

Type of socioeconomic development	Natural and climatic zone			
	North	Northern forest-steppe	Southern forest-steppe	Steppe
High level of socioeconomic development				
Sustainable			Azovskiy German, Isilkul'skiy, Kalachinskiy, Komilovskiy, Lyubinskiy, Maryanovskiy, Omskiy	
Quite sustainable				Tavricheskiy
Decreasing				Novovarshevskiy, Odesskiy, Cherkasskiy
Very low level of welfare, ecological territories				
Sustainable	Ust-Ishimskiy	Gorkovskiy, Krutinskiy, Nazyvaevskiy, Tyukalinskiy,		Okoneshnikovskiy, Pavlogradskiy, Poltavskiy, Russko-Polyanskiy, Chshebakulskiy
Quite sustainable	Tevrizskiy	Bolsherechenskiy, Nizhneomskiy, Sargatskiy, Muromtsevskiy	Moskalenskiy	
Low level of welfare and social and ecological safety				
Sustainable	Tarskiy			
Quite sustainable	Znamenskiy, Bolsheukovskiy, Sedelnikovskiy			

The results presented in Table 1 suggest that during the period (2005–2012) 18 out of 32 districts of Omsk region are characterized by sustainable development, but 10 of them are part of a group with a very low level of prosperity and socioeconomic development in general. Let us note that major part of the group are areas of the northern steppe and steppe climatic zones. The situation on the northern forest-steppe zone is exacerbated by the fact that 3 of 8 districts zones are also characterized by relatively stable type of development with very low welfare. In general, during the period more than 1/3 parts of the region (namely, 14 districts out of 32) are the areas with low levels of economic development, monetary income and the unfavorable situation at the labor market. Extremely low level of welfare reduces economic devel-

opment of these areas; it prevents the inflow of qualified personnel and modern industries development. For the steppe zone there is a tendency for decrease of welfare and socioeconomic development: 3 zone areas (that is 1/3 of the total), which in certain years were areas with relatively high level of welfare, have now a lower standard of living. If this tendency keeps going, areas of steppe natural climate zone in terms of life and socioeconomic development in general will come close to the northern forest-steppe areas. Most areas of the northern climatic zone (especially Tara district) are characterized by adverse socioenvironmental conditions. The absolute leader in terms of people's standards of living and socioeconomic development is the southern forest steppe natural climatic zone, 8 of the 9 areas of which are characterized by sustainable type of development, a high level of economic development, monetary income, favorable situation at the labor market, relatively good demography.

Conclusions. Sustainable socioeconomic growth is impossible without taking into account features of territories, reducing regional imbalances in socioeconomic development and the creation of conditions for the development of problem areas. Measures for improving people's standards of living and socioeconomic development of municipalities should be carried out in accordance with climatic zones within which the municipal areas are relatively similar by the identified in the process of cluster analysis parameters (indicators) climatic zones, as they considerably vary.

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Стаття надійшла до редакції 25.06.2014.