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**Objective evaluation of the quality of life of the Amur region**

**population in 2010 – 2014**

*The article discusses the theoretical and methodological basics of evaluation and analysis of the quality of life of the population in the Russian Federation entity. Brief theoretical bases of the analysis of the quality of life of population of the Russian Federation entity, brief methodical bases of quantitative evaluation of the indicators of the quality of life of the population of the Russian Federation entity, integrated in a composite index, have been laid out. The objective private indicators calculations are given and on their basis an integral indicator of the quality of life of the population for the Khabarovsk territory, the Amur region and Russia as a whole in 2014 compared to 2010 is provided. A comparative analysis of the quality of life of the Amur region population for the same indicators of the quality of life in the Khabarovsk territory and the average Russian indicators is presented.*

**Объективная оценка качества жизни населения региона**

**за период 2010 – 2014 гг.**

*В статье рассматриваются теоретические и методические основы оценки и анализа качества жизни населения территории субъекта РФ. Изложены краткие теоретические основы анализа качества жизни населения субъекта РФ, краткие методические основы количественной оценки показателей качества жизни населения субъекта РФ, интегрированные в обобщенный показатель. Приводятся расчеты объективных частных показателей, и на их основе – интегрального показателя качества жизни населения за 2014 г. в сравнении с 2010 г. для Хабаровского края, Амурской области и России в целом. Представлен сопоставительный анализ качества жизни населения Амурской области по одноименным показателям качества жизни Хабаровского края и среднероссийским показателям.*

***Keywords****: the RF entity, population, quality of life, indicators, indexes, integral index of the population quality of life.*

***Ключевые слова:*** *субъект РФ, качество жизни населения, индикаторы, показатели, интегральный показатель качества жизни населения.*

Four rough indexes of quality of life, each based on five particular indexes, were worked out on the basis of selected main groups of human needs after A. Maslow, considering the principles of construction of integral index of the population quality of life, with a system of indexes assessing  the quality of life  of the Russian Federation population integrated in it (Figure 1) [1].

In this work, based on the “Rosstat”  statistical data and on the tested  integrated system of the  population quality of life evaluation [3],  calculation of the objective indexes of assessing quality of life in the Amur region in 2010 - 2014 was made. Also the comparison with the average Russian indexes of  the population quality of life and those for the Khabarovsk territory was made for the same period. It should be noted that the work did not take into account the subjective indexes of the population quality of life, which in turn can enter minor adjustments for exact estimation of the multifaceted index of the population quality of life.

A procedure of an analytical assessment of intertemporal changes of an integral index “quality of life of population” in Amur region was made on the basis of objective indicators dynamics in 2010-2014, it was also compared to reference values, average Russian values of objective indicators of “population quality of life” being used for them. To some extent, this research can serve for the diagnostics of correctness of the socio-economic policy in the  Russian Federation entity, and it can be a methodological basis for laying out the programs of perspective development of a specific territory, the Amur region in particular.



*Fig. 1. The system of interacting indexes of the life quality rating[[1]](#footnote-2)*

In accordance with the developed assessment procedure of the quality of life of the population the required indicators for the Amur region in 2010 – 2014 period have been calculated, and the indicators of quality of life for the Russian Federation and the Khabarovsk territory have been also calculated for further assessment, comparison and benchmarking study.

The calculation results of twenty major indicators of the quality of life of the population in the Khabarovsk territory and the Amur region in the period of 2010 – 2014 are listed in the table 1. The data in the table 1 demonstrate a deep correlation of the most objective indicators of the quality of life in the Amur region with the nationwide average, and with the values for the Khabarovsk territory in 2010 – 2014.

The dynamics in general corresponds to the Russian average, although there are indicators that demonstrate a significant decrease in Amur region, they are transport services – the Russian Federation – (70%), the Amu region – (79%). Both indicators have decreased, particularly for bus transport, and this is probably due to the population transfer from public transport to personal motor vehicles, that was not included in the initial indicators system. Considering the above, the increase of private cars buying by households was since 2011, in 2014, the Far-Eastern Federal District ranks second in the number of private cars per 1000 persons of population according to the «Rosstat» data [4].

Using the data in the table 1, and weighing coefficients, based on expert estimates, the particular indexes of the quality of life of the Amur region population in 2010 and2014 were calculated. They were comparatively estimated with the relevant Russian nationwide values. Particular indexes and their growth rate are shown in the table 2.

The analysis of data in table 2 shows that most particular indexes of the quality of life of the population of the Amur region in 2014 remained at a level below the average Russian level (less than 1). The lowest values are the following particular indexes: communication facilities – (0.154), transport services (0.185), earnings of population, (0.072), quality of housing services (0.153). For the Amur region itself the increase of mortality can be considered as somewhat disturbing according to the growth rate: in 2014 the value is 1% higher in comparison to 2010.

***Table 1***

**Objective indicators of population quality of life in the Khabarovsk territory and the Amur region in 2010 – 2014[[2]](#footnote-3)**

|  |  |  |
| --- | --- | --- |
| **№** **п/п** | **Indicators\ Years** | **Objective indicators values** |
| 2010 | 2011 | 2012 | 2013 | 2014 |
| **Khab.****territory** | **Amur** **region** | **Khab.****territory** | **Amur** **region** | **Khab.****territory** | **Amur** **region** | **Khab.****territory** | **Amur** **region** | **Khab.****territory** | **Amur** **region** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| 1.1. | Infant mortality rate | 1.396 | 1.706 | 1.435 | 1.464 | 1.335 | 1.596 | 1.486 | 1.267 | 1.298 | 1.218 |
| 1.2. | Net migration rate | 1.695 | 3.840 | 0.616 | 3.276 | 0.192 | 2.552 | 1.074 | 3.422 | 1.005 | 0.829 |
| 1.3. | Birth rate  | 0.986 | 1.058 | 1.021 | 1.068 | 1.035 | 1.075 | 1.052 | 1.060 | 1.033 | 1.014 |
| 1.4. | Death rate | 0.980 | 1.036 | 1.077 | 1.085 | 1.024 | 1.103 | 1.020 | 1.061 | 1.000 | 1.041 |
| 1.5. | Social security rate | 1.246 | 1.160 | 1.215 | 1.288 | 1.228 | 1.354 | 1.378 | 1.345 | 1.447 | 1.393 |
| 2.1. | Welfare rate | 0.688 | 0.781 | 0.716 | 0.759 | 0.769 | 0.752 | 0.778 | 0.769 | 0.764 | 0.814 |
| 2.2. | Rate of comfortable housing providing to population | 0.991 | 0.791 | 1.029 | 0.787 | 1.054 | 0.820 | 1.054 | 0.839 | 1.075 | 0.861 |
| 2.3. | Employment rate | 0.981 | 1.004 | 0.997 | 1.005 | 0.990 | 1.002 | 0.998 | 0.994 | 0.993 | 0.996 |
| 2.4. | Rate of manufactured articles and catering ratio per capita in average monthly nominal wage | 0.816 | 0.402 | 0.785 | 0.436 | 0.743 | 0.482 | 0.781 | 0.484 | 0.810 | 0.503 |
| 2.5. | Rate of population proportion with earnings above poverty line | 0.961 | 0.872 | 0.964 | 0.912 | 0.960 | 0.941 | 0.981 | 0.952 | 0.977 | 0.968 |
| 3.1. | Ecological state rate | 1.707 | 1.557 | 1.393 | 1.513 | 1.375 | 1.489 | 1.459 | 1.605 | 1.587 | 1.733 |
| 3.2. | Rate of housing and utilities level services  | 1.005 | 1.003 | 1.005 | 1.004 | 1.004 | 1.004 | 1.001 | 1.002 | 0.995 | 1.005 |
| 3.3. | Rate of social infrastructure complex covering | 0.200 | 1.031 | 1.093 | 1.037 | 1.083 | 1.023 | 1.093 | 1.028 | 1.045 | 1.018 |
| 3.4. | Rate of new housing facilities proportion per capita | 0.450 | 0.468 | 0.686 | 0.663 | 0.558 | 0.840 | 0.493 | 0.906 | 0.564 | 0.723 |
| 3.5. | Transport support ability rate | 0.610 | 1.092 | 1.624 | 1.594 | 1.340 | 0.896 | 1.303 | 0.875 | 1.154 | 0.867 |
| 4.1. | Rate of education coverage | 0.170 | 1.043 | 1.093 | 1.508 | 1.085 | 1.707 | 1.104 | 1.782 | 1.081 | 1.692 |
| 4.2. | Rate of culture development | 0.820 | 1.687 | 0.900 | 1.904 | 0.864 | 1.696 | 0.835 | 1.919 | 0.769 | 2.767 |
| 4.3. | Rate of population complex coverage by information infrastructure and communication services | 0.680 | 0.935 | 1.008 | 0.949 | 1.016 | 0.931 | 0.996 | 0.918 | 0.981 | 0.909 |
| 4.4. | Rate of family relations stability | 3.300 | 1.000 | 0.933 | 0.844 | 1.000 | 0.900 | 0.947 | 0.789 | 0.865 | 0.730 |
| 4.5. | Rate of social and cultural communication | 1.390 | 0.748 | 0.914 | 0.828 | 0.944 | 0.903 | 0.987 | 0.938 | 1.011 | 0.972 |

***Таблица 2***

**Dynamics of particular indexes of the population quality of life in the Amur region**

**in 2010 – 2014[[3]](#footnote-4)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Index** | **Particular indexes values** | **Growth rate, %** |
| **The Amur region** |
| **2010 г.** | **2014 г.** |
| **1** | **2** | **3** | **4** | **5** |
| 1 | 1.1. Health of population | 0.218 | 0.156 | 71 |
| 2 | 1.2.Migration | 1.067 | 0.230 | 22 |
| 3 | 1.3.Birthrate | 0.209 | 0.201 | 96 |
| 4 | 1.4. Mortality  | 0.270 | 0.272 | 101 |
| 5 | 1.5. Social security | 0.157 | 0.188 | 120 |
| 6 | 2.1. Earnings of population | 0.070 | 0.072 | 104 |
| 7 | 2.2.Housing conditions | 0.186 | 0.202 | 109 |
| 8 | 2.3.Employment level | 0.224 | 0.222 | 99 |
| 9 | 2.4. Consumer market | 0.099 | 0.124 | 125 |
| 10 | 2.5.Social protection of population | 0.181 | 0.200 | 111 |
| 11 | 3.1. Ecological state | 0.251 | 0.279 | 111 |
| 12 | 3.2. Quality of housing services  | 0.152 | 0.153 | 100 |
| 13 | 3.3.Social infrastructure | 0.183 | 0.180 | 99 |
| 14 | 3.4. New housing development | 0.139 | 0.214 | 154 |
| 15 | 3.5.Transport services | 0.234 | 0.185 | 79 |
| 16 | 4.1. Education of population  | 1.476 | 1.572 | 106 |
| 17 | 4.2. Culture | 1.598 | 1.856 | 116 |
| 18 | 4.3. Communication facilities | 0.159 | 0.154 | 97 |
| 19 | 4.4. Family relationship | 0.170 | 0.124 | 73 |
| 20 | 4.5. Social and cultural communication | 0.205 | 0.266 | 130 |

But there are the particular indexes from twenty, the values of which are higher than the Russian average: culture of population (1.856), education (1.572). Beside this, when studying the Amur region rate of growth in 2014 in comparison to 2010, it is evident that the following rates were improved: housing condition – 109%, social security – 120%, consumer market – 125%, social protection – 111%, ecological state – 111%, new housing development – 154% and social and cultural communication – 130%.

In table 3 the calculations of the values of final particular indexes of the quality of life in the Amur region in 2010, 2014 are given based on the values of particular indexes and weighing coefficients.

***Table 3***

**Final values of the particular indexes of the population quality of life in the Khabarovsk territory and the Amur region in 2010, 2014[[4]](#footnote-5)**

|  |  |  |
| --- | --- | --- |
| **Block** | **Index**  | **Values of final particular indexes**  |
| **Amur** **region, 2010** | **Amur** **region, 2014** | **Khabarovsk territory, 2010**  | **Khabarovsk territory , 2014**  |
| **1** | **2** | **3** | **4** | **5** | **6** |
| 1 | 1.1. Health of population1.2. Migration1.3. Birthrate1.4. Mortality1.5. Social security | 0.218 | 0.156 | 0.184 | 0.123 |
| 1.067 | 0.230 | 0.171 | 0.032 |
| 0.209 | 0.201 | 0.202 | 0.213 |
| 0.270 | 0.272 | 0.281 | 0.268 |
| 0.157 | 0.188 | 0.164 | 0.195 |
| **К1: Reproductivity and health of population** | **1.922** | **1.047** | **1.183** | **1.177** |
| 2 | 2.1. Earnings of population2.2. Housing conditions2.3. Employment level2.4. Consumer market2.5. Social protection of population | 0.070 | 0.072 | 0.064 | 0.066 |
| 0.019 | 0.020 | 0.242 | 0.253 |
| 0.224 | 0.222 | 0.222 | 0.224 |
| 0.099 | 0.124 | 0.193 | 0.219 |
| 0.181 | 0.200 | 0.200 | 0.207 |
| **К2: Human welfare, employment** | **0.759** | **0.821** | **0.912** | **0.943** |
| 3 | 3.1. Ecological state3.2. Quality of housing services3.3. Social infrastructure3.4. New housing development3.5. Transport services | 0.251 | 0.279 | 0.224 | 0.255 |
| 0.152 | 0.153 | 0.153 | 0.151 |
| 0.183 | 0.180 | 0.194 | 0.185 |
| 0.139 | 0.214 | 0.203 | 0.167 |
| 0.234 | 0.185 | 2.702 | 0.247 |
| **К3: Social infrastructure** | **0.958** | **1.011** | **1.687** | **1.006** |
| 4 | 4.1. Education4.2. Culture4.3. Communication facilities4.4. Family relations4.5. Social and cultural communication | 1.476 | 1.572 | 0.161 | 0.159 |
| 1.598 | 1.856 | 0.215 | 0.184 |
| 0.159 | 0.154 | 0.171 | 0.167 |
| 0.170 | 0.124 | 0.159 | 0.147 |
| 0.205 | 0.266 | 0.250 | 0.236 |
| **К4:Education, culture, spirituality** | **1.608** | **1.973** | **0.960** | **0.934** |
| ***Integral index of population quality of life*** | **1.319** | **1.265** | **1.238** | **1.011** |

The composite indexes of population quality of life are obtained by summation of particular indexes final values for each block (Table 3) and multiplying them by weighing coefficients (Table 4).

Table 4 shows: a half of composite indexes in 2014 was above the average Russian level. The index of “Reproduction and health of population” is above the average for Russia by 8 %, “Education, culture, spirituality” is almost doubled the Russian average. They reveal a favourable trend of growth of the population quality of life (with the exception of the second composite index for which

***Table 4***

**Composite indexes of population quality of life in the Amur region in 2010, 2014[[5]](#footnote-6).**

|  |  |  |  |
| --- | --- | --- | --- |
| **№ п/п** | **Composite index** | **Composite indexes****values** | **Weighing****coefficients** |
| **Full name** | **Abbreviation** | **Amur region** | **RF** |
| **2010** | **2014** | **2014** |
| **1** | **2** | **3** |  | **5** | **6** | **7** |
|  | Reproduction and health of population | KRP | 1.922 | 1.047 | 0.973 | 0.169 |
|  | Human welfare, employment | KWE | 0.759 | 0.821 | 1.001 | 0.328 |
|  | Social infrastructure | КSI | 0.958 | 1.011 | 1.051 | 0.214 |
|  | Education, culture, spirituality | КE | 1.608 | 1.973 | 1.007 | 0.289 |

a negative dynamics is observed). A leap of the index for the first block "Reproduction and health of population” is explained by:

1.The development of federal and regional programs in health care in recent years, the implementation of modern diagnostic and treatment technologies, construction and opening of new medical centers with the most modern medical equipment.

2. The advantage of the Amur region is its employable population, a share of which is greater than the average for Russia, and consequently, a higher proportion of the population of reproductive age.

Nevertheless, composite indexes for the second block are behind 18% and for the third block are behind 4% from those of the Russian average. This is due to the remoteness of the Amur region from the  central part of the Russian Federation,  population reduction in the Far-Eastern Federal District due to departure to the other Russian regions, underfunding  of the programs of the Far-Eastern development and, the Amur region in particular,  embezzlement of public funds, already allocated to the important government projects in the Amur region, etc.

Negative dynamics of the second composite  index "Welfare, employment of population”, caused by low development of the internal market of domestic goods ( the population of the Amur region  implements its  consumer preferences in bordering APR countries),  by bad  qualitative housing services  in villages and remote areas,  high tariffs for energy carriers and housing and communal services of the economic complex compared to the average Russian (in particular with the tariffs  in Moscow). All this negatively impacts on the development of the region.

 On the basis of composite indexes and respective weighting coefficients it is possible to calculate the integral indexes of the quality of life of the population of A the mur region (K) in 2010 and in 2014:

the Amur region, 2010:

К = 1.922∙0.214 + 0.759∙0.169 + 0.958∙0.328 + 1.608∙0.289 = 1.319;

Amur region, 2014:

K =  1.047∙0.214 + 0.821∙0.169 + 1.011∙0.328 + 1.973∙0.289 = 1.265.

Russian Federation, 2014:

K = 0,973∙0,214 + 1,001∙0,169 + 1,051∙0,328 + 1,007∙0,289 = 1,013.

Thus, in  2014 the integrated indicator of the quality of life of the population of Amur region by objective assessments was  1.265,  that is above the average Russian level values by 25%. This result is not incidental, as it is a consequence of the Russian key projects realization in the territory of the Amur region, for example, the “Vostochny” Cosmodrome construction. It provides employment of population, realization of its engineering and research potential and subsequently, improvement of the welfare and quality of life as a whole.

The rate of the integrated index of life quality decrease relative to 2010 and 2014 according to the results of objective evaluation is 4% (1.265/1.319 \* 100). Therefore, there was no absolute increase in the quality of life of the population in the Amur region according to objective assessment in 2014, compared to 2010 relative to the average Russian level, only its small deterioration occurred. This is explained not only by the internal problems in Russia, but also by geopolitical changes since 2013 up to the present (Western sanctions, ruble fall, inflation rising, lower incomes of population , etc.).

Studies of the quality of life of the population of the Amur region in  2010-2014  allow to define the priorities  of socio-economic development of the Russian Federation entity. First of all, they are: support of domestic producers and expanding of domestic consumption market, canvassing of foreign customers to the Russian market in the Amur region (there are such attractive niches in the Russian market as jewelry, dairy products, etc.). Attraction of foreign investments from the tourist flows from APR countries to  the Amur region and the Far East in general also will be positive for the well-being and employment in the Amur region. The development of the national education system and attraction of the foreign fee-paying students in educational institutions of the Amur region is another trend of development of the region. By analogy the development of medicine in the Amur region will attract foreign patients to the  local health care institutions, but in this field  China, Korea and Japan pose a serious competition. Construction of new comfortable inexpensive housing (economy class housing ), development of  rental housing  construction is not only improvement of the social infrastructure of the region, but also a vector of attracting and fixing  population in the Amur region.

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3. Data in the table 2 are calculated by the author [↑](#footnote-ref-4)
4. Data in the table 3 are calculated by the author [↑](#footnote-ref-5)
5. Data in the table 4 are calculated by the author [↑](#footnote-ref-6)