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SYSTEM OF INDICATORS FOR ECONOMIC ASSESSMENT OF SUSTAINABLE REGIONAL GROWTH

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Abstract

Economic, social and environmental dimensions of the regional growth are relatively isolated, and the lack of necessary tools makes it difficult to evaluate their interdependence. These tools are needed to evaluate the overall stability and connectedness of the system and facilitate effective and prioritized decision making aimed at a stable growth. The authors think that the sustainability concept can be a foundation to develop such tools, including a system of performance targets and regional stability evaluation techniques. A region as an isolated system must aim at a sustainable growth. It should be noted that almost all regions adopted their own economic growth strategies. These strategies must be amended with the three dimensions of sustainability "environment-society-economy", each having a purpose-oriented program and closely monitored dynamics including the overall sustainability change. Administrative, economic, social levers and instruments of managerial influence are poorly linked, do not take into account the specifics of territorial development, do not have a systemic basis. The formation of an economically effective system of sustainable development of Russian regions should provide a basis for territorial development. Thus, there is a need to develop an effective methodology for assessing the sustainable development of the Russian regions, taking into account their features and development vectors, which determines the relevance of the research.

Keywords: Sustainable regional growth, business development, assessment method, economic, social and ecological environment.

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1. Introduction

A Russian region is a complex multilevel structure having its own internal dynamic and being a significant part of national economy. Regions tend to have a wide variety of connections, combinations of economic, social, environmental, informational and other elements, as well as constant circulation of financial, material and information flows.

2. Problem Statement

Constant changes in Russian national and regional economy result in a growing uncertainty of the sustainable regional and national growth. Extant methods of sustainable regional growth assessment are not efficient due to the following reasons:

1. Regional idiosyncrasies make it impossible to use effective foreign methods of sustainability assessment (Kaplan & Norton, 1996);

2. There is no common system of selecting sustainability indicators, which are unique for each region (Marcela, Michaela, & Ondrej, 2011);

3. Subjective evaluation prevails in the process of assessment (Ermakova, Fokina, Tyufiakova, Rogacheva, & Tyurina, 2016);

4. There is no objective and convenient system of identifying the effect of each indicator by the overall result of assessment (Kireenko & Orlova, 2016);

5. Results are interpreted ambiguously (Stankeviciene, Sviderskė, & Miečinskienė, 2014);

6. It is difficult to make resulting decisions (Tasaki, Kameyama, Seiji, Moriguchi, & Hideo, 2010);

7. Implementation of resulting measures at the regional level is labor-consuming and much hindered by various factors (Pittman, Wilhelm, 2007).

Considering the main requirements for a sustainable regional growth assessment method the authors have created a unique approach to quantitative assessment of the sustainable regional growth. The given approach is based on using an aggregate measure which reflects the extent of regional growth sustainability and its dynamics. The approach is exclusively effective for managerial purposes.

3. Research Questions

1. Regional idiosyncrasies make it impossible to use effective foreign methods of sustainability assessment;

2. There is no common system of selecting sustainability indicators, which are unique for each region;

3. Subjective evaluation prevails in the process of assessment;

4. There is no objective and convenient system of identifying the effect of each indicator on the overall result of assessment;

5. Results are interpreted ambiguously;

6. It is difficult to make resulting decisions;

7. Implementation of resulting measures at the regional level is labor-consuming and heavily hindered by various factors.

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4. Purpose of the Study

The purpose of the study consists in making the analysis of the level of the regional depression.

5. Research Methods

The object of analysis is Tomsk region of the Russian Federation. Consequently, the authors will apply their method by the evidence derived from the object.

According to the authors' method, regional growth sustainability assessment goes through four steps:

Step 1. Selecting the indicators of regional growth sustainability.

The following classification is based on 60 indicators having most effect sustainable regional growth:

- 12 external macroeconomic indicators
- 27 internal economic indicators
- 17 internal social indicators
- 4 internal environmental indicators

Further on only the indicators having most effect on the sustainable regional growth are filtered out. The method suggests selecting the indicators using a multiple correlation method. It should be noted that the more indicators are analyzed the more precise the result of the correlation is. To conduct a correlation analysis, a number of software products are used (Dolgikh, Zhdanova, & Bannova, 2015). The authors will use OriginPro 2015 (Nemirova & Tyurina, 2015). Thus, the authors will conduct a multiple correlation analysis of the 60 chosen indicators over the period of 2006-2016.

The resulting table shows multiple correlations, a fragment of which one can see in Fig. 1.

Stroka1, Stroka2, KOEF_COR

0,1,-0.152208	1,2,-0.160414	2,3,0.974854	3,4,-0.732175	4,5,0.283625	5,6,-0.635169	6,7,-0.298440
0,2,0.996565	1,3,-0.102212	2,4,-0.756319	3,5,0.113320	4,6,-0.525497	5,7,0.613560	6,8,-0.185364
0,3,0.982482	1,4,0.191604	2,5,0.038763	3,6,0.374097	4,7,-0.344153	5,8,0.632448	6,9,0.439818
0,4,-0.711189	1,5,0.777481	2,6,0.532185	3,7,0.740210	4,8,-0.354033	5,9,0.090992	6,10,0.590482
0,5,0.075812	1,6,-0.598440	2,7,0.632010	3,8,0.796448	4,9,-0.643194	5,10,-0.763079	6,11,-0.593389
0,6,0.490809	1,7,0.423184	2,8,0.713568	3,9,0.963706	4,10,-0.553675	5,11,0.195760	6,12,0.541413
0,7,0.667914	1,8,0.397716	2,9,0.971990	3,10,0.126398	4,11,0.583645	5,12,-0.476472	6,13,0.415372
0,8,0.747221	1,9,-0.198745	2,10,0.184525	3,11,-0.820534	4,12,-0.193596	5,13,0.140217	6,14,0.508557
0,9,0.981498	1,10,-0.351639	2,11,-0.860303	3,12,-0.249908	4,13,-0.691984	5,14,0.116525	6,15,0.476889
0,10,0.136604	1,11,0.429524	2,12,-0.125827	3,13,0.989990	4,14,-0.592399	5,15,0.025985	6,16,0.364546
0,11,-0.863140	1,12,-0.274536	2,13,0.988094	3,14,0.938577	4,15,-0.758121	5,16,-0.038187	6,17,-0.337421
0,12,-0.188318	1,13,-0.097901	2,14,0.972309	3,15,0.980782	4,16,-0.892885	5,17,0.325767	6,18,0.486427
0,13,0.995737	1,14,-0.140062	2,15,0.985050	3,16,0.905098	4,17,0.830976	5,18,0.083844	6,19,0.118875
0,14,0.980879	1,15,-0.152421	2,16,0.881130	3,17,-0.509078	4,18,-0.658781	5,19,0.077234	6,20,0.546409
0,15,0.986983	1,16,-0.108215	2,17,-0.530602	3,18,0.968197	4,19,-0.632701	5,20,-0.058347	6,21,0.326381
0,16,0.865587	1,17,0.269052	2,18,0.985302	3,19,0.901776	4,20,-0.708184	5,21,0.160634	6,22,0.409888
0,17,-0.486125	1,18,-0.183571	2,19,0.816113	3,20,0.937906	4,21,-0.710348	5,22,0.172413	6,23,0.632193
0,18,0.993011	1,19,-0.154346	2,20,0.962983	3,21,0.989852	4,22,-0.683037	5,23,0.046972	6,24,-0.165429
0,19,0.838128	1,20,-0.229965	2,21,0.964041	3,22,0.986019	4,23,-0.595078	5,24,0.331834	6,25,-0.241569
0,20,0.966147	1,21,-0.038358	2,22,0.984988	3,23,0.843880	4,24,-0.475992	5,25,0.360425	6,26,-0.395380
0,21,0.972185	1,22,-0.081603	2,23,0.928121	3,24,0.636694	4,25,-0.178685	5,26,0.160699	6,27,-0.379919
0,22,0.992015	1,23,-0.195491	2,24,0.562220	3,25,0.427576	4,26,-0.141762	5,27,-0.193123	6,28,0.450421
0,23,0.920596	1,24,0.252916	2,25,0.383488	3,26,0.054821	4,27,0.113502	5,28,-0.000652	6,29,0.559305
0,24,0.572377	1,25,0.341316	2,26,-0.033660	3,27,-0.583038	4,28,-0.790543	5,29,-0.147051	6,30,0.073711
0,25,0.410544	1,26,0.183931	2,27,-0.605976	3,28,0.949364	4,29,-0.767590	5,30,0.271387	6,31,-0.504205

Figure 01. A fragment of correlation study

As the result of the correlation study, the authors need to choose only the most influential indicators because it is impossible to take into consideration all the conditions and circumstances. In table 01 one can see the quantitative criteria of correlation.

Table 01. Quantitative criteria of correlation

Correlation value	Correlation degree
< ±0.3	nil
±0.3 - ±0.5	weak
±0.5 - ±0.7	moderate
±0.7 - ±1.0	strong

Based on these criteria, the authors selected the indicators of the sustainable growth with higher correlation values - ±0.7 to ±1.0. As the result, 20 indicators were filtered out and grouped into four categories:

- 6 economic indicators;
- 5 social indicators;
- 4 environmental indicators;
- 5 external effect indicators.

On completing the first step of assessment, the authors got the set of sustainable growth indicators for Tomsk region.

Step 2. Assigning weights to indicators

Further on the authors need to consider the significance of each indicator in the groups. To tackle this problem let us suggest using weights reflecting the significance of each indicator for the overall result of the assessment. To determine the weights the authors will use the analytic hierarchy process which implies the procedure of priority establishment based on subjective judgments of experts.

Taking into consideration the importance of assessment, the authors constructed pairwise comparison matrixes for environmental, economic and social dimensions of the sustainable growth.

The received data provided for the choice of local priorities which reflect the relative impact of a number of elements on the upper row element. For that purpose, the authors identified eigenvectors of each matrix and having defined the weights of each factor, the authors summed up the result to one (1.0) thus forming the priority vector.

The authors constructed the normalized pairwise comparison matrixes for economic, social and environmental sustainability (tables 5, 6, 7, 8, 9, 10).

Judgment consistency is defined by a consistency index and a consistency ratio by the following formulae:

$$\mathrm{UO} = \mathrm{UC} = \frac{\lambda_{\max} - n}{n - 1} \qquad (1)$$

$$\mathrm{OO} = \mathrm{OC} = \frac{\mathrm{UO}}{\mathrm{M(uo)}} \qquad (2)$$

M (uo) is the average value of the consistency index for a randomly constructed pairwise comparison matrix based on experimental data. The value is tabular depending on the dimension of the matrix (Table 2).

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Table 02. Matrix dimension.

N	1	2	3	4	5	6	7	8	9	10	11
M(uo)	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49	1.51

The accepted value is taken as OO ≤ 10%. If OO > 10% for a matrix, it shows a significant paralogism of an expert filling in the matrix so the expert will be suggested to review the data in order to enhance the consistency.

According to this model the authors will construct normalized pairwise comparison matrixes for economic, social and environmental sustainability and external effects. The authors will exemplify the stepwise process with indicators of economic sustainability.

The correlation study thus defined the following economic indicators:

A. Gross regional product
B. Revenues of the consolidated regional budget
C. Tax revenues
D. Number of enterprises in the region
E. Capital investment
F. Volume of shipped goods of local production (mining)

AHP algorithm

1. Let us find the eigenvectors W_i relative the last level hierarchy. To do that, let us construct pairwise comparison matrixes [E_i] and calculate their maximum eigenvalues (to evaluate judgment consistency) and main eigenvectors (priorities), table 4. Comparisons under AHP are done using the scale of relative importance (Table 3). This scale has nine degrees of intensity chosen on the basis of experimentally determined psychophysical traits of a person who does the comparison.

Table 03. Relative importance scale

Intensity of importance	Definition
1	Equal importance
2	A little more important
3	Somewhat more important
4	Importance higher than average
5	Much more important
6	Strong importance
7	Very much more important
8	Very, very much more important
9	Absolutely more important

Values of this scale are used to show how much more important and dominating one element is over another.

Table 04. Pairwise comparison matrix

	A	B	C	D	E	F
A	1	2	3	1	2	3
B	1/2	1	2	3	1	2
C	1/3	½	1	2	3	1
D	1	1/3	½	1	2	3
E	½	1	1/3	1/2	1	2
F	1/3	½	1	1/3	½	1

Eigenvector: W= (0.271; 0.213; 0.163; 0.157; 0.113; 0.0825)

In the same manner, let us process the pairwise comparison matrixes for upper rows. The matrixes are constructed to determine the values of importance intensity for elements of a certain hierarchical level relative the upper one.

$$\lambda max = 6.6$$

$$\mathrm{UC} = \frac{6.6 - 6}{6 - 1} = 0.12$$

$$\mathrm{OC} = 0.12/1.24 = 0.096$$

3. As the next step, let us define the eigenvectors. The authors will identify the priority vectors of alternatives W_E^A over elements E_j^i at all levels of hierarchy. Eigenvectors are calculated from lower rows to the upper ones taking into account specific relations between the elements on different levels. Calculation implies multiplication of corresponding vectors and matrixes (Table 5).

Table 05. Normalized pairwise comparison matrix for economic sustainability (Economic sustainability index).

	A	B	C	D	E	F	Eigenvector	Normalized values of eigenvector **(weight)**
A	0.238	0.339	0.242	0.346	0.298	0.329	0.271	0.2912895
B	0.19	0.209	0.231	0.221	0.216	0.167	0.213	0.2065425
C	0.137	0.122	0.198	0.134	0.189	0.213	0.163	0.1553545
D	0.175	0.157	0.125	0.152	0.116	0.132	0.157	0.149103
E	0.163	0.0862	0.131	0.101	0.0902	0.0854	0.113	0.1169817
F	0.0969	0.087	0.0734	0.0461	0.0902	0.0736	0.0825	0.0802574
Σ								1
λ_{max}								**6.6**
Consistency index								**0.12**
Random consistency of the matrix								**0.096**
Relative consistency of the matrix								**9.6%**

The maximum value of an element in the matrix is 0.291. Thus, the most intensively important parameter is “A” – Gross regional product.

Let us conduct the same analysis for social and environmental sustainability indicators, as well as for external effects.

Table 06. Normalized pairwise comparison matrix for social sustainability (Social sustainability index).

	G	H	I	J	K	Eigenvector	Normalized values of eigenvector **(weight)**
G	0.272	0.304	0.221	0.264	0.324	0.333	0.29353
H	0.397	0.203	0.259	0.256	0.265	0.204	0.267767
I	0.162	0.203	0.193	0.14	0.191	0.259	0.177373
J	0.0949	0.145	0.172	0.192	0.136	0.136	0.1410897
K	0.0736	0.145	0.155	0.148	0.0831	0.068	0.1200126
Σ							**1**
λ_{max}							**5.4**
Consistency index							**0.1**
Random consistency of the matrix							**0.089**
Relative consistency of the matrix							**8.9%**

The maximum value of an element in the matrix is 0.267. Thus the most intensively important parameter will be “G” - Average monthly accrued wages.

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Table 07. Normalized pairwise comparison matrix for environmental sustainability (Environmental sustainability index).

	L	M	N	O	Eigenvector	Normalized values of eigenvector **(weight)**
L	0.426	0.35	0.368	0.482	0.375	0.404756
M	0.194	0.25	0.199	0.246	0.205	0.215288
N	0.231	0.264	0.282	0.177	0.256	0.241965
O	0.149	0.136	0.151	0.0946	0.164	0.1379254
Σ						**1**
λ_{max}						**4.25**
Consistency index						**0.083**
Random consistency of the matrix						**0.092**
Relative consistency of the matrix						**9.2%**

The maximum value of an element in the matrix is 0.405. Thus the most intensively important parameter will be "L" - Capital investment in environmental protection.

Table 08. Normalized pairwise comparison matrix for external effects sustainability (External effects sustainability index).

	P	Q	R	S	T	Eigenvector	Normalized values of eigenvector **(weight)**
P	0.333	0.373	0.352	0.286	0.404	0.396	0.3523638
Q	0.278	0.241	0.209	0.2	0.233	0.246	0.246932
R	0.111	0.133	0.143	0.214	0.123	0.153	0.1500202
S	0.167	0.133	0.187	0.157	0.118	0.0683	0.1343501
T	0.111	0.12	0.11	0.143	0.123	0.137	0.1169239
Σ							**1**
λ_{max}							**5.1**
Consistency index							**0.025**
Random consistency of the matrix							**0.022**
Relative consistency of the matrix							**2.2%**

The maximum value of an element in the matrix is 0.352. Thus the most intensively important parameter will be "P" - Gross domestic product.

Table 09. Normalized pairwise comparison matrix for sustainable regional growth (Regional growth sustainability index).

	Economic sustainability	Social sustainability	Environmental sustainability	External effects	Eigenvector	Normalized values of eigenvector **(weight)**
Economic sustainability	0.541	0.333	0.333	0.125	0.442	0.380534
Social sustainability	0.295	0.333	0.333	0.125	0.388	0.305241
Environmental sustainability	0.164	0.333	0.333	0.125	0.16	0.206302
External effects	0.125	0.1	0.1	0.125	0.1	0.107923
Σ						**1**
λ_{max}						**4**
Consistency index						**0.0**
Random consistency of the matrix						**0.0**
Relative consistency of the matrix						**0%**

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The maximum value of an element in the matrix is 0.394. Thus, the most intensively important parameter is *Economic sustainability*.

The final step is to assign weights to each element necessary for sustainable growth assessment.

Step 3 - Unifying the data into a system of common measurements.

The step implies transformation of the initial indicator values from an absolute form to ratios. That means that each indicator becomes a coefficient reflecting the change of the given indicator in time (Balandina, Bannova, & Ryumina, 2016). Table 10 contains the values of each coefficient calculated by formula 1.

Table 10. Relative indicators of sustainable growth (Tomsk region).

№	Indicators	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Economic indicators												
A	Gross regional product (+)	1.183	1.136	1.160	0.988	1.158	1,173	1,113	1,084	1,063	1,107	1,056
B	Consolidated regional budget revenues(+)	1.284	1.136	1.276	1.048	1.092	1,220	1,003	1,021	1,094	1,046	1,094
C	Tax revenues (+)	1.208	0.974	1.312	0.804	1.324	1,353	1,190	1,026	1,063	1,083	0,945
D	Number of enterprises in the region (+)	1.028	1.004	0.995	0.997	0.987	1,020	1,029	1,023	1,012	1,001	0,98
E	Capital investment (+)	2.043	1.944	1.200	0.869	1.039	1,300	1,073	0,949	1,064	0,960	0,968
F	Volume of shipped goods of local production (mining) (+)	0.991	1.072	1.119	0.985	1.248	1,216	1,082	0,992	1,086	1,065	0,926
Social indicators												
G	Average monthly accrued wages (+)	1.201	1.191	1.225	1.094	1.109	1,119	1,114	1,116	1,075	1,062	1,042
H	Average monthly income per capita (+)	1.231	1.201	1.134	1.027	1.088	1,089	1,098	1,133	1,055	1,154	0,946
I	Population (+)	0.999	1.002	1.003	1.002	1.008	1,009	1,006	1,006	1,004	1,002	1,002
J	Consumer spending per capita (+)	1.205	1.158	1.164	1.011	1.082	1,146	1,048	1,132	1,048	1,076	0,98
K	Minimum subsistence level (+)	1.112	1.156	1.144	1.181	1.076	1,113	1,021	1,138	1,109	1,229	1,012

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Environmental indicators												
L	Capital investment in environmental protection (+)	2.218	1.715	1.502	1.129	0.430	1,876	1,052	1,805	0,952	1,484	1,16
M	Production and consumption wastes (-)	1.086	1.049	1.030	0.849	0.955	1,005	1,245	0,743	0,835	1,071	1,021
N	Forest restoration (+)	0.959	0.872	0.811	1.133	1.515	1,796	0,949	1,099	0,989	0,901	0,898
O	Recycling and sterilization of production and consumption wastes (+)	1.007	0.934	0.999	0.961	1.119	0,935	0,952	1,138	0,883	1,013	0,915
External effect indicators												
P	Gross domestic product (+)	1.246	1.235	1.242	0.940	1.193	1,289	1,121	1,061	1,098	1,037	1,065
Q	Consolidated budget revenues (+)	1.239	1.258	1.197	0.850	1.179	1,301	1,124	1,043	1,095	1,006	1,047
R	Average annual value of US Dollar (+)	0.961	0.941	0.972	1.280	0.954	0,968	1,057	1,024	1,193	1,598	1,105
S	Average annual value of Euro (+)	0.969	1.026	1.041	1.213	0.911	1,015	0,977	1,058	1,194	1,336	1,101
T	Annual oil production in the Russian Federation (+)	1.022	1.022	0.994	1.013	1.023	1,012	1,014	1,006	1,008	1,015	1,025

Step 4– Calculating the sustainable regional growth index

Thus, having calculated the weights the authors can construct the functions reflecting the correlation of indicators to find the indices of economic, social, environmental and external effect sustainability (Drobyshevsky, Lugovoy, Astafyeva, Polevoy, Kozlovskaya, Trunin, Lederman, 2005). The resulting models are as follows:

$$K_{ec.sust.} = 0.29A + 0.21B + 0.16C + 0.15D + 0.11E + 0.08F$$

$$K_{soc.sust.} = 0.29G + 0.27H + 0.18I + 0.14J + 0.12K$$

$$K_{envir.sust.} = 0.4L - 0.22M - 0.24N - 0.14O$$

$$K_{ext.eff.} = 0.35P + 0.25Q + 0.15R + 0.13S + 0.12T$$

$$\boldsymbol{K_{SUST.GR.} = 0.38K_{ec.sust.} + 0.3K_{soc.sust.} + 0.,21K_{envir.sus.} - 0.11K_{ext.eff.}}$$

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Let us use the data from Table 10 in the above given models taking into consideration weights and qualitative values of indicators. Table 11 shows the assessment of the sustainable regional growth for Tomsk region.

Table 11. The sustainable regional growth index for Tomsk region over the period 2006-2016.

Indicators	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Economic indicator	1.26	1.17	1.19	0.96	1.14	1.21	1.08	1.03	1.06	1.05	1.01
Social indicator	1.16	1.15	1.14	1.06	1.08	1.09	1.07	1.11	1.06	1.10	1
Environmental indicator	1.03	0.83	0.76	0.63	0.53	0.93	0.70	1.03	0.57	0.75	0.58
External effect indicator	1.14	1.14	1.13	1.01	1.10	1.17	1.08	1.04	1.11	1.15	1.07
Sustainable growth index	**0.92**	**0.84**	**0.83**	**0.7**	**0.67**	**0.85**	**0.76**	**0.82**	**0.72**	**0.76**	**0.69**

The resulting values are demonstrated on a graph (Fig. 02) illustrating the dynamics of regional growth sustainability.

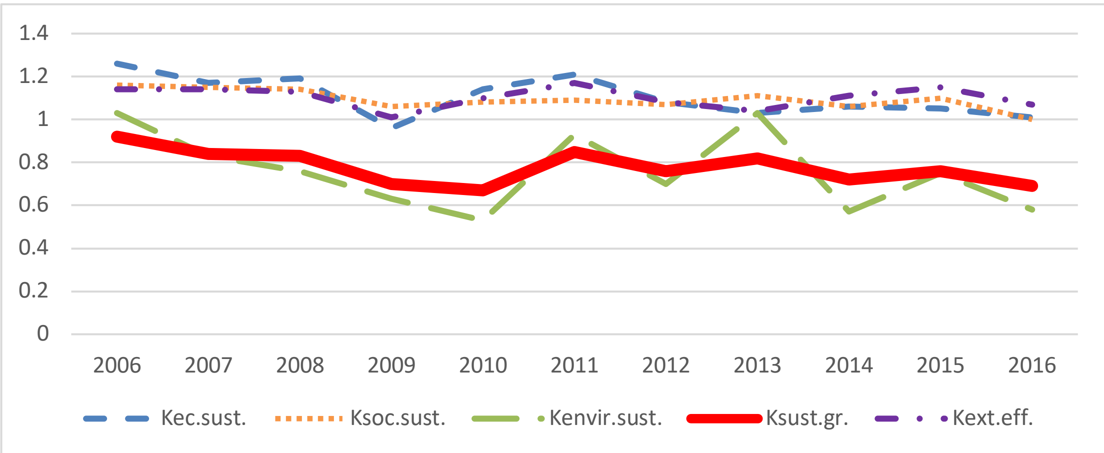

Figure 02. Sustainable growth of Tomsk region over 2006-2016

6. Findings

As seen from table 11, economic and social indicators have a value of >1 which is indicative of stable sustainability of the systems. But the most significant adverse effect on the overall result of sustainable growth index for Tomsk region was produced by the environmental indicator. Maintaining relatively stable economic growth in the cities very often comes at the expense of natural and urban environment. The suggested criteria of sustainable development bring one to the conclusion that for the recent decade Tomsk region has been on the brink between stable and dynamic levels of sustainability. The sustainability concept states that the system becomes sustainable when it achieves sustainability in three dimensions: economic, social and environmental. Thus, over the studied period, Tomsk region

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demonstrated relative sustainability. Further on, the authors will describe the theoretical approach to sustainable regional growth assessment, Fig. 3.

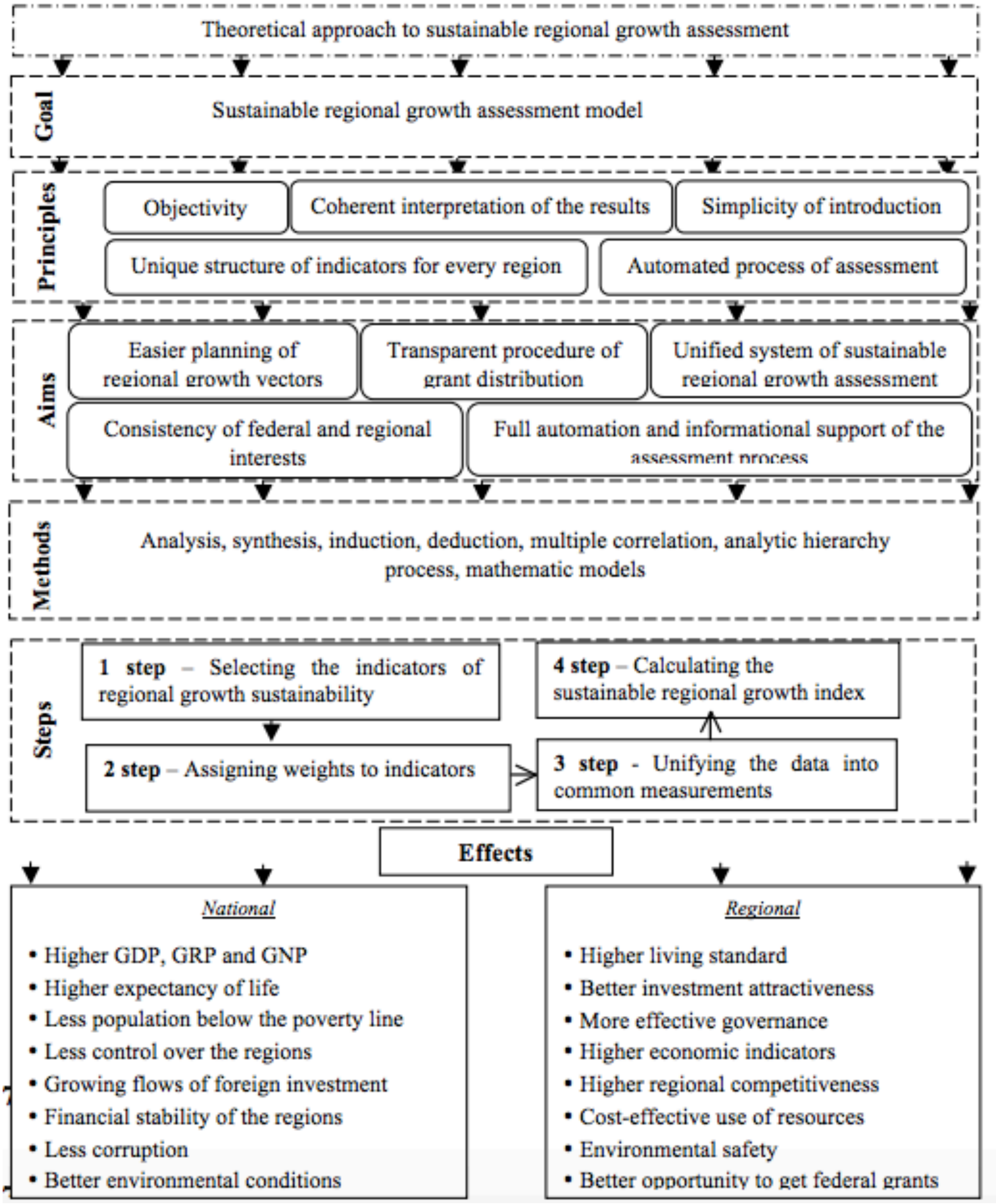

Figure 03. Theoretical approach to sustainable regional growth assessment

7. Conclusion

Economic, social and environmental dimensions of regional growth are relatively isolated, and the lack of necessary tools makes it difficult to evaluate their interdependence. These tools need to evaluate the overall stability and connectedness of the system and facilitate effective and prioritized decision making aimed at a stable growth. The authors think that the sustainability concept can be a foundation to develop such tools, including a system of performance targets and regional stability evaluation techniques.

A region as an isolated system must aim at a sustainable growth. It should be noted that almost all regions adopted their own economic growth strategies. These strategies must be amended with the three dimensions of sustainability "environment-society-economy" each having a purpose-oriented program and closely monitored dynamics including the overall sustainability change

As a result of the research, let us suggest a theoretical approach to assess a sustainable regional growth based on the following **principles**:

1. Unique structure of indicators for every region. The authors maintain the idea that every region of Russia has unique economy, society and environment and there can be no common system of indicators. Regionally important indicators need to be identified and used in the model of sustainable growth assessment.
2. Maximum objectivity at each step of assessment. When selection of indicators is done using a multiple correlation and an analytic hierarchy process, it minimizes subjectivity and bias and provides for objective assessment of the sustainable growth.
3. Automation and labor-efficiency of the assessment. Each step of assessment is automated using the following software: "Correlation of corporate indicators", Wolfram|Alpha: Computational Knowledge Engine, Microsoft Office – Excel.
4. Coherent interpretation of the results. The assessment result allows coming to consistent and uncontroversial conclusions.
5. Simple introduction of the method into the system of regional governance. The method presents in itself a generalized assessment to be used in addition to the operating regional monitoring system and requires no additional procedures and purchases.

A theoretical approach to sustainable regional growth assessment is illustrated in a chart.

Strategy and assessment of the sustainable regional growth must be codified in orders and decrees and the procedure is to be assigned to the regional administration, namely the department in charge of strategic planning.

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