

## **THE FORMATION OF THE COMPANY HUMAN POTENTIAL UNDER THE CONDITIONS OF MODERN ECONOMY INNOVATIVE DEVELOPMENT AT THE REGIONAL LEVEL**

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### **Abstract**

The development of the company human potential is a major part of production infrastructure. Its stable and effective functioning is an objective necessity to stabilize and improve the economy in the conditions of the crisis, decline of GDP and foreign sanctions. To meet the requirements of the country's and regions' innovative development it is necessary to find the mechanism helping to form the company human potential. The solution to this problem should be connected with different ways of its training and use under present conditions.

At present, despite a considerable number of research materials and papers connected with different aspects of human potential forming, the problem of the formation mechanism functioning and use of the company human potential at the regional level under the conditions of modern economy innovative development has been insufficiently researched yet.

The present article analyses the main approaches to determine the region's level of the innovative development and how it influences the human potential structure. We also suggest some measures to enforce innovations in socio-economic processes in Mari EI, to provide human potential for these processes and the methods to determine the state of human potential in the region. On its basis, the rating of Privolzhsky Federal okrug regions was performed and practical recommendations to increase human potential in Mari EI in comparison with other regions were given.

The research shows that the formation of the human potential under the conditions of innovative development involves effective and dynamic socio-economic development both of the region and the country.

Theoretical and practical importance of the research expands the knowledge of the methodological base for the formation of the region's human potential. The main results and recommendations the article contains may be used in the work of federal, regional and municipal authorities to develop complex regional programmes of socio-economic development, regional programmes to form and develop human potential, analyse and forecast regional socio-economic development and also to determine main trends of the region's innovative development.

**Keywords:** innovative development, innovative potential, modern economy, index of innovative development, regional level, rating, scientific and technical potential, socio-economic conditions events

## 1. INTRODUCTION

In economics, there are different methods of analysis of innovative development level of countries and their constituent regions. One of the most common approaches in favor index method, on the basis of which the ratings, allowing sufficient to objectively assess the countries and regions on the basis of a set of various figures, calculating the integral index of the innovative capacity of the economic system calculated on the basis of average values and standard deviations of indicators for each unit model, a comprehensive assessment of the innovation potential of the region, regional Volga Federal District -based rating using the "method of distance", a ranking of regions on "favorable" the basic conditions for the formation and development of innovative subsystems for selected indicators on the basis of the method of "the amount of places" (Rakitin, 2014)

In the EU, to assess the innovative development of the regions used a complex system of indicators which is based on Eurostat figures (Regional Innovation Scoreboard, RIS), such as research personnel, funding for research and development, patents, export and import of technology, the cost of innovation, etc. Then the calculated specific indices of innovative development. In the United States used PII (Portfolio innovation index), which is calculated 4 sections: 1) human capital (weighting - 30%), 2) economic performance (30%), productivity and employment (30%), welfare (10%) ... (Shchepina 2012)

Based on the analysis of the rating ranking results can determine the place occupied by the Republic of Mari El in the Volga Federal District, and in general in the Russian Federation in the sphere of innovation, the achievements and shortcomings, and to formulate and justify the main areas of improvement in the field of innovation in and, respectively, in the area of capacity building. (Bortnik, 2012)

## 2. OPINIONS AND DISCUSSION

Consider the "Rating of innovative development of the Russian Federation subjects", which is being developed at the Institute of Statistical Studies and Economics of Knowledge, National Research University "Higher School of Economics", together with the State Statistics Service. It uses the author's method of calculating the index of regional innovation development. This rating is based on the results of the ranking of the Russian Federation subjects in terms of the Russian regional innovation index. The latter, in turn, is calculated on the basis of these sub-indices as the socio-economic conditions, innovation, scientific and technological capabilities, innovation and quality of innovation policy. (Hochberg, 2015)

In accordance with Russian regional innovation index Mari El Republic was part of a group III School of Economics of the Russian Federation in 2013 - 0.3103 (57th place) ( Table 1). In Group III also included the Kirov region - 0.3485 (4<sup>th</sup> place), Saratov region - 0.3416 (46th place), Orenburg region - 0.3365 (47<sup>th</sup> place), Republic of Udmurtia - 0.2838 (67th place).

In group II of the Volga Federal District included subjects with high values of this indicator also includes the Republic of Chuvashia - 0.4707 (5th place), Nizhny Novgorod region - 0.4685 (7<sup>th</sup> place), Penza region - 0.4555 (10th place), Ulyanovsk region - 0.4506 (11th place), Perm - 0.4381 (13<sup>th</sup> place), Republic of Mordovia - 0.4257 (17<sup>th</sup> place), Republic of Bashkortostan - 0.4210 (20th place), Samara region - 0.4085 (25th place ).

Table 1  
Rating the value of the RF subjects for Russian regional innovation index

The regions of the Volga Federal District	The place occupied by the Russian region in the value of Russian regional innovation index				Rating the value of the RF subjects for Russian regional innovation index			
	2008	2010	2012	2013	2008	2010	2012	2013
The Republic of Bashkortostan	15	12	13	20	0,412	0,461	0,4446	0,4210
The Republic of Mari El	56	60	63	57	0,285	0,313	0,2968	0,3103
The Republic of Mordovia	70	26	18	17	0,224	0,397	0,4263	0,4257
The Republic of Tatarstan	10-11	10-11	2	2	0,422	0,462	0,5606	0,5492
The Republic of Udmurtia	53	59	67	67	0,292	0,314	0,2892	0,2838
The Republic of Chuvashia	8	5	6	5	0,435	0,483	0,4926	0,4707
Perm krai	4	4	11	13	0,468	0,49	0,4594	0,4381
Kirov region	62	58	57	41	0,258	0,315	0,3229	0,3485
Nizhny Novgorod region	5	3	4	7	0,454	0,515	0,5006	0,4685
Orenburg region	51	24	42	47	0,298	0,408	0,3493	0,3365
Penza region	50	39	15	10	0,299	0,36	0,4336	0,4555
Samara region	13	15	20	25	0,419	0,449	0,4134	0,4085
Saratov region	38	47	35	46	0,318	0,348	0,3687	0,3416
Ulyanovsk region	7	13	10	11	0,439	0,457	0,4661	0,4506

In the IV-th group of regions of the Volga Federal District representatives were absent.

In the I-st group of present Republic of Tatarstan - 0.5492 (2nd place).

In the temporal aspect may be noted that significantly improved its position in the ranking of the analyzed period 2008-2013. regions such as the Penza region (50th place – 200, 39th – 2010, 15th - 2012, 10th - 2013), Kirov region (62, 58, 57, 41 -, respectively), the Republic of Mordovia (70, 26, 18, 17). Relatively small improvement was noted in Chuvashia (8, 5, 6, 5). The Republic of Tatarstan (10-11, 10-11, 2, 2) retained its top position.

A relatively small deterioration occurred in the Republic of Bashkortostan (15, 12, 13, 20), the Republic of Mari El (56, 60, 63, 57), the Nizhny Novgorod region (5, 3, 4, 7), the Samara region (13, 15, 20 25), the Ulyanovsk region (7, 13, 10, 11).

The aggregate rating of innovative Russian regions includes 4 sub-index, which must be analyzed in order to identify the main factors that positively or negatively affect the overall rating of a particular region.

Rating of Russian regions in socio-economic conditions of innovative activity (Table 2) characterizes the level of the state and economic development, educational and information potential in the aspect of

implementation of the innovation. In its calculation uses regional macroeconomic indicators, indicators of human resources development and utilization, as well as the development of the use of information technologies at all levels of regional socio-economic systems. (Fairuzov 2016)

Table 2

Rating of RF subjects on the index value "Socio-economic conditions of innovative activity"

The regions of the Volga Federal District	Place occupied region in the Russian Federation on the index value "Socio-economic conditions of innovative activity"				Rating of RF subjects on the index value "Socio-economic conditions of innovative activity"			
	2008	2010	2012	2013	2008	2010	2012	2013
The Republic of Bashkortostan	17-20	16	26	13	0,357	0,385	0,4273	0,4546
The Republic of Mari El	54	46	60	40	0,273	0,323	0,3441	0,4008
The Republic of Mordovia	56	44	38	42	0,27	0,325	0,3896	0,3997
The Republic of Tatarstan	7	6	3	3	0,425	0,444	0,5588	0,5442
The Republic of Udmurtia	33	31-32	31	31	0,33	0,355	0,4032	0,4152
The Republic of Chuvashia	35-36	35	41	35	0,318	0,349	0,3848	0,4114
Perm krai	29	28	28	18	0,329	0,365	0,4235	0,4386
Kirov region	74	78	76	71	0,221	0,225	0,2924	0,3218
Nizhny Novgorod Region	11	15	18	15	0,373	0,389	0,4427	0,4462
Orenburg region	53	56	48	52	0,274	0,306	0,3677	0,3788
Penza region	41	65-66	51	50	0,305	0,284	0,3584	0,3882
Samara Region	4	4	5	5	0,482	0,482	0,5204	0,5132
Saratov region	34	40	44	43	0,32	0,331	0,3798	0,3980
Ulyanovsk region	28	23	25	20	0,34	0,377	0,4273	0,4359

According to the index of the Republic of Mari El was included in 2013 in the Group III of the Russian regions (0.4008 – 40th place), Group I regions on this indicator comprised only city Moscow (0.7753) and St. Petersburg (0, 7002). In the II group included such regions of the Volga Federal District as the Republic of Tatarstan (0.5442 - 3rd place), Samara region (0.5132 - 5th place). (Hochberg, 2016)

In Group III, together with the Mari El Republic includes the Republic of Bashkortostan (0.4546 - 13 place), Nizhny Novgorod region (0.4462 - 15 place), Perm (0.4386 - 18 place), Ulyanovsk region (0.4359 - 20 place), Udmurtia (0.4152 - 31 place), the Republic of Mordovia (0.3997 - 42 place), Saratov region (0.3980 - 43 place), Penza region (0.3882 - 50 place). And in Group IV was the Orenburg region (0.3788 - 52 place), Kirov region (0.3218 - 71 place).

Among the regions of the Volga Federal District for the analyzed period has significantly improved its position in the field of socio-economic conditions of innovation products in 2013 compared to 2012, the

Republic of Mari El (-20). Improve your ranking Bashkortostan Republic (-13), Perm (-10), the Chuvashia Republic (-6), Ulyanovsk region (-5), Kirov region (-5), Nizhny Novgorod region (3), Penza region (-1 ) Saratov region (1).

Rating is not changed in the Republic of Tatarstan (0) Udmurtia Republic (0) and the Samara Region (0). The deterioration occurred in the rating of the Republic of Mordovia (4) and the Orenburg region (4).

Rating of regions by the value of the index "Scientific and technical potential" (Table 3) is an aggregate assessment of the most important components of scientific and technical potential of the region: the level of funding and staffing of research and development, publication and patent activity, the number of advanced production technology, revenue on technology exports.

Table 3  
Rating of RF subjects on the index value "Scientific and technical potential"

The regions of the Volga Federal District	Place occupied region in the Russian Federation on the value of the index "Scientific and technical potential"				Rating of RF subjects on the index value "Scientific and technical potential"			
	2008	2010	2012	2013	2008	2010	2012	2013
The Republic of Bashkortostan	22	22-23	10	10	0,351	0,358	0,4327	0,4435
The Republic of Mari El	65	68-69	55	39	0,263	0,238	0,3129	0,3421
The Republic of Mordovia	55-56	44	57	64	0,303	0,308	0,3092	0,2886
The Republic of Tatarstan	43	29	15	20	0,32	0,342	0,4192	0,4002
The Republic of Udmurtia	61	58	65	66	0,275	0,283	0,2879	0,2785
The Republic of Chuvashia	42	21	37	33	0,321	0,367	0,3661	0,3682
Perm krai	13	9	30	11	0,403	0,427	0,3746	0,4318
Kirov region	57	55	45	43	0,286	0,297	0,3347	0,3379
Nizhny Novgorod region	5	3	3	3	0,46	0,5	0,5423	0,5211
Orenburg region	16	26	39	35	0,348	0,382	0,352	0,3641
Penza region	63	59	20	32	0,273	0,281	0,4059	0,3684
Samara Region	21	16	13	12	0,357	0,375	0,4271	0,4297
Saratov region	44	33	26	46	0,318	0,336	0,3855	0,3280
Ulyanovsk region	8	4	1	1	0,432	0,496	0,6274	0,6219

In accordance with the index of scientific and technological capabilities in the I group of regions of the Volga Federal District Ulyanovsk included (0.6219 - 1st place) and Nizhny Novgorod (0.5211 - 3rd place) area, where there are some of the highest in the country of provision of science and technology financial and human resources, effectiveness of the scope of research and development. The distinguishing features of these regions, there are significant (significantly above the medium-Russian) levels of domestic expenditure on research and development, salary and the specific number of employees engaged in research and development, exports and the number of technologies developed by advanced technologies, based on the 1 million people the economically active population. Also, these regions of the Volga Federal District stand out among the other regions of the high proportion of young people under 39 years old in the age structure of

researchers. In addition, in the Ulyanovsk region was a significant contribution to business organizations in funding research activities, as well as high patent activity.

In group II regions on the importance of scientific and technical potential of the index, along with the Republic of Bashkortostan (0.4435 - 10th place), the Chuvashia Republic (0.3682 – 33th place) were Perm region (0.4318 – 11th place), Samara region (0 , 4297 - 13th place), the Republic of Tatarstan (0.4002 – 20th place), Penza region (0.3684 – 32th place), Orenburg region (0,352 – 39<sup>th</sup> place).

In the III group included such regions of the Volga Federal District as the Republic of Mari El (0.3421 – 39th place), Kirov region (0.3379 – 43th place), Saratov region (0.3280 - 46<sup>th</sup> place), Republic of Mordovia (0.2886 – 64th place), Udmurtia (0.2785 - 66th place), which have sufficiently low rates of scientific and technological capacity.

During the analyzed period (2012 - . 2013) in the Republic of Mari El have been positive changes in the field of scientific and technical potential of innovation, which has led to an improvement in its ranking by 16 positions. Also improved their ratings of Perm region (-19), the Chuvashia Republic (-4), Orenburg region (-4), Kirov region (-2) Samara Region (1). In the Republic of Bashkortostan (0 items) Ulyanovsk Region (0) Nizhny Novgorod region (0) rating has not changed. In the Saratov region (20), the Penza region (12), the Republic of Mordovia (7), the Republic of Tatarstan (5) Udmurtia Republic (1) there was a decrease of the ranking.

Rating regions on innovation (Table 4) is the aggregated estimate of the intensity of the creation, implementation and practical application of technological, organizational and marketing innovations in various regions of Russia. Positions in the ranking of regions are set according to the index, defined on the basis of indicators comprehensively characterizing resources and the results of innovation activity, the activity of small, medium and large businesses in the development of scientific and technological innovations.

Table 4  
Rating of RF subjects on the index value "Innovation activities"

The regions of the Volga Federal District	Place occupied region in the Russian Federation on the value of the index "Innovation activities"				Rating of RF subjects on the index value "Innovation activities"			
	2008	2010	2012	2013	2008	2010	2012	2013
The Republic of Bashkortostan	13	13	15	35	0,377	0,381	0,377	0,3031
The Republic of Mari El	46-47	51	51	48	0,251	0,24	0,2579	0,2629
The Republic of Mordovia	27-28	2	5	2	0,3	0,524	0,4621	0,5332
The Republic of Tatarstan	9	7	2	3	0,422	0,406	0,5236	0,5251
The Republic of Udmurtiaia	19	31	24	25	0,343	0,28	0,333	0,3445
The Republic of Chuvashiaia	2	3	1	1	0,571	0,522	0,6151	0,5499
Perm krai	1	1	9	11	0,576	0,527	0,4287	0,4272
Kirov region	16	34	43	42	0,35	0,273	0,2765	0,2893
Nizhny Novgorod region	8	4	3	8	0,411	0,491	0,4977	0,4479
Orenburg region	34	25	41	52	0,289	0,295	0,2846	0,2544
Penza region	36-37	28	17	10	0,286	0,285	0,3643	0,4290
Samara region	4	17-18	23	34	0,429	0,356	0,3336	0,3036
Saratov region	32	35	27	30	0,294	0,269	0,3306	0,3162
Ulyanovsk region	7	14	45	40	0,415	0,372	0,2728	0,2915

In the Republic of Mari El has some of the lowest levels of activity in the Russian Federation in the field of technological innovation, the proportion of companies are developing their own innovation, low intensity and effectiveness of cooperative ties in the field of innovation. Also, in the Republic of Mari El organizations showed low activity in the field of organizational management and marketing innovation. The percentage of organizations implementing non-technological innovation, Mari El Republic was part of the group III (0.2629 - 48 place).

In accordance with the index of innovation Chuvashia Republic (0.5499) in 2013 as in 2012 he won the 1st place and I led the group of regions. This group also includes the Republic of Mordovia (0.5332 - 2nd place), the Republic of Tatarstan (0.5251 - 3rd place), Nizhny Novgorod region (0.4479 - 8th place), Penza region (0.4290 – 10th place) and Perm region (0.4272 – 11th place).

The group of leaders of the Russian regions are Tatarstan, Lipetsk and Tomsk regions, St. Petersburg. High values of the index were observed in the Lipetsk region (21.8%), the Republic of Mordovia and Tatarstan (by 19.9%).

In the II group of Russian regions in terms of the index of "innovative activities" of Volga Federal District included only Udmurtia (0.3445 – 25th place). Group III regions concerned Saratov region (0.3162 – 30th place), Samara region (0.3036 - 34th place), Republic of Bashkortostan (0.3031 - 35 place), Ulyanovsk region (0.2915 – 40th place), Kirov area (0.2893 – 42 place), the Republic of Mari El (0.2629 - 48th place), Orenburg region (0.2544 – 52 place).

In general, the Volga Federal District is characterized by the fact that it is located the basic number of Russian regions belonging to the first two groups.

Chuvashia Republic (0) maintained its high first place among the Russian regions on the index.

In accordance with the rating of the Russian regions on regional innovation index of the positive changes in the Penza region (-7), the Ulyanovsk region (-5), the Republic of Mari El (-3), the Kirov Region (1) and the Udmurtia Republic (1) in the field of innovation, which has led to an increase in their index. (Anatoliy, 2016)

At the same time, the Republic of Bashkortostan (20) Samara region (11), Orenburg region (11), Nizhny Novgorod region (5), the Republic of Mordovia (3), Saratov region (3), Perm (+ 2) and the Republic of Tatarstan (1) worsened its ranking.

Rating regions on the index value "quality of innovation policy" (see Table 5) is calculated according to the statistical figures the proportion of budget expenditure, indicators that reflect the quality of the regulatory and legal framework of regional innovation policies and organizational support (based on open-source).

Table 5  
Rating the value of RF subjects on "Quality Innovation Policy" index

The regions of the Volga Federal District	Place occupied region in the Russian Federation on the index value "quality of innovation policy"				Rating of RF subjects on the index value "quality of innovation policy"			
	2008	2010	2012	2013	2008	2010	2012	2013
The Republic of Bashkortostan	4	5	19	23	0,566	0,727	0,5545	0,4815
The Republic of Mari El	44	51	62	60	0,362	0,463	0,2709	0,2385
The Republic of Mordovia	79	53-54	17	19	0,019	0,457	0,5838	0,5090
The Republic of Tatarstan	5-7	8	1	1	0,56	0,674	0,7984	0,7617
The Republic of Udmurtia	56	67	79	79	0,234	0,345	0,1278	0,1127
The Republic of Chuvashia	5-7	6	7	10	0,56	0,707	0,6363	0,5697
Perm krai	6-10	17-19	4	26	0,559	0,668	0,6464	0,4562
Kirov region	71	49	47	33	0,155	0,468	0,3824	0,4444
Nizhny Novgorod region	17-18	20-22	25	33	0,556	0,667	0,5046	0,4444
Orenburg region	62-64	9-10	40	48	0,228	0,673	0,4002	0,3473
Penza region	49	24	16	5	0,337	0,593	0,625	0,6483
Samara region	32	38-47	52	39	0,446	0,566	0,3775	0,3945
Saratov region	47	59-60	56	54	0,34	0,447	0,375	0,3333
Ulyanovsk region	17-18	38-37	36	36	0,556	0,566	0,5	0,4132

In accordance with an index of the quality of the innovation policy of the Republic of Mari El was included in the IV group (0.2385 - 60 place) and occupied the last place in the Volga Federal District, together with the Udmurtia Republic (0.1127 - 79 place).

Group I consisted of 2013 Chuvashia Republic (0.5697 - 10th), Republic of Tatarstan (0.7617 - 1st place) and Penza region (0.6483 - 5th place), where one of the most important factors in favor of innovation development quality of innovation policy. With regard to the Chuvashia Republic as well as to the Republic of Tatarstan noted a correlation between the high quality of innovation policy and high place in the overall ranking of the regional innovation development.

In the II group of regions on this list included the Republic of Mordovia (0.5090 - 19th place), the Republic of Bashkortostan (0.4815 - 23 place), Perm (0.4562 - 26 place), Nizhny Novgorod region (0.4444 - 33 place)

and the Kirov region (0.4444 - 33 place). In Group III consisted of Ulyanovsk region (0.4132 - 36 place), Samara region (0.3945 - 39 place), Orenburg region (0.3473 - 48 place), Saratov region (0.3333- 54th place). Chuvashia Republic in this rating has worsened its position from 6th to 10th place (4). Improved position in the ranking was noted in the Kirov region (-14), the Samara region (-13), the Penza region (-11) and the Republic of Mari El (-2). The deterioration occurred in the rating of the Perm region (22), the Orenburg region (8), the Republic of Bashkortostan (4), the Republic of Mordovia (2) and the Saratov region (2). The Republic of Tatarstan (0) Udmurtia (0) Nizhny Novgorod region (8) and the Ulyanovsk region (0) retained their seats. (Smirnov, 2004)

In 2010, the Russian Federation, with the active participation of the Fund for Assistance to Small Innovative Enterprises in the scientific and technical sphere (I.Bortnik) was established Association of innovative regions of Russia (AIRR) with the support of the Russian Academy of National Economy and Public Service under the President of Russian Federation and JSC "Rosnano". At the beginning of 2014, it included the following Russian regions :, the Republic of Mordovia, Tatarstan, Perm Region, Republic of Bashkortostan, Samara region, Ulyanovsk region (including incoming and Volga Federal District), and the Irkutsk region, Kaluga region, Krasnoyarsk, Novosibirsk region, Tomsk region, Lipetsk region, the Altai Territory. (Stukova, 2015).

The aim of the Association is to promote the efficient development of innovative participating regions, built on the recognition of the existing different models of scientific and technological growth regions. This resource will also be used for testing the state of regional support mechanisms. The main tasks - to stimulate the exchange of experiences on the creation of favorable legal, economic, social, creative environment of innovation, organization and promotion of joint innovation, economic, scientific, technical and educational projects among the members of the Association, in authorities and institutions of Russia. (Smirnov, 2014)

Under the auspices of AIRR studies have been conducted on the basis of which calculated "Rating of innovative development of Russian regions for management purposes." The main components include the following indices: 1) the potential for the creation of innovation (20%); potential commercialization of innovations (30%), 3) the effectiveness of innovation policy. At the same time to the indicators characterizing the human resources are the following: 1) the number of students of educational institutions of higher and secondary vocational education to 10,000 people of population; 2) The number of researchers per 10,000 people of population; 3) the share of the employed population with higher education in the region's total population of working age; 4) the number of filed PCT international applications per 1 million people of population; 5) the number of granted protection results of intellectual activity per 1 million people of population; 6) publication activity of scientists and researchers. These figures relate to the Group 1 (the potential in the creation of innovation). By the Group 2 (potential for commercialization of innovations) include an indicator of results of intellectual activity used per 1 million people of population. (Electronic resource, 2014)

In accordance with the rating of innovative development of Russia Association of innovative regions of Russia Republic of Mari El regions ranked in 2015 among 31 regions of Russia (Table 6) .If this for the period 2009-2015 years rating of the Republic of Mari El has worsened by 6 positions. Also in the regions of the Volga Federal District there was a deterioration in the Republic of Mordovia (-1 position), the Chuvashia Republic (-10), the Kirov region (-7), the Orenburg region (-19), the Udmurtia Republic (-13), the Saratov region (-10), Samara region (4), the Perm region (4).

Table 6

Rating of innovative development of Russian regions AIRR

The regions of the Volga Federal District	Place occupied region in the Russian Federation on the value of the index AIRR				Rating of the RF subjects meaningfully AIRR index			
	2009-2010	2011-2012	2012	2015	2009-2010	2011-2012	2012	2015
The Republic of Bashkortostan	28	17	33	16	0,46	0,46	0,24	0,45
The Republic of Mari El	37	63	52	31	0,42	0,32	0,2	0,41



The Republic of Mordovia	19	16	11	20	0,49	0,47	0,31	0,44
The Republic of Tatarstan	4	4	5	3	0,58	0,58	0,35	0,56
The Republic of Udmurtia	25	39	26	38	0,47	0,37	0,25	0,39
The Republic of Chuvashia	8	20	4	18	0,56	0,44	0,38	0,45
Perm krai	7	10	7	11	0,56	0,51	0,34	0,49
Kirov region	36	37	31	43	0,43	0,38	0,24	0,36
Nizhny Novgorod region	11	3	10	4	0,54	0,59	0,31	0,54
Orenburg region	38	55	37	57	0,42	0,34	0,27	0,34
Penza region	17	30	20	17	0,49	0,41	0,27	0,45
Samara region	10	6	8	14	0,55	0,53	0,33	0,47
Saratov region	20	24	29	30	0,48	0,43	0,25	0,41
Ulyanovsk region	18	13	8	12	0,49	0,5	0,33	0,48

Better places in the ranking took place in the Republic of Bashkortostan (12) Nizhny Novgorod region (7), the Ulyanovsk region (6), the Republic of Tatarstan (1). Also, no changes in the rankings from the Penza region.

At the highest positions in the ranking were all-Russian Republic of Tatarstan (3 position) and the Nizhny Novgorod region (4th position).

### 3. CONCLUSION

Based on the analysis of the situation of the Republic of Mari El in the major Russian ratings of regional innovation development can draw the following main conclusions both in terms of strengthening the innovation of social and economic processes in the Republic of Mari El, and in the aspect of security personnel potential of these processes. (Smirnov, 2016)

Mari El Republic is characterized by low aggregate potential for innovation in the Volga Federal District and in the Russian Federation as a whole and occupies the last position. Notes the low position suggests strengthening and deepening of all actors of innovation processes in the region. At the same time, the value of subscript "Socio-economic conditions of innovative activity" takes place 40 low (with negative dynamics - 2012 60 place). To improve the situation it is necessary to realize the following main activities: (Lower, 2011).

1) in the direction of "the main macroeconomic indicators" (2014 - the index value was 0,255, 49<sup>th</sup> place) - to increase one of the lowest in the Volga Federal District of the Russian Federation and the GRP (Gross Regional Product) per person employed in the economy of the region (Republic of Mari E - 0.110, 62<sup>d</sup> place); increase in the Volga Federal District of the Russian Federation and the coefficient of renewal of fixed assets (0.162, 69<sup>th</sup> place); increase the average share of employment in high-tech and medium-tech sectors in industrial production in the total number of employed in the economy of the region (0.597, 10); preserve and increase the relatively low share of employment in knowledge-intensive services sectors in total employment in the economy of the region (the Czech Republic - 0.237, 40);

2) in the direction of "the educational potential of the region" (2014 - the index value was 0.391, 41<sup>st</sup> place) - to increase the level of the leading regions of the proportion of the population aged 25-64 with higher education in the total population of the relevant age group (Mari El Republic - 0.256, 54<sup>th</sup> place); maintain and increase the number of students enrolled in higher education programs - undergraduate, specialties, master's) per 10 000 people. population (0,450, 46<sup>th</sup> place);

3) in the direction of "the level of development of the information society" (2014 -. The index value was 0.647, 47th place) - to maintain and increase the proportion of organizations that have access to the Internet with high data transfer speed of at least 256 kbit / s, the total number of organizations (0.668, 24); increase the proportion of households with access to the internet, the total number of households (0,686, 60).

In sub-index value of "scientific and technical potential" Mari El Republic occupies the lowest place 43 (with a positive tendency - 2012 55 place). You can offer the following basic measures that can improve this area of innovation activities in the region:

1) in the direction of "funding for research and development" (2014 - the index value was 0.169, 69th place) - to increase one of the lowest in the Volga Federal District of the Russian Federation and internal expenditure on R & D as a percentage of gross regional product (0.030, 72 place) ; increase the relatively low domestic expenditure on R & D per researcher (0.214, 63 place); increase the low proportion of assets of the business sector organizations in total domestic expenditure on research and development (0.197, 44th place); increase the ratio of the average monthly salary of employees engaged in research and development, to the average monthly nominal wage in the region (0.235, 69th place);

2) in the direction of "cadres of Science" (2014 - the index value was 0.436, 10th place) - to increase one of the lowest in the Volga Federal District of the Russian Federation and the share of employment in research and development in the region's average annual number of employed in the economy (0.015, 80) ; preserve and enhance one of the highest proportion of persons aged under 39 years in the number of researchers (0.793, 3); increase the proportion of persons with an academic degree, the number of researchers (0.501, 28);

3) in the direction of "the impact of research and development" (2014 - the index value was 0.384, 27th place) - to maintain and increase the number of articles published in peer-reviewed journals indexed in RISC per 10 researchers (1.000, 1); maintain and increase the number of patent applications for inventions filed with Rospatent national applicants per million economically active people in the region (0.536, 16); increase the number of advanced production technologies developed in the region, based on one million economically active population (0,000, 62); increase the lowest in the Volga Federal District of the Russian Federation and the ratio of revenue from technology exports to GRP (per 1 ths. rub. GRP) (0.000, 48).

In sub-index value of "innovation" Mari El Republic occupies the 23th place in 2014 (with a positive tendency - 2012 51 place). You can offer the following basic measures that can improve this area of innovation activities in the region:

1) In the direction of "innovation activity of organizations" (2014 year.- index value was 0.260, 55th place) - to increase the lowest in the Volga Federal District of the Russian Federation and the proportion of organizations implementing technological innovation in the total number of organizations (for industrial organizations) (0.219, 50th place); increase the proportion of organizations implementing non-technological (marketing and / or organizational innovation), the total number of companies (for industrial organizations) (0.412, 37th place); High increase in RF Volga Federal District and the proportion of organizations with complete technological innovations developed in-house, in the total number of organizations (for industrial organizations) (0.242, 50); to increase one of the lowest in the Volga Federal District of the Russian Federation and the proportion of organizations that participated in the implementation of joint projects on research and development in the total number of organizations (for industrial organizations) (0.166, 63 place);

2) In the direction of "small innovative business" (2014 - the index value was 0.196, 53 place) - to maintain and increase the low proportion of small businesses, implementing technological innovation in the total number of small enterprises (by industrial organizations) (0.438, 41 seats);

3) in the direction of "the cost of technological innovation" (2014 - the index value was 0.438, 41st place) - increase the intensity of the low cost of technological innovation (in industrial organizations) (0.438, 41 place);

4) in the direction of "impact of innovation" (2014 - the index value was 0.507, 4th place) - to maintain and increase the relatively high share of innovative products, works and services in the total amount made goods, works and services (industrial organizations ) (0.176, 16th place); to maintain one of the highest in the Volga Federal District of the Russian Federation and the proportion of newly introduced or exposed to significant technological change of innovative products, works and services for the new market in the total volume of shipped goods, works and services (for industrial organizations) (1.000, 1); increase the low proportion of organizations rated the reduction of material and energy costs as a result of the main innovation in the total number of organizations implementing technological innovation (in industrial organizations) (0.346, 50th place).

In sub-index value of "quality innovation policy" Mari El Republic in 2014 it took 48th place (with a positive tendency - 2012 62 place). You can offer the following basic measures that can improve this area of innovation activities in the region:

1) in the direction of "the quality of regulatory and legal framework of innovation policy" (2014 - the index was 0,500, 35th place) - to implement and develop a strategy (concept) innovative development (innovation strategy) and / or profile section on innovative development (support for innovation ) in regional development strategy (1,000, 1st place); We need to develop the territorial planning scheme (this factor is absent in the Republic of Mari El) (0.000, 21 place); implement and improve the legislative act defining the basic principles and measures of state support of innovation activity in the region (0,000 66th place); implement and develop a specialized program (set of measures) of state support for the development of innovation, innovation and innovation entities (1,000, 1st place);

2) in the direction of "organizational support for innovation policy" (2014 - the index value was 0,500, 20th place) - to increase the efficiency of the specialized coordination (advisory) body on innovation policy (the support of innovation activity) under the President of the Republic of Mari El and the Government of the Republic of Mari E (1,000, 1st place); improving the work of the special regional development institution in support of the subjects of innovation and / or innovative projects (0,000, 30th place);

3) in the direction of "budgetary expenditures on science and innovation" (2014 - the index value was 0.049, 43 place) - increase the low proportion of appropriations for civil science from the funds of the consolidated budget of the Russian Federation in the costs of the consolidated budget of the Russian Federation (0.146 , 17th place); increase the very low specific weight of the budget of the subject of the Russian Federation and local budgets in total expenditure on technological innovation (in industrial organizations) (0.000, 39th place); increase the ratio of the volume of attracted grants from the federal budget for the development of innovation infrastructure for small and medium-sized businesses to GRP (in terms of 1 million rub GRP) (0.000, 31 place).

All of these activities to some extent linked to the human resources of the region.

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