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Diagnostics of socio-economic situation in cities of southern Russian regions

Diagnóstico de la situación socioeconómica en ciudades de las regiones del sur de Rusia

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Contents

ABSTRACT:
In the regional economy, there are trends of asymmetric territorial development that in some cases explained by a priori unequal natural resource and geographical potential. However, sometimes differentiation resulted from an optimal insufficiency in implemented socio-economic and spatial policies of the regional development. Due to an underdeveloped real sector of the economy for small and medium-sized cities, the social sphere receives no momentum for development, which in turn leads to a deteriorating quality of life of the population.
Keywords: Regional economy, urban environment, socio-economic development, spatial asymmetry

RESUMEN:
En la economía regional, existen tendencias de desarrollo territorial asimétrico que, en algunos casos, se explican a priori por la desigualdad de los recursos naturales y el potencial geográfico. Sin embargo, a veces la diferenciación resultó de una insuficiencia óptima en las políticas socioeconómicas y espaciales implementadas del desarrollo regional. Debido a un sector real subdesarrollado de la economía para las ciudades pequeñas y medianas, la esfera social no recibe impulso para el desarrollo, lo que a su vez conduce a un deterioro de la calidad de vida de la población.
Palabras clave: Economía regional, medio ambiente urbano, desarrollo socioeconómico, asimetría espacial.

1. Introduction

The transition from centralized prescriptive regulation of territorial development to the concept of federalism involves the sovereignty establishment for regional actors and their structural elements. This process involves not only an increased responsibility for socio-economic parameters of territorial development but also entrusting regional actors with the rights and obligations to independently develop and implement the regional spatial and economic policies. Modern cities acting as main anchor points for regional urbanization frameworks are intended not only to connect the economic space of the actors, to reduce the inequality of central-peripheral imbalances under an ever-increasing influence of evolutionary-obtained factors of post-industrial development, but remain, to a certain extent, beyond an active regional creation and program and project spatial economic target-setting (Animitsa , 1999; Shibakov, Kotlyar, & Sebakova, 2004; Glukhova , 2005; Dvoryadkina , 2005; Tatarkin, 2014; Verma & Raghubanshi, 2018).

The establishment and development of urban space as a synthetic category of the regional spatial economy is associated with a set of designing, urban planning, socio-economic, and transit-communication issues. Acting simultaneously as the centers of economic growth and territories attracting resources from semi-periphery and periphery, cities are increasingly polarizing the economic space of the region complicating the management of balanced territorial development in terms of comprehensive exploitation of urban areas as well as the vast territories of the rural periphery (Chernysheva, 2013; Yang, Xu, & Shi, 2017; Zhang & Li, 2018).

2. Methodology

2.1. Analysis of socio-economic development in major cities of southern Russian region

In total, there are 56 settlements with a population of over 5,000 people and 113 settlements with 2,000-5000 inhabitants in the Stavropol territory. Frequently these settlements actually drop out of the existing division of labour and lose opportunities to act as "economic satellites" for larger urban agglomerations under conditions of poor market infrastructure. In the end, the socio-economic differentiation of territories by a development level only increases over time.

In the regional economy, it is generally accepted that the network organization of spatial economic relations is more beneficial for the development of the regional socio-economic system. Among the main factors of its occurrence are a large number of cities included in the system of economic relations and barter transactions. At the same time, there should be no pronounced concentration of the entire regional economic potential in either of cities.

In the Stavropol territory, there are five largest urban agglomerations collectively providing: 69.1% of the value of the fixed assets of the entities; 53.8% of the amount of executed works in the mining sector; 57.9% of the amount of executed works in the sector of production and distribution of electricity, gas and water; 75% of the amount of executed works on "Construction" activity; 63.8% in terms of deployment of the total area of residential buildings; 78.4% of the retail trade turnover; 52.9% of all fixed investments.

At the same time, there is no pronounced absolute centralization of the economic space in the Stavropol territory (table 1).

Table 1
Share of core socio-economic indicators
for cities in Stavropol territory in 2017 (%)

Indicators	Stavropol	Essentuki	Kislovodsk	Nevinnomyssk	Pyatigorsk
Population	14,3	3,6	4,9	4,2	7,6
Average annual number of entities' employees	24,8	3,1	4,1	5,3	9,0
Availability of entities' fixed assets (at year-end)	52,5	0,8	3,2	5,2	7,4
Amount of shipped made-in goods, insource executed works and services by type of activity:					
Mining	0,02	–	–	-	–
Manufacturing	16,6	1,0	2,6	29,5	4,1
Production and distribution of electricity, gas and water	9,8	2,4	3,5	24,5	17,7
Implemented work on "Construction" activity	18,7	2,6	2,8	19,7	31,8

Deployment of total area of residential buildings	44,0	5,8	4,2	2,4	7,4
Retail trade turnover	54,0	1,8	1,8	2,2	18,6
Fixed investments	10,0	3,1	4,3	32,1	3,4

Source: (Statistical yearbook of Stavropol territory:Statistical collection., 2018)

It should be noted that Stavropol city has the largest share of 5 out of 11 indicators. Particularly, it is 14.3% of the total population of the region living in the city; also it is 24.8% of the average annual number of entities' employees in this agglomeration. It is worth noting that it is a large number of job opportunities making this city more attractive to the population with regard to choosing the employment sphere by young professionals. Pyatigorsk city came in second place in two indicators mentioned above. It is 7.6% of the regional population there, whereas the average annual number of entities' employees is 9%.

The availability of fixed assets characterizes the technical and technological equipment of the real sector of the economy also being one of the indicators to define the size of the city's economy. Stavropol demonstrates an absolute dominance in this indicator concentrating 52.5% of all fixed assets. It is followed by Pyatigorsk in second place (7.4%) and Nevinnomyssk city as the third one (5.2%).

But it is worth noting that despite the absolute dominance of Stavropol according to the value of fixed assets in the city's economy, Nevinnomyssk leads in such economic activities as "Manufacturing", "Production and distribution of electricity, gas and water", and "Construction" with the share 29.5%, 24.5%, and 19.7% respectively. This is indeed a vindication of the fact that the capital-intensive production prevails in Stavropol or within the share of fixed assets it is their passive part that dominates. Stavropol is distinguished by a high share in the manufacturing sector (16.6%) as it is one of the key regional sectors due to its high share in the structure of the internal regional product in the Stavropol territory (12 %). Concerning the amount of executed works and rendered services in the sector of production and distribution of electricity, gas and water, Nevinnomysk has the largest share (24.5%). Pyatigorsk also has a high value of this indicator (17.7%).

As for the amount of executed works on the "Construction" activity, Stavropol, Nevinnomyssk and Pyatigorsk collectively hold 70.2% of the indicators for the region as a whole demonstrating the most dynamic development of these cities. Pyatigorsk leads in this indicator performing 31.8% of all construction works. At the same time, Stavropol dominates in residential buildings' deployment (44%), whereas the share for other major cities in the Stavropol territory does not exceed 10%.

Concerning the retail trade turnover, Stavropol also leads with 54% followed by Pyatigorsk in second place with 8.6%. In this regard, there is a certain pattern resulted from these largest cities' differentiation of the share of the population (14.3% vs. 7.6% respectively) and the retail trade turnover (54% vs. 18.6%). That is, the advanced commercial sector of Stavropol is determined not only by the city's population (market capacity for the distribution of goods) but also the overall level of trade infrastructure development and consumer solvency of the population.

In terms of fixed investments, Nevinnomyssk has the largest share (32.1%). It is traditionally an attractive city for investment in the industrial sector, in particular in the chemical industry. Stavropol is in second place with 10%.

It should be noted therefore that Stavropol city is in the lead with the number of the highest share indicators comparing to the regional performance (5 indicators), Nevinnomyssk leads by three indicators. Pyatigorsk in its turn dominates with one indicator, while for the majority of indicator share levels it gives in only to Stavropol. Cities Essentuki and Kislovodsk are developing though they are smaller agglomerations with a pronounced resort and tourism specialization.

In terms of demographic indicators for the cities of the Stavropol territory, the high natural population growth per 1000 people in Stavropol is noteworthy (3.4 people). The largest decrease in the population was recorded in Nevinnomyssk (- 4.3 people) with the previous year' level is -2.4 people (table 2).

Table 2
Indicators of labour sphere and demographics
in cities of Stavropol territory

Indicators	Stavropol		Essentuki		Kislovodsk		Nevinnomyssk		Pyatigorsk	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Number of births per 1,000 population	13,8	13,5	12,0	10,1	8,0	8,8	10,4	10,1	9,8	10,1
Number of deaths per 1000 population	11,1	10,1	14,9	11,3	10,8	10,6	12,8	14,4	10,8	10,4
Natural growth, decrease (-) per 1000 population	2,7	3,4	-2,9	-1,2	-2,8	-1,8	-2,4	-4,3	-1,0	-0,3
Average annual number of entities' employees, thsd. people	131,1	125,1	16,3	15,7	21,0	20,9	27,3	26,8	45,2	45,6
Number of unemployed citizens registered with employment service (at year-end), people	4679	4198	451	383	784	746	2063	1700	612	793
of these officially recognized as unemployed	4555	3931	436	378	775	741	2044	1591	583	349

Source: (Statistical yearbook of Stavropol territory:Statistical collection., 2018)

It is also worth noting a rather significant decrease in the average annual number of entities' employees in Stavropol from 131.1 thsd. people to 125.1 thsd. people. There is also a decrease in this indicator observed in Essentuki, Kislovodsk, and Nevinnomyssk to a lesser extent though than in the regional centre. The increase in the indicator was recorded only in Pyatigorsk.

By the number of people officially recognized as unemployed, Stavropol stands out with 3,931 people decreasing from 4,555 people in 2016. A positive trend is a decrease in the number of people officially recognized as unemployed in comparison with 2015 for all the cities analyzed.

Having analyzed the dynamics in core socio-economic development parameters for the cities of the Stavropol territory in 2016 and 2017 in general, it should be noted that Stavropol leads in the majority of social development indicators and, in particular, the social infrastructure provision to the population. At the same time, this city has the largest monthly average nominal salary 18,362.3 rubles. In Stavropol, there are 23.7 sq. meters of housing facilities per urban inhabitant, which is the best performance among all cities, while noting a decrease in this indicator for the previous year in Stavropol as well as in Essentuki (from 24.1 m2 to 20.5 m2). By the number of general education establishments and outpatient polyclinics, the number of doctors and hospital beds per 10,000 populations, Stavropol is also in the lead demonstrating the highest level of social infrastructure development among all the cities under analysis.

As a general note, there is a fairly high differentiation in the core socio-economic parameters, though without a prominent centralization of the economic space among the largest cities of the Stavropol territory to be identified.

2.2. Analysis of socio-economic development of medium-sized cities in southern Russian region

Following the logic of the research, it would be necessary to analyze the core development parameters for medium-sized cities of the Stavropol territory (50,000-100,000 population). In

total, there are four of them in the region: Mineralnye Vody (76.7 thsd. people); Georgievsk (72.1 thsd. people); Mikhailovsk (71.0 thsd. people); Budennovsk (64.6 thsd. people).

In particular, among "negative" signal trends there is a decrease in the number of permanent population in Nevinnomyssk by 8.42% comparing to the level of 2015, while it is an increase in this indicator identified in other cities. The level of natural growth per 1000 population in Stavropol is 2.1 people, while for the remaining cities there is a decline. The highest share of unprofitable entities is registered in Kislovodsk (41%). In turn, Nevinnomysk is far behind the other major cities in terms of the residential buildings' deployment under all sources of funding (28,539 thsd. sq. meters for 2017), whereas in Stavropol this figure was 553.8 thsd. sq. meters. All major cities are far below Stavropol regarding the development level of social infrastructure, in particular: the number of doctors per 10,000 population (73.7), the number of hospital beds per 10,000 population (161), and the number of sports facilities (779).

In the category of medium-sized cities (with population 50-100 thsd. people), the city of Mineralnye Vody can be highlighted with a population of 91380 thsd. people. Among negative trends in this agglomeration, there is, first of all, a population decline tendency (-2.0 per 1000 population). In addition, there is quite a high share of unprofitable entities across all activities (30.4%). It is also important to note that Mineralnye Vody outperforms Georgievsk only in terms of the fixed assets' value of the entities, while the former is inferior to other medium-sized cities that have significantly less population. In Mineralnye Vody, there is also a high emission of pollutants into the atmosphere from stationary sources (1,116 thsd. tons). Another shortcoming is the smallest the number of sports facilities among the four medium-sized cities of the region (64). In turn, Georgievsk has the highest rate of population decline (2.8 people per 1000 people), the lowest number of economic actors (3475), the lowest fixed assets' value of the entities (1277 mil. rubles) and, accordingly, the lowest rate of fixed investments among the cities of this category (1414.3 mil. rubles) indicating the depressed nature of economic processes in Georgievsk.

In turn, Mikhailovsk can be described as the most dynamically developing among all the medium-sized cities of the Stavropol territory. It is evidenced by the high level of population growth for 5 years and, accordingly, the deployment of residential buildings (107.8 thsd. sq. m.). In addition, this city has high rates of fixed assets' value of the entities (4100.4 mil. rubles) and fixed investments (3645.9 mil. rubles). However, there are also negative trends associated with the high share of unprofitable entities as well as negative balanced financial results of the entities (306.1 mil. rubles). Mikhailovsk is experiencing positive agglomeration effects of development due to the proximity of the regional centre acting as a satellite for the latter.

Amidst all the analyzed medium-sized cities in the Stavropol territory, Budennovsk is the most developed in the field of industrial production being an integral part of the emerging but not fully formed regional chemical cluster (together with Nevinnomyssk). The functioning of Budennovsk is characterized by the largest balanced financial result of entities and enterprises of all the medium-sized cities in the Stavropol territory, which amounted to 5,459.1 mil. rubles in 2017 versus 392,1 mil. for Stavropol. At the same time, a share of unprofitable entities was 13.3%, for Budennovsk, which is also the best performance. Also, the high level of development of the real sector of the economy of Budennovsk is characterized by the residual value of fixed assets (7,651.7 mil. rubles) and a large number of business entities (3832). Such high development level in Budennovsk ensures the dynamic performance of the social sphere in the urban space. Thus, Budennovsk leads in the number of hospital beds per 10,000 population (125), the number of public libraries (10), the number of sports facilities (111). The city also has a high number of doctors per 10,000 population (34).

At the same time, among negative trends, there is a rather low rate of the residential buildings' deployment under all sources of funding (13,148 thsd sq. m.). Furthermore, it is worth noting that the strong performance of the city's industrial sector affects the environmental condition as Budennovsk has the maximum level of pollutant emissions into the atmosphere from stationary sources of all the analyzed cities (3.05 thsd. tons).

2.3. Analysis of socio-economic development in small cities of southern Russian region

In the category of small cities (up to 50,000 people), Isobilny is the largest one in the Stavropol territory (40,149 people). It partially receives positive momentum for the development due to the relative proximity to the regional centre. The smallest city of the analyzed ones is Zheleznovodsk (24,361 people) as the population decreased there by 53.62% compared to the level of 2015.

In terms of natural growth per 1000 population, Novopavlovsk is in the lead (+0,1) with an increase of 15.1% over the last 5 years. In general, small cities of the Stavropol territory have lower demographic indicators than large and medium-sized ones. Thus, in 8 cities out of 10, there is a natural decrease in population with the maximum level identified in Isobilny (-4.1 people per 1000 population).

Zheleznovodsk stands out regarding the number of commercial actors having 3,339 enterprises and entities, Isobilny is in second place with 2183, and the lowest value of business structures was recorded for Neftekumsk (1173). The balanced financial result is the highest in Ipatovo (623.9 mil. rubles), while in Zheleznovodsk this figure amounted to 12.9 mil. rubles. It is at 1.9 mil. rubles in Isobilny, which is the lowest rate among all small cities in the region. The lowest share of unprofitable entities across all activities was registered in Novopavlovsk (8.3%), while the largest was in Zheleznovodsk (38.5%). Being the centre of agricultural production of the given municipality, Novoaleksandrovsk is in the lead with the number of the net book value of fixed assets (5687.5 mil. rubles), in Novopavlovsk, in turn, this figure amounts to 328.2 mil. rubles, which is the lowest figure across all small cities. In terms of fixed investments, Zheleznovodsk is the leader with 1796.3 mil. rubles. The lowest investment activity in forming the fixed capital was recorded in Lermontov (445.1 mil. rubles).

Generally, it should be mentioned that there is no centralization and apparent dominance in the economic sphere identified among the small cities of the Stavropol territory. The cities are extremely differentiated in almost all indicators. On the one hand, this trend demonstrates the high network organization of the economic space of the Stavropol territory. On the other hand, it is the result of different specialization of cities, which can be distinguished into the centers of agricultural or industrial production, as well as the cities of resort and tourism specialization. Thus, there is a high level of trade in the cities that are in close proximity to the regional center as well as ones specializing in resort and tourism (Isobilny, Zheleznovodsk, and Lermontov), while high rates of the fixed assets' value and fixed investments are identified in cities with traditional agricultural specialization (Novoaleksandrovsk, Svetlograd, etc.).

At the same time, against the background of the ongoing trends towards urban consolidation, many of them encounter difficulties in differentiating the structure of the economy and the existing resettlement system.

Isobilny stands out in terms of the social development level and, in particular, the social infrastructure availability having leading performance in the number of hospital beds per 10,000 population (277), the number of outpatient polyclinics (8), the number of sports facilities (74), and the number of public libraries (8). The slowest pace of social development is identified in Ipatovo, which has the lowest numbers in 3 out of 6 social infrastructure parameters among all small cities analyzed, while in terms of economic performance Ipatovo is not considered as an outsider.

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3. Results

The analysis revealed the major threats to the development of the cities in the Stavropol territory. Their main characteristics are as follows:

1. First of all, it is a weak infrastructural utilization especially regarding the social infrastructure that affects the quality of life of the population. Small and medium-sized cities have a low density of economic space; their economies are often mono-oriented and heavily dependent on external factors. Small cities are also characterized by the insufficient capacity of their marketing outlets constraining the development of the real sector of the economy relying on the space of their own cities only. It also stimulates searching for new marketing outlets outside the region, which makes inter-regional cooperation within the country inefficient and cost-intensive in the circumstances of the weak territorial population density, the significant remoteness of the objects from each other, and inadequate transportation.

2. Contemporary realities of spatial economic development throughout the world give a more and more significant role to mega-cities that act as "growth locomotives" for the regional economy. In this regard, the denser the network of major cities in the region is, the more stable its socio-economic situation is. In the Stavropol territory, only 1 out of 19 cities has more than 250,000 population, 4 other cities have a population between 100 thsd. and 150 thsd. people. Thus, the agglomeration effect is not a key one for the Stavropol territory due to the lack of provincial mega-cities. In the region, potential growth centres are cities with 100,000-150,000 population (Essentuki, Pyatigorsk, Kislovodsk, Nevinnomyssk), although not all of them have sustained

population growth trends. For example, in Nevinnomyssk the population decreased from 129959 people in 2011 to 118225 people in 2017.

4. Part of the cities with a population between 100 thsd. people and 150 thsd. people still remain "industry centers" (e.g. Kislovodsk, which is the core of the tourism and recreation cluster, or Nevinnomyssk, which remains the leader of the chemical industry in the region). Other cities turn into "centres of trade and services" due to the agglomeration effect with a steady increase in turnover per capita (Pyatigorsk, Essentuki).

5. The region is demonstrating a well-known paradox of the Russian urbanization model consisting in a steady increase of the share of urban population comparing to rural, against the tendency of its decline due to the general population decrease in Russia. Although this paradox manifests itself not in all cities of the Stavropol territory. Thus, in 12 out of 19 cities, the population is growing or remains unchanged, while in 7 cities it is declining. For some of them the process is rather significant (e.g. in Zheleznovodsk the population decreased from 52622 thsd. people to 24,361 thsd. people over the last 3 years). Large cities partially grow at the cost of small ones with deteriorating socio-economic conditions. However, there are also quite resilient trends of urban growth at the expense of rural areas in the region.

6. Deformation tendencies are amplifying regarding the cities' functional structure towards increasing their mono-profile characteristics and the development of the economy's tertiary sector.

4. Conclusions

The implemented research led to several conclusions on the level of socio-economic development of cities in the southern Russian region. It should be noted that the regional management system should give more attention to urban development strategy as a fundamental factor in the system of core socio-economic indicators of regional policy. That, in turn, requires the development of effective approaches to address the problem of optimizing the search mechanisms and information processing on changes in the socio-economic situation of cities and subsequent management decision-making in the regional management system. The assessment results of the socio-economic development of urban economies should be compared with the spatial characteristics of their localization and the established interaction with the city-centre (Bufetova , 2015; Manaeva , 2017; Schindler, Mitlin, & Marvin, 2018).

The problematic coexistence of specialization and urban development level with the core parameters of the regional socio-economic system development in general, which should be harmoniously embedded in the single economic space of the country, becomes increasingly evident. However, in the context of globalization, large mega-cities accumulate economic actors within their territory, who belong to different and sometimes competing production contours from various regions and countries. The city, meanwhile, acts not only as a labour supplier but also concentrates a large number of the most solvent consumers of goods, work and services within its borders.

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[Index]

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