ЕКОНОМІЧНА ТЕОРІЯ ТА ІСТОРІЯ ЕКОНОМІЧНОЇ ДУМКИ

UDC 330.3

Zhuravlova Yu.O.,
Candidate of Sciences in Public Administration,
Doctoral Student,
Odessa National Economic University

HUMAN DEVELOPMENT: REGIONAL MEASUREMENT

Zhuravlova Yu.O. Human development: regional measurement. The article analyses the influence of indicators of the Regional Human Development Index such as health, education, the condition of the environment on life and the welfare of the population on the example of the Odesa region. The analysis of the demographic situation is characterized by population decline, low life expectancy, deterioration of health, etc. It was noted that the demographic situation in the region affects the quantitative indicators of the condition of the education sector. It is concluded that the work of local authorities and local government should be aimed at creating favourable conditions for improving the quality of life, health, and well-being of the population of the region and the reproduction of natural resources.

Key words: human development, Regional Human Development Index, health, education, environment, region

Журавльова Ю.О. Людський розвиток: регіональний вимір. У статті досліджено вплив показників Індексу регіонального людського розвитку таких як здоров'я, освіта, стан навколишнього середовища на життя та добробут населення на прикладі Одеської області. Проаналізовано демографічну ситуацію, що характеризується скороченням населення, невисокою тривалістю його життя, погіршенням стану здоров'я тощо. Відмічено, що демографічна ситуація в області впливає на кількісні показники стану галузі освіти. Зроблено висновок, що робота місцевих органів виконавчої влади та органів місцевого самоврядування повинна бути спрямована на створення сприятливих умов для покращення якості життя, здоров'я та добробуту населення області та відтворення природних ресурсів.

Ключові слова: людський розвиток, Індекс регіонального людського розвитку, здоров'я, освіта, навколишнє середовище, регіон

Журавлева Ю.О. Человеческое развитие: региональное измерение. В статье исследуется влияние показателей Индекса регионального человеческого развития таких как здоровье, образование, состояние окружающей среды на жизнь и благосостояние населения на примере Одесской области. Проанализирована демографическая ситуация, которая характеризуется сокращением населения, невысокой продолжительностью жизни, ухудшением состояния здоровья и т.д. Отмечено, что демографическая ситуация в области влияет на количественные показатели состояния отрасли образования. Сделан вывод, что работа местных органов исполнительной власти и органов местного самоуправления должна быть направлена на создание благоприятных условий для улучшения качества жизни, здоровья и благосостояния населения области и воспроизводства природных ресурсов.

Ключевые слова: человеческое развитие, Индекс регионального человеческого развития, здоровье, образование, окружающая среда, регион

Formulation of the problem. At the present stage, one of the priorities of the state is to ensure the growth of human development, as it is able to ensure the innovative development of the country, in particular, the region. Important aspects of human development are the ability to have a decent standard of living, the condition of the environment, population health, education, etc.

Analysis of recent research and publications. Problems of human development, in particular, at the regional level, are devoted to research of the collective of scientists of Ptoukha Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine under the leadership of E. M. Libanova [1]. These issues are in the field of view of such scientists as Makarova O.V. [2, 3], Kalachova I.V. [4], Olvinskaya J.O. [5], Khmelevska O.M. [3], Savchenko Y.A., Direktorenko O.V., Lega A.A. [6].

Setting objectives. The purpose of this article is to research the impact of indicators of the Regional Human Development Index such as health, education, the condition of the environment on life and the welfare of the population on the example of the Odesa region.

Presentation of the main research material. One of the main priorities of state policy, in particular, local government, is a significant improvement in the quality of life

of each citizen, his harmonious development by actively influencing the aggregate of indicators and characteristics of the demographic component, in-depth analysis and rational use of educational and scientific potential, etc.

At the heart of any social process, there are demographic features, because they influence the formation of the structure of education and health care system over time.

The demographic situation in the Odesa region is characterized by a decline in the population, a low duration of its life, a significant number of elderly people, the spread of cancer, the threat of HIV infection, etc.

According to the influence on the health of the population in the modern conditions, the first place is played by lifestyle factors, they account for more than 50%. In the second place – biological factors (sex, age, heredity, constitution), which account for 20%. Environmental factors (air, water, food, etc.) are ranked third; their impact on health is estimated at 20%. Purely medical factors (therapeutic and prophylactic, and sanitary and anti-epidemic measures (vaccination against infectious diseases, quality of treatment and examination of patients, etc.) determine 10% [7].

The analysis of Figure 1 shows that during 2000–2017, the number of population in the Odesa region declined by 123,9 thousand people (5%), including – urban population – by 57,5 thousand people (3,5%), rural population – 66,4 thousand people (7,8%).

The analysis of Figure 2 shows that during the years of 2000–2012 in Odesa region the birth rate is rising – by 10342 people (34,1%), with the birth rate peak at 30384 children in 2012; the trend towards fertility decline is forecast for 3967 persons from 2012 (13,1%).

The analysis of Table 1 shows that during 2000–2015 in Odesa region, the average life expectancy at birth of both sexes is increased by 3,78 years (the indicator for Ukraine is 3,55 years, the indicator for EU countries is 3,65 years), in this case, number of men – 4,41 years (the indicator for Ukraine is 4,3 years; the indicator for the EU countries is 4,2 years); of women – 2,95 years (the indicator for Ukraine is 2,8 years, the indicator for EU countries – 3,1 years).

At the same time, in 2015, the average life expectancy at birth in the Odesa region is almost one year lower than in Ukraine and 9,34 years lower than in the countries of the European Union. The average life expectancy at birth for men in the Odesa region is practically the same as the average in Ukraine, however, it is 10,86 years lower than in the EU. Women have the average life expectancy at birth is lower than in Ukraine for 1,61 years and 7,91 years lower than in the EU.

In the Odesa region, there is deterioration in the health of the population, increase in morbidity and mortality.

The analysis of Table 2 shows that during 2005–2016 in the structure of total mortality in Odesa region, the mortality rate from diseases of the blood circulation system increased by 5,9% and oncological diseases by 1,9%; decreased by external causes of death – by 4,5%, diseases of the digestive system – by 0,8%, respiratory diseases – by 0,5%, some infectious and parasitic diseases – by 1,5%.

In 2016, the mortality rate from the circulatory system in the Odesa region is 66,1% in the structure of total mortality, which is 1,1% lower than Ukraine (Ukraine – 67,2%), and mortality from oncological diseases – 14,5%, which is 1,0% more than in Ukraine (Ukraine – 13,5%). In fact, these two classes of diseases determine 80,6% of the population loss in the Odesa region (Ukraine 80,7%).

At the same time, according to the forecast of the existing statistical data, morbidity and mortality from malignant neoplasms by 2021 in the Odesa region will increase by 1,5-2 times [10].

In 2016, Odesa hold the first place in the number of patients diagnosed with active tuberculosis for the first time in their lives (2594 persons or 11,1%); 2nd place – by the number of HIV-infected and AIDS patients diagnosed for the first time in their lives (2158 persons or 12,6%) after Dnipropetrovsk region (3085 persons or 18,0%), and 5th place by the number of the first registered cases of illnesses (1632492 persons or 5,9%) after the Dnipropetrovsk (2899711 persons or 10,6%), Lviv (2004843 persons or 7,3%), and Kharkiv (1861034 persons or 6,8%) regions, Kyiv (2534246 persons or 9,3%) [11].

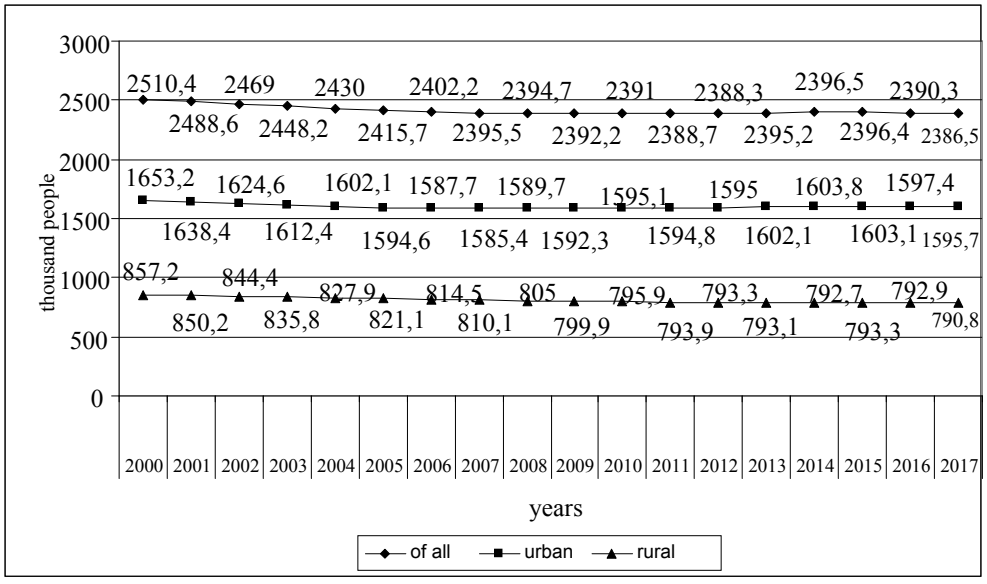

Fig. 1. The number of the existing population of the Odesa region, 2000-2017 years

Source: [8]

Recently, there was a difficult situation with the spread of certain infectious diseases, in particular, the measles. For example, in the city of Odesa from 322 patients with confirmed kidney disease registered in 2018, 96,3% had not been vaccinated from measles, one dose of vaccine was received in 3,4% of patients and 0,3% of patients with measles received two doses of the vaccines [12].

Environmental and population safety issues are aggravated in the region. One of the most important is the problem of providing drinking water to the Odesa region. The sanitary and technical condition of water supply facilities in the region is unsatisfactory; the water supply system and distribution network wear is about 70%, especially in rural areas [13, p. 46].

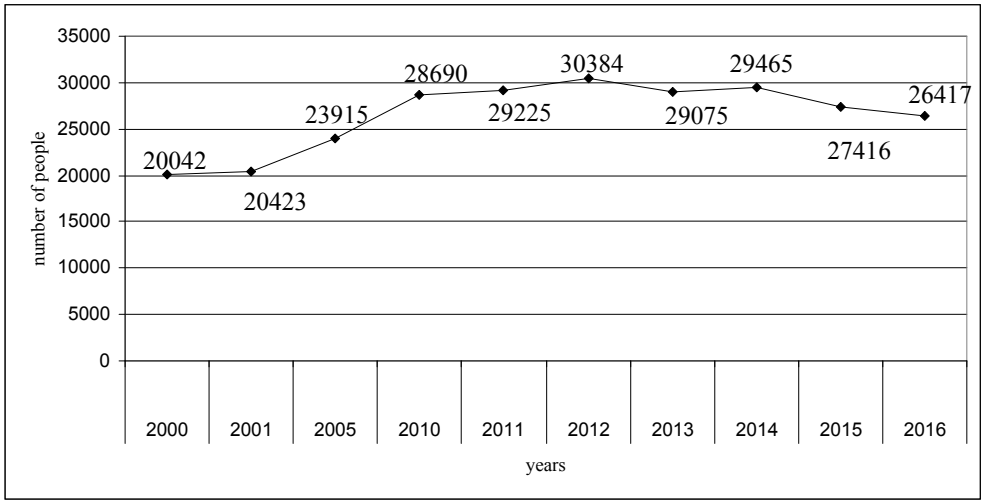

Fig. 2. Dynamics of fertility in the Odesa region, 2000–2016 years

Source: [8]

Table 1

Average life expectancy at birth by gender

	years						
	2000	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Odesa region							
both articles	66,58	68,95	69,78	70,05	70,37	70,33	70,36
men	61,53	64,33	65,30	65,51	65,93	65,87	65,94
women	71,74	73,52	74,13	74,47	74,67	74,69	74,69
Ukraine							
both articles	67,8	70,4	71,0	71,1	71,3	71,35	71,35
men	62,1	65,3	66,0	66,1	66,3	66,3	66,4
women	73,5	75,5	75,9	76,0	76,2	76,4	76,3
EU28							
both articles	76,05	78,75	79,05	79,15	79,5	79,8	79,7
men	72,6	75,6	75,9	76,1	76,5	76,8	76,8
women	79,5	81,9	82,2	82,2	82,5	82,8	82,6

Source: [8; 9, p. 131, 132]

Table 2

Dynamics of the mortality rate for causes of death in the Odesa region (percentages)

years	**from them from:**					
	circulatory system diseases	**neoplasm**	**external causes of death**	**diseases of the digestive system**	**respiratory diseases**	**some infectious and parasitic minerals**
2005	60,2	12,6	10,8	5,1	2,9	4,4
2010	63,9	13,2	7,4	4,9	2,5	3,9
2011	63,5	13,7	7,4	4,9	2,2	4,1
2012	63,6	14,1	6,9	5,3	2,4	3,6
2013	64,2	14,1	6,7	4,9	2,6	3,3
2014	65,4	13,4	7,0	4,7	2,4	2,9
2015	66,3	13,6	6,5	4,5	2,4	3,1
2016	66,1	14,5	6,3	4,3	2,4	2,9

Source: [8]

The main source of water for the city of Odesa and the Odesa region as a whole is the Dnistrovsky water supply system and artesian water. Emissions of harmful substances in water adversely affect health. Diseases, mainly, arise in the course of chronic administration to the organism of substances with cumulative toxic effects, for example, heavy metals or carcinogenic compounds. High indicators of bacterial and chemical contamination of sources of household drinking water supply with open water reservoirs of the Dniester River, the Danube River, and Lake Yalpug are raised due to emergency situations with the discharges of harmful substances from the territories of the border countries, and the barrier function of the water treatment facilities does not correspond to the class of water supply sources.

One of the priority issues is the restoration of Lake Sasik ecosystem and the improvement of the ecological situation in the region. In 1978, Sasik Lagoon turned into a lake for irrigation of the land, erecting the dam and pouring Danube water into it. But already in the 80s, scientists found the negative effects of water, which remained salty, on the ground. The irrigation system was ineffective and is not actually used today. Sasik slowly dies. After the sea estuary has been converted into an artificial lake, the ecological situation in the region has deteriorated significantly: thousands of hectares of salted lands, damage hydro exchange to Sasik (algal blooms, sick fish), pollution of near-water region, deterioration of groundwater quality, which leads to an increase in diseases and deaths among locals [14].

Non-conformity of drinking water quality with regulatory requirements is one of the reasons for the spread of many infectious diseases in the region (viral hepatitis A, typhoid, rotavirus infection, etc.) and non-infectious diseases (diseases of the digestive system, cardiovascular, endocrine system, etc.).

So, in 2016, an outbreak of intestinal infection has been reported in city Izmail, Odesa region. The reason for this was the rota and nova viruses that got into the organism of the victims due to the use of poor-quality drinking water, the pollution of which occurred as a result of torrential rains. Among the victims – 678 people, including 386 children. 93% of people with symptoms observed the relationship between their infection and the use of raw drinking water, another 3% associated diseases with eating home-made dairy products, and 4% believed that poisoning provoked vegetables and fruits, washed under running water [15].

The demographic situation in the region affects the quantitative indicators of the state of the education sector.

The analysis of Table 3 shows that during 2000/2001 – 2010/2011 academic years, the number of people studying in Odesa region education institutions has decreased by 82,5 thousand people (17,2%), in particular, in institutions of general secondary education – by 108,6 thousand people (31,6%), institutions of vocational education – by 0,5 thousand people (2,6%), colleges, technical schools – by 12,2 thousand people (44,2%). On the contrary, the number of people studying at universities, academies, institutes increased by 38,8 thousand people (30,5%).

During the 2010/2011–2016/2017 academic years, there is a tendency for a decrease in the number of people studying in educational institutions of the Odesa region for 18,8 thousand people (4,7%), in particular, in vocational education – by 2,9 thousand people (15,6%), colleges, technical schools – by 0,9 thousand people (5,8%), universities, academies, institutes – by 28,2 thousand people (22,2%). On the contrary, the number of people studying in institutions of general secondary education increased by 13,2 thousand people (5,3%).

It should be noted that the number of students studying in state-commissioned universities, academies, and institutions of the Odesa region during 2010/2011–2015/2016 increased from 40,0% to 48,8%, respectively [16].

The analysis of Figure 3 shows that during 2000–2017 the number of graduates of the 9th grades is reduced – by 14,1 thousand people (40,3%), graduates of the 11th grades – by 9,6 thousand people (43,1%).

Ptoukha Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine developed the Methodology for measuring the Regional Human Development Index that is used to calculate human development indicators and assesses the state and dynamics of human development in the background of other regions of Ukraine. Indicators are included in the calculation of the Regional Human Development Index, in particular, for the blocks "Reproduction of the population" and "Education" [17].

The analysis of Table 4 shows that during 2013–2016, Odesa region has improved its positions by block 1 "Reproduction of the population" by 2 points and in 2016 ranked 13th out of 25 regions. At the same time, it is noteworthy

Table 3

The number of people who studied in educational institutions of the Odesa region (at the beginning of the school year, thousand people)

Educational establishments	Educational years							
	2000/ 2001	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015	2015/ 2016	2016/ 2017
Total	**479,3**	**396,8**	**390,3**	**381,9**	**377,2**	**374,0**	**373,4**	**378,0**
In institutions of general secondary education	344,2	235,6	236,3	235,1	235,2	240,3	243,3	248,8
Institutions of professional (vocational) education	19,1	18,6	18,2	18,9	18,2	17,4	17,6	15,7
In institutions of higher education	116,0	142,6	135,8	127,9	123,8	116,3	112,5	113,5
incl.								
Colleges, technical schools	27,6	15,4	17,2	13,6	13,6	12,5	14,6	14,5
Universities, academies, institutes	88,4	127,2	118,6	114,3	110,2	103,8	97,9	99,0

Source: [8]

that the best indicator in 2016 is the indicator of total fertility – 4th place, and the lowest – the probability of women to live from 20 to 65 years old (21st place).

The analysis of Table 5 shows that during 2013–2016, the Odesa region slightly improved its position by block 6 "Education" by 1 point and in 2016 it ranked 9th out of 25 regions. At the same time, it should be noted that in comparison with 2014, Odesa region lost 4 positions. Indicators deteriorated for this block: the coverage of preschool educational institutions for children aged 3-5 years – 20th place (in 2014 – 18th place) and the average length of training for persons aged 25 and over – 6th place (in 2014 – 2nd place). At the same time, the average score improved according to the results of external independent evaluation: in 2016, Odesa region went to the 15th place (in 2014 – 19th place).

Conclusions from the conducted research. Thus, it can be concluded that the work of local authorities and local government should be aimed, in particular, at creating a satisfactory environment for the population, namely:

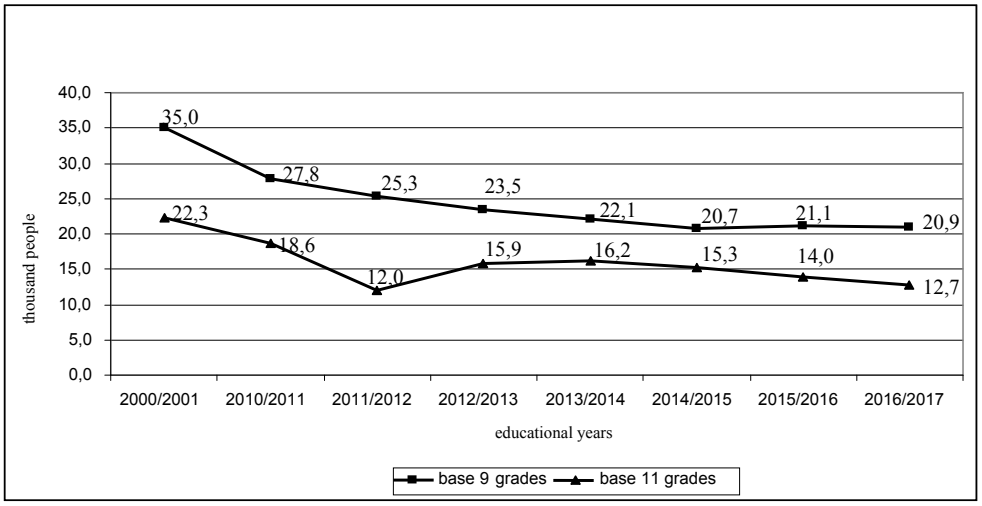

Fig. 3. Dynamics of the issue of students of 9th and 11th grades by the institutions of secondary education of the Odesa region

Source: [8]

Table 4

Values and ranks of indicators for the "Reproduction of the population" block of the Regional Human Development Index for the Odesa region, 2013–2016 years

Years	Total fertility rate		Child mortality (mortality in children under 5 years of age), %		Average life expectancy at birth, years		The probability of men to live from 20 to 65 years		The probability of women to live from 20 to 65 years		Total by block	
	value	rank	value	rank	value	rank	value	rank	value	rank	value	rank
2013	0,1043	5	0,1282	16	0,1948	16	0,1483	12	0,1076	22	0,6832	15
2014	0,1051	5	0,1419	9	0,1960	15	0,1477	15	0,1082	22	0,6990	11
2015	0,1054	5	0,1269	16	0,1939	15	0,1468	15	0,1074	22	0,6804	14
2016	0,1074	4	0,1267	13	0,1943	15	0,1481	14	0,1084	21	0,6848	13

Source: [18]

Table 5

Values and ranks of indicators for the "Education" block of the Regional Human Development Index for the Odesa region, 2013–2016 years

Years	A net indicator of coverage of pre-school educational institutions for children aged 3-5 years, %		Coverage of secondary education for children of school age (6-18 years), %		The share of people with education is not lower than the "basic higher" level among the population 25 years and older, %		The average duration of training for persons aged 25 and over, years		The average score for the results of the external independent evaluation (for all subjects)		Total by block	
	value	rank	value	rank	value	rank	value	rank	value	rank	value	rank
2013	0,0753	18	0,2226	9	0,1916	4	0,2056	2	0,1346	19	0,8297	10
2014	0,0763	19	0,2269	11	0,2073	4	0,2083	3	0,1371	19	0,8560	5
2015	0,0761	19	0,2269	9	0,1944	3	0,2040	6	0,1369	19	0,8384	8
2016	0,0745	20	0,2253	7	0,1929	3	0,2025	6	0,1363	15	0,8315	9

Source: [18]

prevention of diseases, especially infectious and socially dangerous diseases such as HIV/AIDS, tuberculosis, alcoholism, psychiatric disorders, drug addiction; reducing the risks associated with pollution and harmful environmental impact in order to preserve, strengthen, and restore human health, increase the duration and improve the quality of its life; implementation of environmental and protection of nature programs aimed at improving the quality of air and water; ensuring the appropriate level of accessibility and quality of education for each person. This will improve the demographic situation in the region and create favourable conditions for the improving the quality of life, health, and well-being of the population of the region and the reproduction of natural resources.

References:

1. Human development in Ukraine. Modernization of social policy: regional aspect (collective monograph) / ed. E.M. Libanova. Institute of Demography and Social Research named M.V. Ptyha of the NAS of Ukraine. K, 2015. 356 p.
2. Makarova O.V. Measurement of the human development in Ukraine's regions: methodological aspects and the evaluation of results. Economy of Ukraine. 2015. № 3 (640). P. 41-53.
3. Makarova O.V., Khmelevska O.M. The typology for regional human development: problems and prospects of the use. Demography and Social Economy. 2015. № 3 (25). P. 112-125.
4. Kalachova I. V. Indicators of regional human development as a tool for assessing the effectiveness of socio-economic policies. URL: http://www.rusnauka.com/PNR_2006/Economics/13_kalachova%20irina%20.doc.ht
5. Olvinskaya J.O. Differetiation Ukrainian regions by level of human development. Economics, management, law: problems and prospects: Collection of scientific articles.United Kingdom:Agenda Publishing House. 2015. Vol. 1. P. 350-353.
6. Savchenko Y.A., Direktorenko O.V., Lega A.A. Analysis and forecasting of regional human development of Ukraine based on inductive algorithms. Inductive modeling of complex systems. 2012. № 4. P. 189-197.
7. Shekera O.G. Environmental Impact on Public Health (a brief review). – URL: http://healthysociety.com.ua/index.php?option=com_content&view=article&id=756:2012-01-28-10-00-00&catid=36:2011-04-19-08-30-
8. Official site of the Main Department of Statistics in the Odessa region. – URL: http://www.od.ukrstat.gov.ua/
9. Demographic Yearbook "The Population of Ukraine for 2016". Kyiv, 2017. 134 p.
10. On approval of the regional target program "Affordable medicine for 2018-2020 years": the decision of the Odessa Regional Council dated December 21, 2017, No. 580-VII. URL: http://oblrada.odessa.gov.ua/
11. Healthcare facilities and morbidity of the population of Ukraine in 2016. Statistical bulletin. Kyiv. 2017. 92 p.
12. Official site of the city of Odessa. URL: http://omr.gov.ua/
13. Regional report on the state of the environment in the Odessa region in 2016. URL: http://ecology.odessa.gov.ua/
14. On Approval of the Perspective Action Plan for Implementation in the Odessa Region EU Strategy for the Danube Region: Decision of the Odessa Regional Council dated December 21, 2017 No. 577 – VII.URL: http://oblrada.odessa.gov.ua/
15. Official site of the city of Izmail. URL: http://www.izmail-rada.gov.ua/
16. Official site of the Department of Education and Science of the Odessa Regional State Administration. URL: http://osvita.odessa.gov.ua/
17. Integral Regional Human Development Index. URL: http://www.idss.org.ua/ukr_index.html
18. Regional human development. Statistical bulletin. Kyiv. 2017. 68 p.