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HUMAN RESOURCES REPRODUCTION MANAGEMENT – FACTOR OF LIFE QUALITY IMPROVEMENT OF REGIONAL POPULATION

V. P. Smolkin (a)*, A. M. Izmaylov (b), I. A. Naugolnova (c)
*Corresponding author

(a) Ulyanovsk State University, 432017, Leo Tolstoy Street 42, Ulyanovsk, Russia, surap99@mail.ru
(b) Samara State Economic University, 443090, Soviet Army Str. 141, Samara, Russia, airick73@bk.ru
(c) Samara State Economic University, 443090, Soviet Army Str. 141, Samara, Russia, naugolnovaia@mail.ru

Abstract

There is no generally accepted definition of the quality of life in Russian practice, and individual research projects contain substitution of already known, similar concepts, such as living standards of the population, lifestyle, etc. The majority of components that make up the concept of quality of life are dynamic and depend on the changes in the economic situation. At the same time, these indicators have a direct impact on the economy itself. Such indicators, in most cases, include the income level of the population, utility costs, level of health, employment rate and many others. Different indexes can serve as indicators reflecting the situation, allowing not only to rank countries and regions by the level of human development and evaluate their dynamics, but also to characterize the situation in the reproduction of human resources by calculating demographic and socio-economic indicators. This allows to estimate the required amount of human resources for a region at a certain age in the future. A comparative analysis of reproduction of human resources among the regions of the Volga Federal District of Russia is carried out in the work. The quality of life of the population of the regions on the reproduction of human resources estimation is given, which can be taken into account when developing a strategy for improving the living standards of the regional population. In the course of the work were identified the main problems of regions and made the recommendations on the improvement of the quality of life of the population.

1. Introduction

The fundamental objective of public authorities of both a particular region and country as a whole is to improve the quality of life of the population. The universally accepted notion of the quality of life includes a structured set of indicators that affect the various spheres of life of either one person or the entire population. The analysis of these indicators should provide decision makers both at the regional level and in an individual organization with extensive information on social and economic problems in the region and ways of solution of these problems. It is accepted to understand the quality of life of the region's population as a degree of satisfaction of material, social and spiritual human needs. The quality of life of the population of a country or a region is determined by a combination of various components describing the development of the socio-economic sphere of life and fully reflecting the real living conditions of citizens. In a difficult situation for our country, it is very important to conduct multidimensional studies of changes in the elements of the quality of life and promptly bring the received information to decision-makers in these fields of activity.

Planning in any organization and, most importantly, the planning of labor indicators has radically changed in the conditions of the marketplace. People, as the most valuable asset, are the core of all companies. Human resources (hereinafter – HR) costs are becoming the basis for planning of production and social indicators of a company's efficiency. In organizations, the required levels of staff with necessary skills and knowledge, as well as their labour productivity levels are essential for production efficiency improvement. Managers of any organization always have to face the problem of how to make rational staff investments and maximize their effectiveness. Therefore, nowadays the interest of market participants in obtaining objective and accurate information not only about the state of human resources of an enterprise, region, country, but also about their assessment is significant. One of the methods of obtaining such information is the HR analysis at these levels in order to make optimal management decisions and improve the use of HR.

Analysis of the publications of Russian scientists on the effectiveness of various human resource management systems (hereinafter referred to as HRM) makes it possible to identify two key concepts (Braverman & Saulin, 1998). The first concept is based on economic psychology, which does not include personnel management in production efficiency. The second concept, on the contrary, recognizes the contribution of the personnel management system to production efficiency.

Some researchers analyze the term "effectiveness" in three aspects: efficiency through achieving organizational goals, aligning interests, agility, viability, and adaptation to the macro environment. According to Vilfredo Pareto, efficiency is the ultimate result in the form of the return of the production system, which includes no harming to anyone else. Pareto optimality implies such state of the economic system or such distribution of resources in which improvement of one parameter is impossible without deterioration in the other one (Shchegortsov, Taran, Osobenkov, & Shchegortsov, 2010).

2. Problem Statement

Based on the analysis of the core efficiency concepts, the HRM effectiveness should be assessed in two directions: as the process of managing human resources and the process of their exploitation. The

cost of human resources should include both production and social performance indicators (Boohene & Asuinura, 2011). At the regional level, the autorities should be aware of the indicators of HR reproduction in order to make decisions on the improvement of the quality of life of the region's population for the long term (Lengnick-Hall, Lengnick-Hall, Andrade, & Drake, 2009).

3. Research Questions

In academic literature on labor economics and HRM, it is argued that decisions affecting personnel should be focused not only on economic, but also on social goals. Therefore, when establishing the effectiveness of HRM, both economic and social efficiency are distinguished. Thus, control over both economic and social parameters should serve as the basis for decision-making in HRM.

Efficiency assessment of management decisions in the sphere of HRM has the following functions: assessment of predicted effectiveness; evaluation of intermediate results; assessment of the ratio of costs and results; improvement of all areas of personnel management in the company.

Moving on to the assessment of the effectiveness of HR exploitation at the regional level, it can be noted that with no doubt the main goal of all regional transformations is to create the conditions ensuring a decent life for the population, a high level and quality of its life (Vorobyev & Kotenkova, 2016).

The analysis of state regulation of strategic HRM showed that the highest level that should strategically affect the HRM system is the federal level. The managing entity in the HRM system is the federal government (Government of the Russian Federation and relevant bodies).

The study of structural levels of HRM carried out by the authors clearly shows that it is possible to influence the individual qualitative characteristics of HR only at the regional level. The HRM system at the regional level is a complex socio-economic system that differs from technical, organizational, and natural systems in a variety of interconnections, a high level of organization, and uncertainty. The main feature of the systematic approach is the hierarchy of knowledge in regard of a wider system and the study of the influence of the subject of study on lower levels (Kucherov, 2015). In this regard, according to the authors, the HRM system at the regional level can be defined as the integration of subsystems of people's activities connected both with the external environment and with each other.

Three major structural components influence the process of formation and development of HR of the region: 1. Demographic. 2. Socio-economic. 3. Natural resource. The functioning of each component and their interaction determines the HRM system of the region.

4. Purpose of the Study

In the study, the subject of HRM at the regional level in the Volga Federal District (hereinafter - VFD) is the regional authorities and top-management of organizations. The Volga Federal District includes 6 republics: Bashkortostan, Mari El, Mordovia, Tatarstan, Udmurt Republic and Chuvash Republic, 7 regions: Nizhny Novgorod, Kirov, Orenburg, Penza, Samara, Saratov, Ulyanovsk, 1 Territory - Perm, as well as the former Komi-Permyak Autonomous Area. In the Volga Federal District, three groups of regions can be distinguished: Volga-Vyatka, Middle Volga and Western Urals. The structure of the Middle Volga includes he southern part of the VFD - Tatarstan, Saratov, Samara, Penza and

Ulyanovsk Regions. In our research we also include to the list the nearby republics - Mordovia and Chuvashia.

The object of management system is the human resources of the Volga Federal District. The main goal of HRM is the establishment and development of HR of the region. The stated goal may be achieved by fulfilling the following objectives:

1. The elimination of incoherence in management between the object and the subject.

2. Disclosure of the features of HRM.

3. Creating a HRM mechanism of the region.

4. Defining the most appropriate HRM methods that meet the stated goals.

5. Research Methods

There are various approaches to assessing the existing problems in the field of human resources management of the region. The first approach allows characterizing the situation in terms of HR reproduction in order to estimate the required amount of human resources of a certain age for the region in the future. This approach is based on the calculation of demographic and socio-economic indicators. The second approach uses the calculation of the quality of life index (based on the calculation of particular indicators).

To assess the HR reproduction in the regions of the Volga Federal District, the following indicators are used (Horvath & Partners, 2005):

1. Vitality index;

2. Population health index;

3. The ratio of marriages and divorces in the number of divorces per 1000 marriages;

4. The migration rate of the population;

5. Shares of the population with higher, secondary, initial vocational education and no vocational education in the total number of employed people;

6. The level of female economic activity;

7. Changes in the level of income of the population.

6. Findings

In order to identify the critical issues of the region, it is necessary to rank them, i.e. to reveal the structure of problems and range them according to their importance based on certain criteria. There are various approaches to assessing identified HR problems. Among them, we consider two optimal ones. According to the first approach, it is possible to characterize the reproduction of human resources with the calculation of demographic and socio-economic indicators. It allows to estimate the required amount of human resources of a certain age for the region in the future. The second approach includes the calculation of particular indicators - the quality of life index (Smolkin & Svetunkov, 2018; Smolkin & Udalov, 2019). Within the framework of the study, the authors have made the calculations and analyzed the dynamics of these indicators among regions of the Volga Federal District over a ten-year period from 2005 to 2017 (Rosstat, 2018). The results of the calculations are presented in the tables (Tables 01, 02, 03, 04, 05, 06, 07, 08).

Analysis of the vitality index showed that in four regions the number of deaths is higher than the number of births, which is due to the natural population decline. The exceptions are the Republic of Chuvashia and Tatarstan. In Chuvashia, there is an increase in population from 2012 to 2016, and in Tatarstan, the growth continues from 2012 until 2017. It is also worth mentioning, that in all these regions, there has been a noticeable decrease in the number of births, since 2015, that comes against the background of decreasing mortality, which is also the general trend for Russia in 2017. Demographers attribute this to reduction in the number of women of childbearing age. This issue continues to be a state problem.

The Population health index fluctuates from negative values, for example, in the Samara region and the Republic of Chuvashia, to relatively large positive values in the Penza region and the Republic of Mordovia. But in all cases the index value remains significantly less than one. This could mean that the number of sick people is quite large, and therefore, there are some doubts about the quality of healthcare and environment. As a result, the birth rate is low, as well as life expectancy.

In considering the same decade, it was found that between 2005 and 2013 the number of divorces per 1000 marriages remains relatively stable, and in 2014 and 2015 in all regions except Tatarstan there is a sharp increase of the rate. It means that regions have some serious issues the analysis of which requires additional research. This may also explain a low birth rate. The migration rate shows a decrease in the number of migrants in the Ulyanovsk Region, Penza Region and the Republic of Chuvashia. These regions do not attract migrants. But there is also a positive side to that: the absence of conflicts between local population and migrants, ethnic crime reduction, etc. A steady increase in migrants was noted in the Saratov region and Tatarstan, and in the past few years in the Republic of Mordovia.

Table 01. Vitality Index by Regions

Year	Number of Births per 1000 of the Population						Number of Deaths per 1000 of the Population					
	UR	SR	PR	Chuv	Tat	Mor	UR	SR	PR	Chuv	Tat	Mor
2005	8,6	9,7	8,3	10,2	9,8	8,5	16,9	16,1	18,1	15,3	13,8	17,1
2010-2015	Growth						Decline					
	10,6	11,6	10,2	12,9	12,9	9,5	15,7	15,2	15,9	14,5	13,1	15,7
	-11,9	-12,8	-10,7	-13,8	-14,77	-9,7	-14,9	-14,2	-14,8	-13,1	-12,0	-14,1
2016	11,6	12,5	10,2	13,2	14,3	9,8	14,8	13,9	14,5	13,2	11,6	14,1
2017	10,1	10,8	8,9	11,3	12,4	8,5	14,0	13,7	14,1	12,6	11,3	13,5

Note: UR – Ulyanovsk Region, SR – Samara Region, PR – Penza Region, Chuv – Republic of Chuvashia, Tat – Republic of Tatarstan, Mor – Republic of Mordovia. Source: authors.

Table 02. Vitality Index by Regions

Year	Vitality Index						
	UR	SR	PR	Chuv	Tat	Mor	
2005	0,51	0,6	0,46	0,67	0,71	0,5	
2010-2015	Growth						
	0,67	0,76	0,64	0,89	0,98	0,6	
	-0,8	-0,9	-0,72	-1,05	-1,22	-0,69	
2016	0,78	0,9	0,7	1,0	1,23	0,69	
2017	0,72	0,8	0,63	0,89	1,09	0,63	

Table 03. Population Health Index by Regions

Year	Morbidity per 1000 of the Population						Population Health Index					
	UR	SR	PR	Chuv	Tat	Mor	UR	SR	PR	Chuv	Tat	Mor
2005	858,5	855,3	848,8	858,6	804,5	681,8	0,14	0,14	0,15	0,14	0,19	0,32
2010 -2013	Growth		Decline	Growth		Decline	Decline		Growth			
	895,0	944,5	760,5	936,9	846,2	725,7	0,1	0,06	0,24	0,06	0,15	0,27
		-1043,6		-1039,2		-713,5		-0,04		-0,04		0,29
	-914,8		-736,1		-831,6		0,08		0,26		0,17	
2014	853,0	1016,0	717,3	1019,0	841,1	684,5	0,15	-0,02	0,28	-0,02	0,16	0,31
2015	891,7	1033,7	747,0	983,4	804,2	683,7	0,11	-0,03	0,25	0,02	0,2	0,32
2016	872,4	975,7	732,8	934,2	792,3	658,9	0,13	0,02	0,27	0,07	0,21	0,34
2017	876,4	912,1	733,0	917,1	794,0	682,6	0,12	0,09	0,27	0,09	0,21	0,32

Table 04. Income Level of the Population by Regions

Year	Index of Real Income of the Population						Consumer Prices Index					
	UR	SR	PR	Chuv	Tat	Mor	UR	SR	PR	Chuv	Tat	Mor
2010 - 2013	Decline						Decline					
	112,8	105,8	105,1	107,5	109,0	110,0	110,6	107,8	109,8	109,8	108,2	109,5
	-105,7	-102,4	-104,6	-103,5	-102,5	-103,0	-106,4	-105,8	-106,2	-106,3	-106,3	-106,3
2014	106,7	90,0	101,8	101,3	106,7	103,0	111,4	111,8	110,9	110,9	109,7	111,6
2015	90,0	92,1	97,0	95,8	95,9	96,6	113,8	112,7	111,3	111,5	110,7	111,1
2016	92,7	90,5	90,8	92,5	96,5	94,1	105,5	105,2	104,2	104,1	103,6	103,8
2017	98,6	97,5	99,6	97,5	94,9	99,6	102,5	101,2	101,6	101,4	102,2	101,1

Table 05. Income Level of the Population by Regions

Year	Income Level of the Population					
	UR	SR	PR	Chuv	Tat	Mor
2010 - 2013	Decline		Growth		Decline	
	1,02	0,98	0,96	0,98	1,0	1,0
	-0,99	-0,97	-0,98	-0,97	-0,96	-0,97
2014	0,96	0,8	0,92	0,91	0,97	0,92
2015	0,79	0,82	0,87	0,86	0,86	0,87
2016	0,88	0,86	0,87	0,89	0,93	0,9
2017	0,96	0,96	0,98	0,96	0,93	0,98

Table 06. Reproduction Rates by Regions

Year	Ratio of Marriages and Divorces (per 1000 Marriages)						Migration Rate (per 10000 of the Population)						Level of Female Economic Activity,%					
	UR	SR	PR	Chuv	Tat	Mor	UR	SR	PR	Chuv	Tat	Mor	UR	SR	PR	Chuv	Tat	Mor
2005	591	571	533	519	529	537	-2	65	21	-44	22	3	-	-	-	-	-	-
2010	549	563	574	463	444	507	-35	19	-3	-27	10	-9	59,0	64,5	56,8	64,3	64,2	65,2
2011	533	522	579	416	409	475	-25	26	-3	-22	32	-41	62,4	64,4	58,0	64,3	64,6	65,9

2012	532	544	581	479	385	523	-33	16	-16	-36	26	-38	62,0	65,2	60,0	63,4	65,4	66,0
2013	593	509	630	502	405	595	-27	13	-19	-36	15	-32	62,1	65,0	59,2	66,6	64,2	66,6
2014	588	589	654	522	464	574	-12	22	3	-21	19	3	57,1	63,5	59,0	63,7	62,6	64,2
2015	516	551	571	457	440	501	-9	-6	-10	-19	9	26	60,8	66,1	60,7	67,3	65,4	66,2
2016	590	653	677	614	522	623	-6	6	-10	-7	15	56	58,9	64,0	59,7	61,5	63,3	63,0
2017	586	611	648	542	504	570	-10	-3	-22	-25	12	6	61,0	64,6	58,5	62,8	64,4	63,5

The next indicator is the share of people with different levels of professional education in the total number of employed people. The share of people with higher education is growing. However, the percentage of people with initial and secondary vocational education is declining in all regions between 2005 and 2017. Firstly, this indicates an improvement in the level of HR education, and secondly, it shows the problems in regional education system, connected with inaccessibility or lack of educational institutions.

The level of female economic activity is stable in all regions with minor deviations. It is impossible to give that a clear explanation, as it requires the additional research. Income level of regional population varies from a minimum of 0.8 to a maximum of 1.07 in 2012. It indicates a significant change in the income level compared to price changes. After 2014 there is a sharp decline in income level of the population in all regions with a slight increase in 2017. The possible negative consequences that affect the HR reproduction in the regions, also affect the decline in the quality of life of regional population.

Table 07. Shares of Educated Population in the Total. Number of Employed People by Regions

Year	Share of the Population in the Total Number of Employed,%	
	Higher Vocational Education	**Secondary Vocational Education**
	UR SR PR Chuv Tat Mor	UR SR PR Chuv Tat Mor
2010	25,8 33,5 24,4 27,0 25,4 28,2	29,1 28,7 28,4 21,4 21,5 22,0
2011	24,9 34,8 25,8 26,8 29,7 27,4	28,8 32,4 26,8 21,8 19,2 23,5
2012	27,2 35,6 28,2 27,4 30,8 27,9	28,2 28,7 27,6 21,8 19,8 23,6
2013	25,3 37,4 27,4 27,6 32,9 31,1	25,8 28,4 27,2 22,2 19,2 23,3
2014	27,9 35,8 28,3 28,4 32,4 34,2	44,9 48,1 49,5 47,9 40,0 41,1
2015	26,7 36,9 30,0 29,6 33,7 33,6	44,3 45,9 47,4 45,8 39,9 44,7
2016	28,8 36,8 29,4 29,3 34,0 35,8	44,5 47,3 48,6 46,2 41,3 43,4
2017	28,7 38,4 30,9 31,9 35,1 35,4	44,3 46,1 49,9 44,6 41,4 43,9

Table 08. Shares of Educated Population in the Total Number of Employed People by Regions

Year	Share of the Population in the Total Number of Employed,%	
	Initial Vocational Education	**Secondary General Education**
	UR SR PR Chuv Tat Mor	UR SR PR Chuv Tat Mor
2010	17,6 16,3 19,2 21,9 23,4 19,9	27,2 21,1 27,2 29,4 29,6 29,3
2011	18,1 14,4 16,2 24,5 22,0 19,5	27,9 18,2 30,5 26,5 28,8 29,3
2012	17,9 15,6 16,2 24,5 21,3 20,2	26,8 19,8 27,6 26,2 27,9 28,0
2013	17,6 16,1 16,9 25,1 20,7 18,4	31,2 18,0 28,1 24,9 27,9 26,8
2014	24,3 33,0 30,6 22,3 19,5 22,6	27,1 16,0 22,0 23,6 27,4 24,5
2015	18,9 16,6 16,9 25,2 20,5 22,2	28,8 17,1 22,4 24,5 26,4 21,4
2016	20,2 17,9 18,0 25,4 21,2 20,0	26,6 15,8 21,9 24,5 24,6 20,4
2017	19,9 18,7 17,8 24,1 21,1 18,7	26,9 15,2 19,0 23,4 23,5 20,0

7. Conclusion

Overall, the calculation of considered indicators allows achieving the following objectives:

1. To estimate the effectiveness of the social policy of the region on the reproduction and use of HR.

2. To highlight the problems connected with healthcare, access to vocational education, and real incomes of the population.

3. To plan long-term social policy priorities.

4. To set the ways of improvement of the quality of life of regional population.

The obtained indicators show that in terms of reproduction and use of HR the Ulyanovsk, Samara, Penza regions and the republics of Chuvashia, Tatarstan, Mordovia have a number of issues, first and foremost, connected with health, access to professional education, and real income stagnation of the population. One of the consequences of these problems is a natural population decline in the regions. It can lead to a shortage of human resources, a reduction of gross regional product and a decrease in the welfare of HR of the region. Therefore, it is obvious that the elimination of those problems in health care and education and raising the standard of living of HR should become a priority.

It is also necessary to carry out certain structural transformations in strategic HRM of the regions.

References

Boohene, R., & Asuinura, E. L. (2011). The effect of human resource management practices on corporate performance: A study of graphic communications. *International Business Research, 4*(1), 266-272. https://doi.org/10.5539/ibr.v4n1p266

Braverman, A., & Saulin, A. (1998). Integrated assessment of effectiveness of the enterprises. *Economy Questions, 6,* 108-121. [in Rus.].

Horvath & Partners (2005). *Balanced Scorecard umsetzen.* Stuttgart: Schaeffer-Poeschel Verlag.

Kucherov, D. G. (2015). Strategic human resource management: Development of the concept in the stage of maturity. *The Bulletin of the St. Petersburg University. Management series, 2*, 124-151.

Lengnick-Hall, M. L., Lengnick-Hall, C. A., Andrade, L. S., & Drake, B. (2009). Strategic human resource management: The evolution of the field. *Human Resource Management Review, 19*(2), 64-85. https://doi.org/ 10.1016/j.hrmr.2009.01.002

Rosstat (2018). *Regions of Russia. Socio-economic indexes: Statistical collection.* Moscow: Rosstat. Retrieved from: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_11 38623506156 Accessed 01.09.19 [in Rus.].

Shchegortsov, V., Taran, V., Osobenkov, O., & Shchegortsov, M. (2010). *Crisis Management by Human Resources.* Moscow: Novosti. [in Rus.].

Smolkin, V. P., & Svetunkov, M. G. (2018). Conditions and directions of increasing the efficiency of human resource management. In Ardashkin, I.B., Bunkovsky, V.I. & Martyushev, N.V. (Eds.), *Proceedings of RPTSS 2018 -International Conference on Research Paradigms Transformation in Social Sciences. European Proceedings of Social and Behavioural Sciences, L*, (pp. 1115-1123). London, UK: Future Academy. https://doi.org/10.15405/epsbs.2018.12.136

Smolkin, V. P., & Udalov, O. F. (2019). Approaches to assessment of efficiency of strategic management of human resources at the regional level (on materials of the Ulyanovsk region). *Regional Economy and Management: Electronic Scientific Journal, 3*(59), 5905. Retrieved from: https://eee-region.ru/article/5905/ Accessed: 01.09.19. [in Rus.].

Vorobyev, A. A., & Kotenkova, S. N. (2016). Analysis of the quality of life in the regions of the Volga Federal District of Russia and opportunities for its improvement. *Kazan Economic Bulletin, 4*(24), 14-22. [in Rus.].