



About the Methodology Related to Indicating Sensitivity of Regions Marketing

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ABSTRACT

Under the conditions when the Russian economy is moving to the world market, developing the evaluation of the competitive positioning and indicating of Russian regions becomes a key factor. We understand regions marketing as a set of products aiming at developing competitive advantages and individual peculiarities of cities and regions when positioning them on the world-wide market of territories. We will remind that region marketing is the specialized marketing activity performed on the territory for the purpose of creating, maintaining and changing opinions, intentions and behavior of subjects about it. Such subjects either already exist and operate on the specific territory or include their potential consumers. The target directions of this activity include attractiveness, total image of the territory (place), attractiveness of natural, material and technical, financial, labor, organizational, social and other resources focused on the territory, as well as opportunities to realize and reproduce such resources. This stipulates the necessity to improve the current system of statistical recording and accounting, work out a new system to evaluate competitive positioning and evaluate the sensitivity of regions marketing (SRM). Our goal was to consider the existing tools to indicate SRM, define the most narrow moments of researching this issue, and work out new tools for indicating as well as to carry out sample approbation of calculations, and evaluate results. The article considers these issues in relation to specific regions.

Keywords: Competitiveness of Regions, Evaluation Indicators, Marketing

JEL Classifications: M31, R11, O18

1. INTRODUCTION

Attention of researchers to evaluating competitive positioning and indicating of Russian regions increases (Ashwoth and Kavaratzis, 2010) We understand regions marketing as a set of products aiming at developing competitive advantages and individual peculiarities of cities and regions when positioning them on the world-wide market of territories. We will remind that region marketing is the specialized marketing activity performed on the territory for the purpose of creating, maintaining and changing opinions, intentions and behavior of subjects about it. These subjects either already exist and operate on the specific territory or include their potential consumers (Hauser and Urban, 1977). The target directions of

this activity include attractiveness, total image of the territory (place), attractiveness of natural, material and technical, financial, labor, organizational, social and other resources focused on the territory as well as opportunities to realize and reproduce such resources (Porter, 1980). Basic factors of competitive indicating of regions traditionally include raw and labor resources and their qualification, scientific and management potential, production basis; and the providing factors include entrepreneurship climate, quality of management potential, cost of labor force, infrastructure, etc. (Cliquet, 2002).

The evaluation of sensitivity of the region marketing is at the stage of development and totalizing (Danko, 2015). We understand the

sensitivity of region marketing (or SRM) as a set of indicators that characterize positioning of the region according to various features: Gender, age of the population, profit, level of the life length, morbidity of population, migration balance, etc.

Inclusion of SRM in the system of regions indicating stipulates the need in improving the existing system of methods and methodologies selection (Parfenova et al., 2014) and working out a new system related to evaluating competitive positioning of regions (Rainisto and Moilanen, 2009).

The article considers these issues in respect to specific regions (Katalko, 2008). Thus, gross regional product (GRP) is the most important indicator of the economy development on the macroeconomic level (Sekerin et al., 2014). This indicator allows to consider GRP from different perspectives (Danko, 2015), and to get the complete picture of economy functioning. The work researches the rating of GRP per head (billion RUB) by using the tempos of growth according to indicators (Dudin et al., 2013). Official ratings show rather stable picture of the Bashkortan and the Chuvash Republics (Govers and Go, 2009). In spite of the leading position of Tatarstan, we fix a decrease in their position in the official rating of GRP per head as of 2013. In order to calculate ordinary indicators of evaluating the competitiveness of regions, the initial data for 2013 was used. Our calculations showed that all three regions displayed a high level of diagnosis development and sensitivity to this indicator. In order to receive analytical results, we calculated the structure of GRP (Danko, 2015). According to the results of the analysis, Boston Consulting Group (BCG) matrix was made. It allows to define promising and unpromising branches of development for every considered object under research, and to determine financially dependent and the most unprofitable branches for every object under research (Firat and Schultz, 1997).

We will demonstrate some results of the regions ratings presented in Tables 1-3. So, the situation according to the rating of the social area development is as follows. The Republic of

Tatarstan holds the first position (Table 1). The Republic of Tatarstan holds the 9th position according to the expected life length at birth, the 5th position according to the coefficient related to child mortality, and the 2nd position according to the migration balance indicator (M). The advantage is vivid if we compare it with other regions. It comes under notice that according to the level of morbidity of population, all three regions have the enhanced indicators of the rating. For example, it is 51 for Tatarstan and 60 for the Chuvash Republic. Mass media do not mention this indicator. However, it is necessary to take into account that the ecological situation in these regions is bad and must be indicated separately (“Petersburg” TV and Radio Company).

According to the rating of the economy development, we again see the advantages of the Republic of Tatarstan (Table 2). We would like to emphasize the volume of investments in capital stock per head (Sekerin and Gribov, 2014), which is the highest in the Republic of Tatarstan - 10. The lowest volume among the considered regions is, unfortunately, in the Chuvash Republic - 45. According to the indicator related to the volume of wages debt, there is a region where this indicator must be troublesome. This is the Republic of Bashkortostan - position 68. And, of course, the indicator of nominal monetary revenues of population as calculated per head is low in the Chuvash Republic: Position 56 among those under consideration (“Petersburg” TV and Radio Company).

Now let's return to the main indicator of our consideration. This is the GRP, its structure according to types of activity in the republics.

In spite of the abundance of evaluation indicators and competitive positioning of regions, the issue related to indicating the sensitivity of territories marketing from the perspective of positioning the structure of gross product in the region economy, and the format of proportionality and demand by the population and consumer audience remain to be unconsidered (Tsenina and Tsenina, 2014).

Table 1: Rating of regions according to development of social area

Region	Position according to ELB	Position according to CM	Position according to MP	According to C	Position according to M	Total for separate indicators
Republic of Tatarstan	9	5	51	13	8	86
Chuvash Republic	19	4	60	14	39	136
Republic of Bashkortostan	18	48	53	18	57	194

ELB: Expected life length at birth, MC: Children mortality coefficient, MP: Morbidity of population, C: Criminality level, M: Migration balance, CM: Child mortality

Table 2: Positions of economy development indicators

Region	Position according to GRP/h	Position according to VICS/h	Position according to EU	Position according to WD	Position according to R/h	Position according to TS/h	Total for separate indicators	Position of the region according to the economy development
Republic of Tatarstan	16	10	43	23	6	17	115	9.1
Chuvash Republic	27	31	60	68	10	14	210	31
Republic of Bashkortostan	64	45	38	13	56	70	286	53

Growth of energy usage in the region for the period of 2010-2014 (EU), nominal monetary revenues as calculated per head (R/h). According to the turnover of trading and volume of provided services per head (TS/h). GRP: Gross regional product, WD: Volume of wages debt, GRP/h: Gross regional product per head, VICS/h: Volume of investments in capital stock per head

Due to this, our research focuses on these components of the regions.

2. METHODOLOGY

The methodology of indicating the sensitiveness of territories marketing consists of two parts.

The first part is based on the famous methodology of making a BCG matrix we use in respect to territories marketing. In order to do it, the whole calculation process includes defining the structure of GRP in dynamics, determining the size of the share of structural components of the GRP and assessing the tempos of growth and calculation of the gross added value. In order to evaluate the competitiveness of separate regions in the BCG matrix, two criteria are used: Tempo of the branch market growth, and relevant share of the market. The tempo of the market growth is defined as a weighted average of the tempos of growth of various market segments where the enterprise operates, or it is taken as equal to the GRP growth tempo. The tempos of the branch growth in the amount of 10% and more are considered as high. The relevant share of the market is defined by dividing the share of the market of the considered branch by the share of the whole market (Tsenina and Panasenko, 2012).

The whole calculation is made in dynamics (per 2 years). Matrix is made according to the received data. X-axis includes indicators of the relevant market share, and Y-axis includes tempos of the growth of the GRP structure.

The second part includes indicating the sensitivity of the territories marketing on the basis of the cognitive tools of diagnosis. We propose to do it by using strengths, weaknesses opportunities, threats (SWOT) analysis that is additionally specified due to calculating correlation coefficients for diagnosing the level of connections between the indicators related to the regions competitiveness.

The calculation formula is as follows:

$$r_{XY} = \frac{cov_{XY}}{\sigma_X \sigma_Y} = \frac{\sum (X - \bar{X})(Y - \bar{Y})}{\sqrt{\sum (X - \bar{X})^2 \sum (Y - \bar{Y})^2}}$$

Where X is the size of the GRP taken in dynamics for several years,

Y is indicators of revenues from the subject's consolidated budget, million RUB and wages for the same period of time.

We will remind that if the absolute value of the correlation coefficient is closer to 1, it shows a strong interrelation between variables. If it is closer to 0, it shows a weak connection or its absence. If the value is -1 or $+1$, it is possible to speak about the existence of the functional interrelation between variables, i.e., one of them can be expressed via another one by means of mathematical function.

After defining the correlation coefficients for researching the power of connections between indicators related to the regions competitiveness, matrix of SWOT analysis is made.

3. RESULTS

Using the required data for every selected territory, we will make calculations and comparative analysis with the total results for the Russian Federation (Table 3 and Figure 1).

According to the analysis materials, in the Republic of Tatarstan the promising branches of the development include manufacturing and construction. They account for 30% of the region GRP. All these branches are leaders in the Republic of Tatarstan, and due to their potential, they bring considerable profits (Suldina, 2012). However, in order to maintain the high share of the dynamic market, they require financing at the expense of such branches as

Table 3: Data required for BCG matrix for the Republic of Tatarstan

Structure of GRP	2011 share	2012 share	Relative share (X)	Growth tempo % (Y)	2012 gross value added	2011 gross value added
Agriculture, hunting, and forestry	7.1	6.0	1.43	92.98	8621598	9272223.7
Fishery	0	0.0	0.00	0.00	0	0
Mineral production	22.2	21.3	1.90	105.57	30606672.9	28992023.4
Manufacturing	17	18.3	1.06	118.44	26295873.9	22201099
Production and allocation of energy, gas and water	2.9	2.5	0.66	94.85	3592332.5	3787246.3
Construction	10.3	10.4	1.44	111.10	14944103.2	13451254.1
Wholesaling and retailing, repair of cars, motorcycles, household goods, and personal appliances	13.7	15.1	0.83	121.27	21697688.3	17891473.9
Hotels and restaurants	0.9	1.0	0.91	122.26	1436933	1175352.3
Transport and communications	8.2	7.5	0.74	100.64	10776997.5	10708765.4
Financial activity	0.5	0.4	0.67	88.02	574773.2	652973.5
Operations with real estate, rent and services provision	9.2	9.0	0.76	107.64	12932397	12014712.4
State management and provision of military safety, social insurance	2.5	2.9	0.52	127.63	4167105.7	3264867.5
Education	2.4	2.5	0.81	114.61	3592332.5	3134272.8
Public health service and provision of social services	2.1	2.1	0.53	110.03	3017559.3	2742488.7
Provision of other housing, social and personal services	1	1.0	0.67	110.03	1436933	1305947

BCG: Boston consulting group, GRP: Gross regional product

Table 4: Correlation coefficients for researching the power of connections between indicators of regions competitiveness according to the group of factors

Republic of Tatarstan (social indicators)					
Year	x (GRP)	y (profits)	x*y	x ²	y ²
2009	885100	0.0158925	14066.45175	7.83402E+11	0.000252572
2010	1001600	0.02	18453.4784	1.0032E+12	0.000339444
2011	1305900	0.02	26408.69334	1.70537E+12	0.000408954
2012	1436900	0.02	34491.77867	2.06468E+12	0.000576206
2013	1520000	0.03	39765.024	2.3104E+12	0.000684408
Total	6149500	0.1047046	133185.4262	7.86706E+12	0.002261584
Average	1229900	0.02094092	26637.08523	1.57341E+12	0.000452317
r (xy)=0.963244475	The connection is very strong, direct				
Republic of Tatarstan (social indicators)					
Year	x (GRP)	y (profits)	x*y	x ²	y ²
2009	885100	0.012116	10723.8716	7.83402E+11	0.000146797
2010	1001600	0.013955	13977.328	1.0032E+12	0.000194742
2011	1305900	0.016322	21314.8998	1.70537E+12	0.000266408
2012	1436900	0.019222	27620.0918	2.06468E+12	0.000369485
2013	1520000	0.0212264	32264.128	2.3104E+12	0.00045056
Total	6149500	0.0828414	105900.3192	7.86706E+12	0.001427993
Average	1229900	0.01656828	21180.06384	1.57341E+12	0.000285599
r (xy)=0.97789669	The connection is very strong, direct				
Republic of Tatarstan (social indicators)					
Year	x (GRP)	y (wages)	x*y	x ²	y ²
2009	885100	0.0152069	13459.62719	7.83402E+11	0.00023125
2010	1001600	0.0173501	17377.86016	1.0032E+12	0.000301026
2011	1305900	0.0200094	26130.27546	1.70537E+12	0.000400376
2012	1436900	0.0232337	33384.50353	2.06468E+12	0.000539805
2013	1520000	0.0260345	39572.44	2.3104E+12	0.000677795
Total	6149500	0.1018346	129924.7063	7.86706E+12	0.002150252
Average	1229900	0.02036692	25984.94127	1.57341E+12	0.00043005
r (xy)=0.972391538	The connection is very strong, direct				
Republic of Tatarstan (economic indicators)					
Year	x (GRP)	y (Investments)	x*y	x ²	y ²
2009	885100	277600	2.45704E+11	7.83402E+11	77061760000
2010	1001600	328900	3.29426E+11	1.0032E+12	1.08175E+11
2011	1305900	393600	5.14002E+11	1.70537E+12	1.54921E+11
2012	1436900	470800	6.76493E+11	2.06468E+12	2.21653E+11
2013	1520000	520200	7.90704E+11	2.3104E+12	2.70608E+11
Total	6149500	1991100	2.55633E+12	7.86706E+12	8.32419E+11
Average	122990	398220	5.11266E+11	1.57341E+12	1.66484E+11
r (xy)=0.980834748	The connection is very strong, direct				
Republic of Tatarstan (economic indicators)					
Year	x (GRP)	y (profits)*	x*y	x ²	y ²
2009	885100	140637	1.24478E+11	7.83402E+11	19778765769
2010	1001600	176158.53	1.7644E+11	1.0032E+12	31031827692
2011	1305900	191505.55	2.50087E+11	1.70537E+12	36674375681
2012	1436900	210724.72	3.0279E+11	2.06468E+12	44404907619
2013	1520000	208335.2	3.1667E+11	2.3104E+12	43403555559
Total	6149500	927361	1.17047E+12	7.86706E+12	1.75293E+11
Average	1229900	185472.2	2.34093E+11	1.57341E+12	35058686464
y (profits)* - Profits of the consolidated budget of the subject, million RUB					
r (xy)=0.94535419	The connection is very strong, direct				
Republic of Tatarstan (economic indicators)					
Year	x (GRP)	y (expenses)*	x*y	x ²	y ²
2009	885100	152700.23	1.35155E+11	7.83402E+11	23317360242
2010	1001600	193850.07	1.9416E+11	1.0032E+12	37577849639
2011	1305900	206824.26	2.70092E+11	1.70537E+12	42776274525
2012	1436900	206000.32	2.96002E+11	2.06468E+12	42436131840
2013	1520000	209554.49	3.18523E+11	2.3104E+12	43913084279
Total	6149500	968929.37	1.21393E+12	7.86706E+12	1.90021E+11
Average	1229900	193785.874	2.42786E+11	1.57341E+12	38004140105
y (expenses)* - Expenses of the consolidated budget of the subject, million RUB					
r (xy)=0.849760117	The connection is strong, direct				

GRP: Gross regional product

agriculture, hunting and forestry, and mineral production that are cash cows and make up 27.3% of the GRP of the region. They can bring more profits than it is necessary for maintaining their growth

that can be used for financing branches included in "top-liners" and "problem children." The latter include hotels and restaurants, state management and provision of military safety, social insurance;

Table 5: SWOT - Analysis through the example of the Republic of Tatarstan

Strengths (cash cows)			Weaknesses (problem children)		
Sector of GRP		Evaluation	Sector of GRP		Evaluation
S1	Mineral production	3	W1	Operations with real estate	2
S2	Agriculture, hunting, and forestry	2	W2	Education	1
Opportunities (top-liners)			Threats (dogs)		
Sector of GRP		Evaluation	Sector of GRP		Evaluation
O1	Construction	2	T1	Transport and communication	2
O2	Manufacturing	3	T2	Financial activity	1

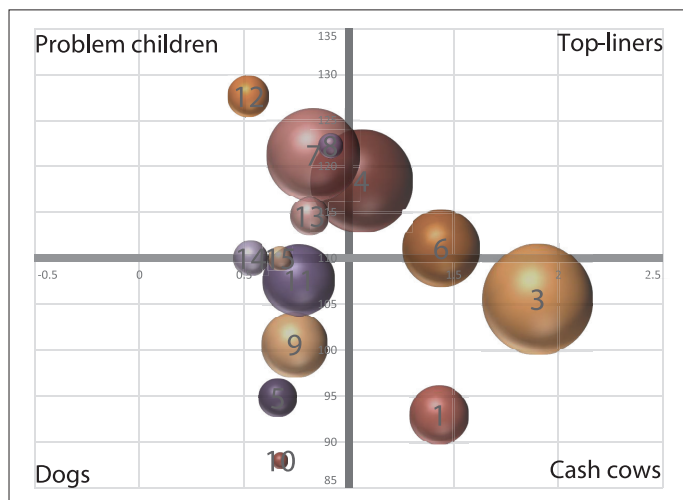
GRP: Gross regional product, SWOT: Strengths, weaknesses opportunities, threats

Table 6: SWOT - Analysis with correlation specification

		Strengths (S)		Weaknesses (W)	
		S1	S2	W1	W2
Opportunities (O)	O1	5	4	4	3
	O2	6	5	5	4
Threats (T)	T1	5	4	4	3
	T2	4	3	3	2

SWOT: Strengths, weaknesses opportunities, threats

Figure 1: Matrix related to allocating the structure of gross regional product from the standpoint of perceptiveness and competitive demand of sectors of the Republic of Tatarstan compared to the Russian Federation



wholesaling and retailing, repair of cars, motorcycles, household goods and personal appliances; education. They account for 21.5% of the region GRP.

The branches that are unpromising for the Republic of Tatarstan include financial activity, operations with real estate, rent and services provision; transportation and communications, production and allocation of energy, gas and water; public health service and provision of social services. They account for as much as 22.5% of the region GRP and are in the unfavorable state according to the expenses without having opportunities to grow. It requires complete restructuring. In the Republic of Tatarstan financially dependent (problem children) branches include wholesaling and retailing, operations with real estate, state management and provision of military safety, social insurance; public health service and transportation and communications. They account for 37.9% of the total GRP of the region and require considerable financing for

their development and transfer to the “top-liners” category. The most unprofitable branches of this republic (dogs) include production and allocation of energy, gas and water, financial activity, mineral production. They account for 5.9% of the total GRP. These branches require global changes in their structure, because at this moment they do not have any opportunities for growth.

Based on the received results, we can claim that the Republic of Tatarstan is an independent region with the high development potential.

The calculation for other regions is made in a similar way. As a whole, based on the received results of the research, for example, the Chuvash Republic has the development potential mainly due to its agriculture. Production and allocation of energy, gas and water can be more actively used in order to increase the market share of the problem branches.

Table 4 shows the example of recognizing correlation coefficients in order to research the power of connections between the indicators related to the regions competitiveness particularly according to social and economic evaluation indicators.

We will complete indicating the sensitivity of regions marketing on the basis of cognitive tools of diagnosis with the aid of SWOT analysis. It will be additionally specified due to calculating correlation coefficients for diagnosing the power of connections between the indicators related to regions competitiveness (Table 5).

Based on the received results, we confirmed indicating the sensitivity of the territories marketing due to using the correlation analysis (Table 6).

4. CONCLUSION

We made an attempt to demonstrate the impact of methodology related to indicating the sensitivity of territories marketing on total indicators of the territories marketing (Kegley and Wittkopf, 1999). It is possible to say with certainty that one more mechanism to solve problems related to evaluating territorial competitiveness appears on the basis of cognitive tools of diagnosis (Levitt, 1983). One of the distinguishable conditions of diagnosis of the total competitiveness of regions’ economy is the integration of tools and technologies related to modeling the diagnostic potential of regions. We think it to be only the initial phase of the research. In the future we assume to continue searching for tools of the sensitivity

of regions marketing within the forecasting and analytical center of the Plekhanov Russian University of Economics.

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