

# Encouragement of Innovative Activity of Economic Agents as a Basis for Regional Competitiveness Growth: Institutional Aspect

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**Abstract** — The article studies the influence of institutional factors on the innovative activity in the region as a basis of its competitiveness (using as the example the Volgograd region). In the result of the analysis of the competitiveness of the mentioned subject of the Russian Federation and after the study the conditions by which it is determined (institutes, infrastructure, macroeconomic stability, healthcare and higher education) a set of challenges reducing the efficiency of the social and economic development is identified both for the region and for the country as a whole. In order to meet the mentioned challenges the following measures are suggested: improvement of normative and legal base in the conditions of the dialogue “authorities-business”; creation of necessary infrastructural objects in the innovative sphere; elimination of “ambiguity” of standards at auditing; harmonization of the indicators. The mentioned steps will allow increasing the innovative character of the economic agents as they will create necessary conditions for the activation of the work in this sphere and consequently will strengthen the competitive positions of the region within the national market.

**Keywords** — institutions; competitiveness; region; factors; innovative activity

## I. INTRODUCTION

Nowadays innovations are one of the determining factors influencing the competitiveness of a country and consequently the search of the opportunities of the activity growth of economic agents in the innovative sphere is one of the main tasks of the scientific research. According to the global rating of the competitiveness of countries in 2016-2017 the Russian Federation had the 43<sup>th</sup> rank (among 138 ranks). The gap of Russia and the leading foreign countries looked as follows. The United States of America was 40 ranks higher, Germany was 38 higher, Great Britain 36 ranks higher, Japan 35 ranks higher than Russia [1].

The countries mentioned above advanced Russia (it had the 12<sup>th</sup> rank from 50 possible in 2016) also by the level of the innovative development of the economy. Thus, for instance, the leading positions had Germany, Japan, the USA and some others [2]. The mentioned circumstance proved the existing inconsistencies in the level of competitiveness and in the innovative development of the economy of Russia with other developed countries.

It is worth mentioning that together with the economic constituent determining the innovative activity of the economic agents an important role have the institutional conditions which can be both a catalyst and an inhibitor of the activity in the innovation sphere within the country in general and in its regions. This fact determines the necessity of the research of institutional discrepancies hindering the development of national (regional) innovation system. Their overcoming will allow increasing the efficiency of its functioning and, consequently, providing the national economy with competitive advantages.

## II. MATERIALS AND METHODS

For the analysis of the condition of the innovation sphere of the Volgograd region the systematic approach was used to study the elements which are the foundation for it. On the basis of the statistical analysis of the indices characterizing the competitiveness at macro (Russian Federation) and meso (Volgograd region) levels a number of the most important of them (institutes, infrastructure) were selected. From the mentioned group of the elements influencing the competitive ability of the country and the region the attention is focused on the study of the institutional aspect. The study of the regional specificity and its comparison with the federal one allowed

identifying considerable differences in the values of indices determining the level of competitiveness of the region and the country in the whole.

### III. RESULTS AND DISCUSSION

In the course of research the analysis of the institutional model of the innovative activity encouragement was carried out.

In the result of the integrated research carried out by foreign and national scientists and after the analysis the identified relations in the competitiveness with the conditions mentioned above which influence it (institutes, infrastructure) the calculation of the index of global competitiveness (Table I) was made. The given index is calculated on the basis of the values of the mentioned conditions and includes 21 indices which characterize them.

TABLE I. DYNAMICS OF THE INDEX OF GLOBAL COMPETITIVENESS OF RUSSIA AND THE INDICES WHICH FORM IT

Index	Years							
	2010	2011	2012	2013	2014	2015	2016	2017
GCR	4,21	4.20	4.20	4.20	4.40	4.40	4.51	4.64
Rank (GCR) (out of 138)	66	67	67	64	53	45	43	38
$I_{inst}$	3.08	3.09	3.09	3.28	3.45	3.46	3,63	3.70
Rank (Inst)	128	133	133	121	97	100	88	83
GII	56	51	51	62	49	48	43	45
Rating of innovative activity of the Volgograd region	38	32	32	35	45	55	51	39

<sup>a</sup> Vsemirnyi ekonomicheskii forum: reiting global'noi konkurentosposobnosti [World wide economic forum: rating of global competitiveness].

<sup>b</sup> Natsional'naya assotsiatsiya innovatsii i razvitiya informatsionnykh tekhnologii [National association of innovations and development of informational technologies].

In the given research it is necessary to focus the attention on the institutional constituent and it is indispensable to select the indices characterizing it: protection of property rights (1); protection of intellectual property (2); public confidence (3); irregular payments and bribes (4); independence of judicial system (5); selectiveness in the decisions taken by the authorities (6); efficiency of legal base at the disputes resolution (7); transparency of the state policy (8); level of organized criminality (9); reliability of police service (10); business ethics (11); efficiency of auditing and reporting standards (12); efficiency of investor protection (13) [1].

The data in the table show the considerable changes in the values of the global index of competitiveness (GCR) of the Russian Federation for the analyzed period and varies in the diapason from 4.20 - 4.64 (at the maximal value equal to 7).

At the same time the ranks of the country for the period from 2012 to 2017 in total grew from 67<sup>th</sup> rank to 38<sup>th</sup> in the

mentioned rating. In total 138 countries were included into the ranking [1].

When analyzing the indices of the development institutes in the country ( $I_{inst}$ ) and the ranks of the Russian Federation in it (Rank (Inst)) it is worth mentioning the positive changes.

Further for a more logical research let us study the similar changes in the level of the innovation development of Russia in order to track the possible relations between them.

Thus it is necessary to pay attention to the global index of innovative activity (GII) of the Russian Federation [3]. The dynamics of the mentioned index is also characterized by positive changes (exemption is only year 2013).

Further on the basis of the level approach the index of the innovative activity of the Volgograd region was analyzed and the decrease was observed from 2013 to 2016.

For a more detailed analysis of the indices determining the mentioned changes it is necessary to study the values of a number of the indicators (1-13 from the list provided above) which influence the indices mentioned above. It is necessary to focus the attention on the Volgograd region and compare the data of the indices with average values in Russia (and also with threshold values).

TABLE II. INSTITUTIONAL INDICATORS OF THE RUSSIAN FEDERATION AND THE VOLGOGRAD REGION

Index	Threshold values	RF (total 176)	Volgo grad region (85)
Level of organized crime (per 100 000) (2016)	1000	1496	1522
Number of applications about the violation of entrepreneurs' rights (number) (2016):	-	417	275
Satisfied	-	-	23%
Explanation provided	-	-	68%
Facts were not confirmed	-	-	9%
Complaints on the audit (2016)	-	10	31
Rank in the rating of the registered bribes (2016)	-	131	1
Investment attractiveness (2017)	-	1A-2C	3B1
Level of police confidence (data for year 2016) (max 100 – the best value)	70	47	15

<sup>c</sup> Federal'naya sluzhba gosudarstvennoi statistiki [Federal service for state statistics].

<sup>d</sup> Ekspert. R.A. Reitingovoye agenstvo [Expert. RA. Rating agency].

<sup>e</sup> Yezhegodiy doklad Upolnomochennogo po zashchite prav predprinimatelei v Volgogradskoi oblasti za 2016 g. [Annual report of the entrepreneurs' rights ombudsman in the Volgograd region for 2016].

<sup>f</sup> Ministerstvo vnutrennikh del RF [Ministry of Internal Affairs of the Russian Federation].

Judging from the mentioned data it is worth noticing that in some indices the Volgograd region shows obvious negative tendencies (high level of criminality [4, 5], considerable number of complaints at control [6], a lot of facts of bribing [7], low potential of investment attractiveness of a region [8]; low level of the confidence to police [9] and so on). It was impossible to present the dynamics of the indices due to the absence of the data in every of the constituents.

Also it is necessary to suggest some clarification to the indices shown in the table. The threshold values are taken from the methodology suggested by S.Yu. Glaziev on the determination of the economic security of the country (level of criminality) and also they are borrowed from the international ratings by means of the calculation of average values in the countries G7 (degree of the confidence to police authorities).

The absence of threshold values in a number of indices is explained by the fact that there is no information in open access for the calculation of a mean value for the world leading countries and there are differences in the methodologies of the assessment of a number of indices which determine the opportunity of their correct comparison and for the identification of the reasons for the discrepancies in their values.

The second condition from the ones mentioned above which considerably influences the competitiveness is the state of the infrastructure which has its own institutional “sphere”.

At the analysis of infrastructural objects of the Volgograd region it is worth mentioning their obvious insufficiency (only 7 objects). Even at a macroregional comparison upon the number of the mentioned objects the Volgograd region is behind the Krasnodar krai (30 objects), Rostov region (36 infrastructure objects), Astrakhan region (29 objects) [10] (Table III).

TABLE III. INFRASTRUCTURE OF INNOVATIVE SYSTEM OF THE VOLGOGRAD REGION

Infrastructural objects	Number
Territory of the priority social and economic development	0
Clusters	1
Government scientific centers	0
Business incubators	1
Innovation technological centers	1
Technological parks	0
Centers of the collective use	0
Engineering centers	2
Information and analytical centers	0
Associations	0
Information centers	1
Innovation centers	1
Consulting centers	0
Technology transfer centers	0
Centers for support of technologies and innovations	0
Budget funds	0
Other financial institutes	0

<sup>®</sup> National center for the monitoring of the innovative infrastructure of the scientific and technological activity of regional and innovative systems.

Judging from the mentioned above it is reasonable to isolate problems of the institutional character arising in the process of the activation of the innovative activity in the Volgograd region.

A. Insufficiency of infrastructural objects (lowers the attractiveness for the investors, engenders institutional traps, lowers the efficiency of use of innovative potential of the region.

B “Unclear” standards at the making the audits (contestable questions, growth of the risks of economic agents (including the innovation sphere) by which they increase the transaction costs).

C. High level of corruption in the regional economy. The existing business culture engenders numerous facts of bribing and it is expressed as informal rules for the problem solution. It is also the manifestation of an inefficient institutional system of the region lowering the activity of both business and science in the sphere of innovation.

D. Low level of the confidence to police and political parties in the region (makes up only 15 from 100 possible grades when the Russian wide value is 47 in 2016) [9]. It is important to make a detailed analysis of such a condition in order to find the reasons contributing to such a low level of confidence in the region but it is not possible due to the absence of the data about the methodology of calculation of such an index in official sources of the information.

F. Complicated character in the analysis of the problems in the institutional system of the regions which is determined by the absence of the data in the indices mentioned above which form the index  $I_{inst}$  (some of them are presented in the list of indices (1-13) but they are not presented in official statistical data).

#### IV. CONCLUSION

Taking into account the mentioned above it is indispensable to suggest the following measures for the improvement of the institutional constituent of the encouragement of the innovative activity in the region (using as the example the Volgograd region) in relation with the problems which were presented above.

A. Creation of a number of the necessary infrastructural objects in the innovation sphere of the region on the basis of state and private partnership which is presented by the interaction of «science, business and state» [11].

B. Elimination of “ambiguity” of standards of audits which leads to appearance of contestable problems on the basis of an active dialogue “authorities-business” with the participation of chambers of commerce and industry as an intermediary. The functions of the chambers of commerce and industry at the same time are manifested in the participation in the development and correction of regional legislation acts and programs of economic development for the improvement of formal norms (legal acts) giving the “frame conditions” of the functioning of economic agents.

C. Toughening of legislation in the sphere of corruption (strengthening of punishment at the identification of the fact of bribing). In this case it is worth speaking about the experience of Singapore which includes a complex of the following efficient measures: (1) provision of transparency of control of

lower authorities by the officer of a higher rank; (2) rotation of authorities for the creation of corruption relations; (3) surprise inspections; (4) improvement of procedures of the interaction of the officials with citizens and organizations for the elimination of bureaucratic barriers; (5) creation of objective and independent mass media speaking about the corruption [12].

*D.* Increase of the functioning efficiency of basic institutes of the country and the region which is based on the observation of rights, freedoms, interests and security of citizens.

*F.* Harmonization of indices (according to world practices) characterizing the level of the efficiency of functioning of institutional model of the encouragement of the innovative activity both in regions and the country in the whole together with international rating systems.

*E.* Identification of the system of indices (its harmonization with international standards) indispensable for an integrated regional assessment of the institutional system development.

The measures for the improvement of institutional sphere will allow increasing the innovative activity of economic agents as they will create necessary (institutional and infrastructural) conditions for the encouragement of the activity in this sphere and respectively will strengthen the competitive positions of the region in the national market and consequently will create opportunities for the appearance of the advantages of the state in comparison with rival countries on the world economic stage.

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