# Human Development Index as an Integral Indicator of the Level of Social Development of the Republic of Bashkortostan

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Abstract - One of the frequently used indicators of the national social development level is a human development index (HDI). Social development of the region involves improvement of living standards of the population which are characterized by the HDI components (incomes, life expectancy, education). The article describes the life quality in the Republic of Bashkortostan, presents the structure and dynamics of the HDI components for the period under study. The factors affecting the dynamics of indicators were identified. The comparative analysis of the national and reginal HDI was made. The analysis of the HDI dynamics showed a weakening position of Bashkortostan in the regional ranking. Negative changes are typical of all the HDI components. A low increase in the HDI is due to low salaries, loss of interest in the development of human capital and incentives to increase productivity, healthcare and education systems commercialization, and insufficient modernization rates. The article identifies key points of social development of the region.

Keywords – Republic of Bashkortostan; social development; living standards; human development index; education index; life expectancy index

#### I. INTRODUCTION

Living standards are the most important criteria of social development of any nation. In post-Soviet Russia, much has been done to improve living standards and increase the wellbeing of the population. Nevertheless, reduction of the level of social development, an increase in social inequality, impoverishment of the social majority for the sake of enriching the social minority are crucial social issues. According to the Russian Statistics, in 2017 with an income of 10,088 rubles per month, 19,3 million Russians lived below the poverty line: almost two times less than 18 years ago, but a third more than in 2012 [1]. At the same time, the degree of social inequality increases. According to researchers of Paris School of Economics, 1% of Russian rich citizens receive 20% of the national income [2]. This situation creates prerequisites for the growth of social contradictions. The problems of social development of the Russian regions reflect national problems.

Social development of the region is an increase in living standards of the population which are integral indicators taking into account various components that characterize the life quality. The living standards are considered as an economic category and social standards that characterize the degree of life satisfaction. The main indicators of living standards are average salaries; purchasing power; minimum consumer budget; subsistence minimum for the main social and demographic groups; numerb of people with a per capita income below the subsistence minimum; differentiation of income (a decile coefficient, a Gini index, etc.).

The life quality as a category is an ability of an individual to use monetary income, health, education, family and social relations, civil rights and other resources to manage his own life. According to the researchers, the life quality is an integral indicator of social programs, projects, a determinant of the life activity. Quite a few studies are devoted to regional comparisons and analysis of socio-economic factors affecting the life quality in Russian regions.

They indicate that each region of the Russian Federation (RF), due to its socio-economic potential, has its own characteristics of the level and quality of life. The Republic of Bashkortostan (RB), among the other ten regions of Russia, forms almost half of the national economy. However, the economy and social development of the region are influenced by a number of factors that are also characteristic of the Russian Federation: dependence on the oil production and refining sectors, insufficient investment, poor technological equipment, demographic challenges and restrictions (a decrease in the number of the employed, migration outflow).

Therefore, improvement of the quality and living standards in Russia and its regions is the most important strategic task of social development at the present stage. Countries and regions with high living standards are cost-effective and socially fair.

The article aims to analyze the current level and quality of life of the population of the Republic of Bashkortostan (RB), identify their dynamics and compare them with the average Russian indicators, identify key points for increasing the level of social development of the region.

#### II. RESULTS AND DISCUSSION

The main task of the national social policy is to create conditions for decent life and free development of a human, reduce social inequality, increase income of the population, ensure access of citizens to social benefits (health, education, culture, etc.), i.e. to solve a strategic problem - to improve the level and quality of life of the population.

To implement an effective and adequate social policy, it is necessary to have information about the economic and social situation. Indicators for assessing the living standards are of great research and applied importance [3-6]. The most important indicator of the life quality level used in world practice for international comparisons is a human development index (HDI). The calculation of this indicator is based on the assessment of three indicators:

- a life expectancy index: health and longevity measured by the average life expectancy at birth. Life quality is assessed as the level of healthcare development, the state of the environment, food quality, availability of medicines, etc.;

- an education index measured as an average number of years spent on training. It evaluates availability of basic educational services which will affect the quality of labor resources. The education index includes a literacy rate of the adult population (two-thirds of the value) and a combined indicator of the total student share (one third of the value). The literacy rate helps identify the percent of the population who mastered reading and writing, while the cumulative share of students indicates the percentage of people attending kindergarten, studying at schools, universities, post-graduate schools.

- a gross national income index: a decent living standard measured by the value of the gross national income (GNI) per capita in US dollars based on the purchasing power parity (PPP). The GNI is the total domestic and foreign output claimed by residents of a country, consisting of gross domestic product, plus factor incomes earned by foreign residents, minus income earned in the domestic economy by nonresidents.

According to the 2016 ranking presented in the annual UN reports on the development of human potential, the Russian Federation ranked 49th with HDI of 0.815. With indicators of life expectancy index (71.87 years), average duration of education (15 years), per capita GNI (\$23,286 per year by PPP expressed in US dollars in 2011 prices), the Russian Federation approached the group of countries with a high HDI (more than 0.8). According to the data of 2017, the Russian HDI was 0.816. The dynamics of this indicator (in 2000, it ranked 55th; in 2012 – 52nd, in 2017 – 49th) suggests that national health, education, and social policy programs were efficient [7].

The HDI is calculated for the Russian regions. The Republic of Bashkortostan is one of the largest and most developed regions of Russia. It has an advantageous geographical location, developed transport infrastructure, rich and diverse natural resources, developed industry, recreational resources, institutional resources, business reputation, scientific, educational and innovative potential. [8-10]. In 2001, the republic ranked 6th among the Russian regions with a HDI of 0.772, which exceeded the national average (0.761). However, since 2007, the situation has changed and its ranking begins to fall (in 2010 - 18th (0.832), in 2014 - 32nd

(0.855)). According to the 2018 report on human development in the Russian Federation, the Republic of Bashkortostan ranked 43rd with an HDI of 0.854 [11]. The factors that worsen the HDI dynamics are as follows: a decline in the birth rate, an increase in mortality, health deterioration, a migration decline, a literacy lag from the population of the Russian Federation, a per capita GRP lag (83.8% of the average per capita GRP in the Russian Federation) [12].

Let us consider the current situation of the HDI components and compare them with the Russian ones. In 2017, the indicators of the Russian economy were contradictory. The GDP increased by 1,5%. The inflation rate fell to 2,5%. The growth of real salaries became steady, but did not restore a more important indicator – real incomes. The average per capita income of Russians increased by 2% and amounted to 31477,4 rubles. At the same time, the nominal average monthly salary increased by 7.2% to 39,085 rubles. Real salaries increased by 3.4% over the year. In December, the salary amounted to 50,500 rubles (+ 7.2% by December 2016) [13]. This dynamics is typical of indicators of the monetary income of the population of the Republic of Bashkorstan. For example, in 2017, the nominal average salary increased by 2040.8 rubles (7.25%) [12].

There is only one conclusion: the inflation rate did not give any particular cause for concern, because it was limited by low consumer demand due to decreasing real incomes. People chose a savings model of behavior. In 2017, after-tax incomes adjusted for inflation decreased by 1.7% (Table 1).

TABLE I. DYNAMICS OF THE MAIN SOCIAL AND ECONOMIC INDICATORS OF THE LIVING STANDARDS IN THE  $\rm RF$  and the  $\rm RF$ 

Indicators	Years					
	2005	2010	2015	2016	2017	
Real income of the population of the RB (per month), rub.	6886	17498	27730	28140	28402	
Real income of the population of the RB, in% to the previous year	118.6	101.1	94.1	96.4	98.0	
Real income of the population of the RF (per month), rub.	8112	18958	30467	30744	30942	
Real income of the population of the RF, in% to the previous year	111.1	105.9	96.8	94.2	98.3	

As can be seen from Table 1, since 2015 in the republic, as well as in Russia, there is a decrease in real incomes of the population. But the republican inflation rate was lower than the national one by 1.6% [12]. With rising salaries, real incomes were declining, although the decline rate decreased.

Another component of the HDI is life expectancy. This indicator characterizes the level of healthcare development and integrates the influence of many social economic factors influencing the life quality and human health. In 2000, by life expectancy the RB ranked 16th in Russia (66,70 years against the average Russian level of 65,34 years). But since 2010, this



indicator declined. In 2016, the RB ranked 40th (Figure 1) [14].



Fig. 1. Expected life expectancy in the Republic of Bashkortostan for  $2010-2016\,$ 

Over the past few years, the average life expectancy in Russia and its regions is growing. According to the data of 2017, life expectancy in Bashkortostan is 71,73 years (66,24 years for men, and 77,21 years for women). This indicator is 0,97 years lower than the national one, and 0,53 years lower than the average PFD. Bashkortostan is 2,47 years behind the highest value recorded in the Volga Federal District in 2017 (Tatarstan – 74,2 years in 2017) [14].

Mortality rates in Bashkortostan indicate a high mortality rate among people of working age. There is an indicator of life expectancy at working age (16-60 years). In 2016, in Bashkortostan it was 39,39 years (for men) and 42,34 years (for women). In this age range, men lose 4,5 years due to mortality, and women lose 1,6 years.

The current situation reflects the impact of inefficient personnel policy (according to the Ministry of Health of the RB, in 2017, 1,770 specialists were employed, 1,443 quitted the job; the RB lacks more than 1,500 doctors); the increase in queues in healthcare facilities and low quality of medical services; highly qualified doctors prefer working in the fee-for-service healthcare sector. Other affecting factors are as follows: unemployment (5,6% in 2017), a decline in real incomes (98,0% compared to 2016), an increase in the level of poverty (a quarter of the population have an average per capita income below 15,000 thousand rubles per month, about 0,5 million people approached the poverty line [12]).

However, there is a positive trend. It is the demographic situation. From 2010 to 2016, the indicator was growing. However, in 2017, the indicator changed its dynamics - the number of deaths exceeded the number of births (Figure 2). If in 2016 the natural population growth was + 0,8 per 1000 people, in 2017 the decrease was 0,3 per 1000 people. [12].



Fig. 2. Dynamics of indicators of deaths and births in the Republic of Bashkortostan

As for the education index, in Bashkortostan, it has a negative dynamics (Figure 3) due to unfavorable trends in higher education: a quarter of school graduates leave for universities in Moscow and St. Petersburg because of the lack of demanded training programs, modern infrastructure in local universities [15, 16]. University graduates try to find jobs in other regions due to low salaries in the RB. In January-September 2018, a migration decline was 4889 people. The school system is also experiencing problems. The average salary of teachers is 3 times lower than the salary in Moscow. In 2017, the average salary of a teacher in Moscow was 72 thousand rubles, in Bashkortostan – 27 thousand rubles. [17].



Fig. 3. The share of employed people with higher professional education in the total number of employed people in the economy of the Republic of Bashkortostan and the Russian Federation,%.

It is quite obvious that the ultimate goal of economic transformations and reforms carried out in the country is not the GDP growth per se. This is only a material basis for improving the welfare of the population. However, the problem of social inequality in Russian society has become crucial. According to the researchers of Paris School of Economics, 10% of the richest segments of the population in Russia receive 45% of the national income [2]. The most informative indicator of social inequality is the Gini index, or the coefficient of income concentration. The Lorenz curve provides a visual representation of actual distribution of incomes per each population group.

To build the Lorenz curve, a percentage scale (from 0 to 100%) is plotted along the axes of coordinates. The abscissa shows the percentage of the population divided into 5 groups, the y-axis shows the same percentage of the income groups. The uniform distribution of incomes will be represented by the bisector, and the uneven distribution will be represented by the "Lorenz curve." The deviation of the curve from the bisector also characterizes the degree of unevenness (Table 2, Figure 4).

TABLE II.	DISTRIBUTION OF INCOME IN THE RB AND RUSSIA IN 2016 BY
	20% GROUPS OF THE POPULATION

Groups by 20% groups of the population	Share of income in the group, % (RF)	Share of income in the group, % (RB)	Amount of accumulat ed income,% (RB)
First group (with the lowest income)	5.3	5.3	5.3
Second group	10.1	9.9	15.2
Third group	15.0	14.9	30.1
Fourth group	22.6	22.6	52.7
Fifth group (with the highest income)	47.0	47.3	100.0



Fig. 4. Lorenz curve for the Republic of Bashkortostan, 2016.

As can be seen from Table 2, the discrepancies are not significant, so the Lorentz curves for the RB and the RF coincide.

The Gini index characterizes the distribution of total incomes of population groups (the population income concentration index). The greater this coefficient, the higher the income polarization of society. The data on the RF and the RB are presented in Table 3 [13, 18].

TABLE III. GINI INDEX (INCOME CONCENTRATION COEFFICIENT)

	2010	2014	2015	2016	2017
Gini index, Russia	0.421	0.416	0.413	0.412	0.410
Gini index, RB	0.429	0.425	0.414	0.416	0.416

The Gini index ranges from 0 to 1. The World Bank considers that inequality is high if the index value exceeds 0,4. As can be seen from Table 3, for Russia, this index has recently decreased, but remains quite high. For Bashkortostan, the trend is the same.

To become a comfortable region for living, Bashkorstan has to become attractive for investors; create favorable conditions for development of small and medium businesses in order to create additional jobs; implement projects aimed at improving the demographic situation, social support for lowincome groups of the population. Thus, by solving social, economic and education problems, the region can overcome a social development gap and become competitive.

### III. CONCLUSION

The analysis of the regional HDI dynamics identified a weakening position of the Republic of Bashkortostan. Negative changes are observed in all HDI components. The slowdown in the HDI growth is due to the current situation in Russia (falling GDP growth rates, reduction of real incomes, growing number of people living below the poverty line) and a number of problems in the republic causing a decrease in living standards. In 2017, the decline in real incomes of the population amounted to 2% against1,7% in Russia. The negative dynamics is typical of the education index. The share of the population having higher professional education in the total number of people employed in the RB economy is lower by 7-8% in comparison with that in the Russian economy. Consequently, the key areas of social and economic policy which can improve the regional HDI are as follows:

- income: formation of a favorable investment climate in the region, creation of new jobs by implementing investment projects, encouragement of innovative and entrepreneurial activities of young people, development of housing construction programs;
- life expectancy: improvement of the quality and availability of primary health care, staffing of the the healthcare system with highly qualified and motivated personnel; improvement of the material and technical base of healthcare facilities; rreduction of the mortality rate in people of working age;
- education: reduction of territorial disproportion by the level of salaries of teachers; improvement of the quality and availability of higher, secondary vocational education, development of new educational programs.

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