

## Assessing the level of the social-economic development of million-plus cities as the degree to which the administrative resource is realized

Olga Evgenevna Malykh, Inga Kamilevna Polyanskaya, Alfira Farvazovna Kayumova, Alsu Fanzilevna Shamsutdinova

Bashkir State University, 32 Zaki Validi str., Ufa, 450076, Republic of Bashkortostan, Russia

**Abstract.** Estimation of standards of socioeconomic development at million-populated cities as a degree of realization of managerial resource. The article is dedicated to the problem of evaluating socio-economic development of Russian cities with a million-plus population. Authors besides traditional ways of economic measuring use new approaches suggested by economics. It is proved that it is impossible to provide comprehensive development of a territory without conscious choice of priorities at development, ways and results of their realization. In the article the authors examine the effectiveness of strategic development as a result of management reserves' realization at the same time suggesting new interpretation of economic category "management reserves". It is stated that the existence and quality of strategic programs in cities with a million-plus population on the one hand promotes socio-economic growth and on the other hand acts as an assessment to local control's actions.

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### Introduction

There has already long been no need to prove that economics and politics are interrelated and interdependent. We might want to define the characteristics of these processes more accurately [1].

Strategic planning, as an instrument for the state regulation of the economy, is becoming increasingly significant under the present-day economic system [2]. However, having a strategic plan does not per se ensure a high level of social-economic development for municipal formations, at large, and million-plus cities, in particular [3].

Regarding strategic planning, we can note the dual nature of this regulation instrument. On the one hand, we cannot ensure the integrated development of a region without making an informed choice of development priorities, employing efficient implementation methods, and getting the results we need [4].

On the other hand, strategic planning can facilitate bolstering economic and political monopolism and creating various incentives for a region's residents. The dualism of norms (division into "us" and "them") indicates the impact of the administrative resource on economic competition in regions, enabling state and local self-governing authorities to shore up their economic and political positions [5].

We construe the administrative resource as an aggregate of economic and political mediums which are not owned by the economic entity but are used by it to generate profits and provide for production in the region and ensure its social-

economic development. The major economic factors for the administrative resource are financial security in the region, the size of the state sector, and the quality of interaction with the entrepreneurial community. The higher financial security, the higher one's tax potential, the more chances there are for reelecting local politicians, and the bigger the profits generated by local entrepreneurs [6]. We believe that strategic programs can be included in this list of factors. Let us examine this hypothesis through the example of the strategic planning of the development of large cities [7], including Russian ones [8], [9], [10], [11], [12], [13].

The strategic planning of cities implies attaining a certain level of their social-economic development [14]. The major aim of assessing the social-economic condition of million-plus cities is to determine the attained level of their overall development and identify the existing trends in their strategic development.

In this regard, we need to establish, first, a system of performance indicators and, second, instruments (methods) for assessing the level of the social-economic development of cities, which help arrive at an integrated judgment regarding the system assessed [15].

In scientific literature, there is a huge variety of indicator systems for assessing the level of the social-economic development of cities. Among the major projects, one should mention "Habitat", a project from a UN program on human settlements, "Urban Audit" for the EU countries, and "Urban Barometer" by "The Institute for Urban Economics"

foundation [16]. The issue of the choice of criteria (indicators) for assessing the level of the social-economic development of cities is of a discussion nature [17]. There is no indicator system ideal in all respects. Of key significance here are specific

objectives of analysis. Given the fact that in strategic plans for million-plus cities the major focus is on issues in economic development and the improvement of the quality of life, we suggest using the following indicators (Table 1).

**Table 1. A set of assessment indicators for a comparative assessment of the level of the social-economic development of million-plus cities**

N	Denotation	Indicator, measurement unit
1	$X_1$	size of population, thousand people
2	$X_2$	volume of shipped goods of one's own production, works carried out and services rendered through one's own effort, across all types of activity, million rubles
3	$X_3$	retail trade turnover, million rubles
4	$X_4$	investment in fixed capital (in actual prices), million rubles
5	$X_5$	new housing supply, thousand square meters
6	$X_6$	average monthly nominal wages, rubles
7	$X_7$	number of unemployed citizens registered in state employment agencies, persons

It should be noted that any given indicator taken individually is of no interest, since without being compared with others it just cannot express the level of the social-economic development of cities. While the best option would, possibly, be covering a maximum number of aspects of the social-economic development of cities, the practical expediency of such an option warrants limiting the indicator line-up. Therefore, there is reason to believe that a small number of indicators is made up for by each of them reflecting corresponding aspects of social-economic development [18].

The second component in the assessment toolbox is a method for assessment based on an established indicator system. There are various theoretical variants of the solution and issues in the choice of the assessment method. For instance, the methods of componential and cluster analysis help classify the assessed objects based on specific attributes. Fairly common are also expert methods and correlation analysis. The major drawback of expert methods is the subjectiveness of assessments. Stochastic (correlation) methods help establish specific patterns in the development of the objects assessed based on statistical data observed.

According to A.G. Granberg, there are three major approaches to reflecting a set of regional development level characteristics one can point up in the methodology of economic measurements, such as marking out the main indicator and fixing or regulating other substantial indicators in the form of restrictive conditions, multiple-objective optimization across several indicators as a procedure for attaining the best states of social-economic development inclusive of the compromise between target values, and constructing integrated (consolidated) social-economic indicators [19].

The last approach is the most common. Given the aim of the analysis of the outcomes of the strategic planning of million-plus cities, we find it necessary to use the third approach – the indicative method of analysis. It should be noted that the need for using integral indexes to assess the overall state of the economy was pointed out back in the late 19<sup>th</sup> – early 20<sup>th</sup> centuries by Franz Neumann-Spallart, Alfred de Foville, Armand Julin, etc. The first indicator of this kind in Russia was developed only in 1922 [20]. In general form, the integral index can be expressed as a function of indicators:

$$I = f(x_1, \dots, x_i, \dots, x_n) \quad (1)$$

where  $I$  is the value of the integral index;

$x_i$  is the standardized value of the  $i$ -th indicator ( $i=1 \dots n$ ).

This approach is associated with a number of methodological recommendations for constructing integrated indicators, which differ in the principles of choosing and co-measuring the primal and group indicators.

Among the most common methods for determining the integral index are: the method of sums (the simplest), the method of the geometric mean, the method of coefficients, the method of distances, and the method of the sum of rankings. The sum of rankings method (the ranking point-based assessment method), whose crucial merit is ensuring the maximum realization of the principle of integrity, is widely used by federal and regional authorities. For instance, there is a ranking point-based assessment methodology developed by the Council for the Study of Production Forces (SOPS). The drawback of the

sum of rankings method is the subjectiveness of assessment due to the use of weighting coefficients.

There is another method used – a method for weighting private indicators through a “radar”, or a “profile”, into one numeric indicator without weighting [21]. The “radar” (“profile”) is graphical representation of indicators selected, which is done in accordance with certain rules. According to the method, the object of study can be assessed through an integral dimensionless index – the relative square area of a profile constructed within the assessment rectangle. Furthermore, the analytical way of calculating the integral index comes down to the following formula:

$$I = (Y_1/2 + Y_2 + \dots + Y_{n-1} + Y_n/2)/(n-1) \quad (2)$$

where  $Y_i$  are the standardized values of private indicators, ( $i=1..n$ );  
 $n$  is the number of private indicators.

Private indicators are of a different physical nature and, accordingly, are different in size. We adjust for the principle of the comparative nature of assessments by introducing relative dimensionless (standardized) indicators. The standardization procedure for direct (positive) indicators (i.e., an increase in the values whereof indicates an improvement in the social-economic situation) is expressed through the following formula:

$$Y_i = \frac{X_i - X_{i\min}}{X_{i\max} - X_{i\min}} \quad (3)$$

where  $X_i$  is a private indicator that characterizes the level of the social-economic development of a million-plus city;

$X_{i\min}$ ,  $X_{i\max}$  are respectively the minimum and maximum values of the  $i$ -th private indicator among million-plus cities.

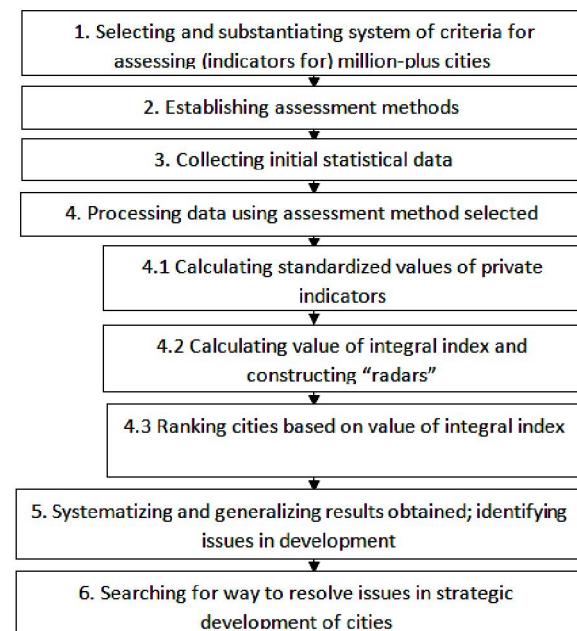
For reverse (negative) indicators, i.e. an increase in the values whereof indicates a downturn in the social-economic situation, the standardized indicator is calculated using the following formula:

$$Y_i = \frac{X_{i\max} - X_i}{X_{i\max} - X_{i\min}} \quad (4)$$

The use of the “radar” method in assessing the level of the social-economic development of million-plus cities enables us to obtain objective results, since there is no need to use weighting

coefficients, which are normally based on expert assessments.

Thus, the general algorithm for assessing the level of the social-economic development of million-plus cities can be expressed schematically in the following way:



**Figure 1. An algorithm for assessing the development level of million-plus cities**

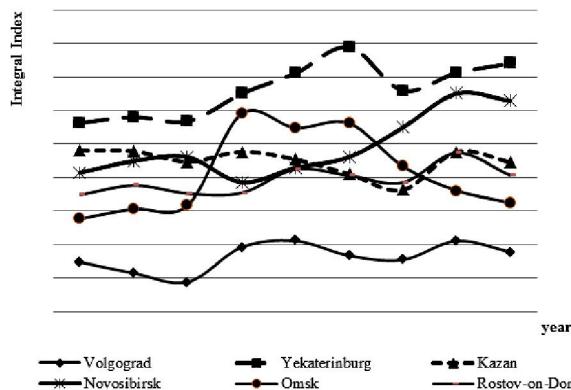
Our comparative assessment of the level of the social-economic development of million-plus cities covers the period of 2002-2010 and is based on statistical data provided by the Federal State Statistics Service of the Russian Federation [22]. In the established indicator system (Table 1), only one indicator, the one for the number of unemployed citizens registered in state employment agencies ( $X_7$ ), is negative – therefore, to calculate standardized values we use the formula (4). And for the rest of the indicators it is going to be the formula (3).

**Table 2. Integral index calculation results**

N	City	2002	2003	2004	2005	2006	2007	2008	2009	2010
1	Volgograd	0.15	0.11	0.09	0.19	0.21	0.17	0.15	0.21	0.18
2	Yekaterinburg	0.56	0.58	0.57	0.65	0.71	0.79	0.66	0.71	0.74
3	Kazan	0.48	0.48	0.45	0.48	0.45	0.41	0.36	0.48	0.45
4	Nizhny Novgorod	0.32	0.34	0.35	0.34	0.37	0.42	0.38	0.48	0.38
5	Novosibirsk	0.41	0.45	0.46	0.39	0.43	0.46	0.55	0.65	0.63
6	Omsk	0.28	0.31	0.32	0.39	0.35	0.36	0.43	0.36	0.32
7	Perm	0.60	0.60	0.51	0.56	0.53	0.52	0.44	0.43	0.41
8	Rostov-on-Don	0.35	0.38	0.35	0.35	0.42	0.41	0.38	0.47	0.41
9	Samara	0.51	0.47	0.43	0.42	0.36	0.36	0.36	0.38	0.40
10	Ufa	0.45	0.41	0.50	0.54	0.53	0.54	0.59	0.47	0.39
11	Chelyabinsk	0.39	0.38	0.38	0.35	0.41	0.39	0.43	0.30	0.31

The calculated integral indexes for the period of 2002-2010, provided in Table 2, indicate that cities with the maximum and minimum values of

the integral index are the same. The leaders are Novosibirsk, Yekaterinburg, and Kazan. The cities with the minimum values of the summarized indicator are Volgograd and Nizhny Novgorod. Note that the integral index can take values from 0 to 1.



**Figure 2. The dynamics of the integral index for cities with strategic plans**

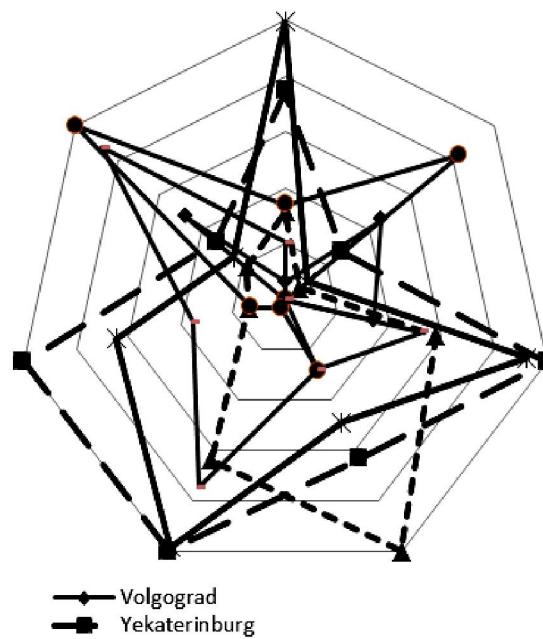
The integral index for million-plus cities that have strategic plans is characterized by positive dynamics, except for Omsk and Kazan. Novosibirsk and Yekaterinburg stand out in a special way – they are exhibiting a major increase in the integral index. Such a trend is due to the better practice of developing and implementing the strategic plan.

The negative dynamics of the integral index for Omsk starting in the year 2005 is associated with, first, the reduction of the volumes of new housing supply ( $X_5$ ) from 595.2 to 350.2 thousand sq m in 2010 and, second, an increase in the number of unemployed citizens ( $X_7$ ) from 2453.0 to 3774.0 people (2010). As for Kazan, the small decrease in the integral index is caused by the precipitous increase in the number of the unemployed – from 5857.0 (2008) to 13293.0 people (2009). Note that these indicators, which characterize the quality of life, at improving which the strategic plan is aimed, have positive dynamics: there was a 4-times increase in average monthly nominal wages over the period of 2003-2010, while the average yearly volume of new housing supply was 748 thousand sq m and the volume of investment in fixed capital grew 2.9 times.

To establish the structure of the integral index, we need to construct “radars” or a spider diagram (Figure 3) whose square area is proportional to the value of the integral index.

As we can see in Figure 3, in the structure of the integral index for Yekaterinburg, the highest values are those of the standardized indicators  $Y_3$ ,  $Y_5$ , and  $Y_6$ , i.e. retail trade turnover, new housing supply, and average monthly wages; for Novosibirsk

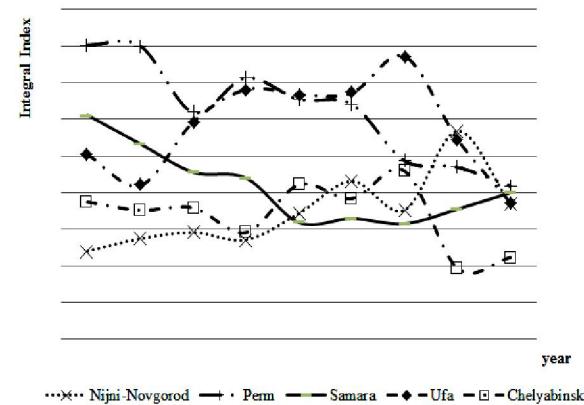
it is  $Y_1$  (the size of the population) and  $Y_5$  (new housing supply); for Kazan it is  $Y_4$  (the volume of investment in fixed capital).



**Figure 3. The “Radars” (“profiles”) of million-plus cities with strategic plans at the end of 2010**

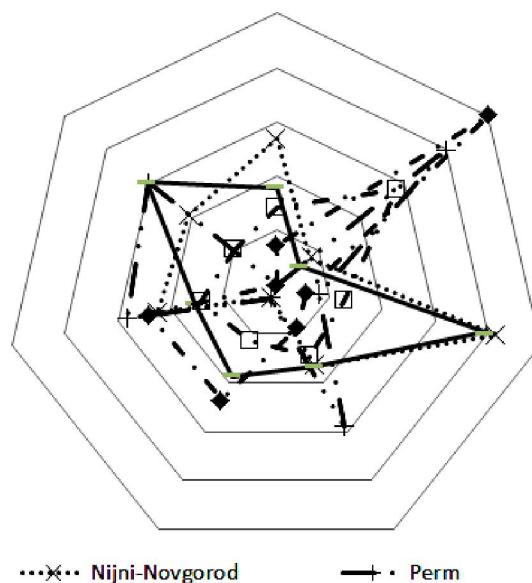
In 2010, Volgograd regained its status of a million-plus city (its population reached 1021.2) by incorporating several localities under the jurisdiction of the city administration [23], which had an impact on the value of the integral index.

The dynamics of integral indexes for cities without strategic plans are currently exhibiting a negative trend (Figure 4).



**Figure 4. The dynamics of the integral index for million-plus cities without strategic plans**

Just three cities – Nijni Novgorod, Ufa, and Chelyabinsk – demonstrate positive dynamics for the period of 2003 to 2008, which is due to an increase in the volumes of shipped products, retail trade turnover, and the volume of new housing supply. Thus, in 2010, the highest values of the indicator Y2 (volume of shipped goods of one's own production, works carried out and services rendered through one's own effort) were recorded in the cities of Ufa and Chelyabinsk (Figure 5).



**Figure 5. The “radars” of million-plus cities without strategic plans, at the end of 2010**

Thus, based on our calculations, we can say that the level of the social-economic development in million-plus cities with strategic plans differs considerably from that of the rest of the cities.

Is there a need to develop strategic plans for cities in present-day conditions [24]? Our calculations revealed that having a strategic plan is an objective necessity. Only those cities can lay claim to successful development which will be able to consolidate their social, economic, natural, and other resources, ensure the competitiveness of their economy and the social sphere, engage investment and the population, and create innovation [25], [26].

The study of million-plus city strategies has helped establish the following general trends: orientation towards sustainable development, improving the quality of life, streamlining the urban environment, and the development of the economy. In this regard, we should view cities as open, not isolated, systems and take into account their interrelations with other regional social-economic units, which are linked with each other by financial,

material, and information flows, transport networks, cultural, spiritual, and political interaction [27].

Our calculations have revealed the unpreparedness of million-plus cities for the 2008 crisis, which points to lack of or imperfections in mechanisms for adaptation to changing conditions of the external environment. There is no doubt that strategic plans carry prognostic values and scenarios for development, but that is not enough, since present-day social-economic systems are more dynamic and unpredictable.

Overall, one can point up two major aspects of a strategic plan: it can be viewed as an instrument for management and an instrument for acting upon the economy and social sphere of cities. The first aspect of strategic management by city authorities implies that all decisions made and target programs and projects adopted ought to be coordinated with a functioning strategic plan. The second, social-economic, aspect is about coordinating the actions of economic entities and interested persons, as well as the platform for creating a region attractive to investors [28].

Thus, we can assert that having in place and adopting efficient strategic programs can simultaneously help million-plus cities boost the level of their social-economic development and serve as a way to assess the efficiency of performance by the local self-governing authorities.

#### Corresponding Author:

Dr.Malykh Olga Evgenevna  
Bashkir State University

32 Zaki Validi str., Ufa, 450076, Republic of Bashkortostan, Russia

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