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SPATIAL FEATURES OF SECTORAL DEVELOPMENT

Assessing Public Sector Performance in Regions of the Russian Federation

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Abstract—In connection with the growing spatial unevenness of socioeconomic development in Russia, empirical assessments of the activities of the public sector at the regional level are of scientific interest. Russia is a federal state in which all subjects have equal status; therefore, it is assumed that the state should strive to perform its functions equally throughout the country. A review of research into the activities of the public sector showed a lack of studies on its comprehensive assessment using Russian data at a regional level, which determined the aim of this study. The proposed assessment methodology is based on construction of a composite index of 74 indicators of socioeconomic development of regions for 2011–2020, in the formation of which the public sector plays a significant role. The PSP (Public Sector Performance) assessment methodology was modified by the authors by increasing the number of indicators considered and changing the standardization method, taking into account the characteristics of the data set. A procedure was also applied for assigning various weights to indicators through expert assessment of the state's influence on them. A composite PSP index by region and subindices for eight blocks were calculated: Transport Infrastructure; Healthcare; Education, Science and Innovation; Sports and Culture; Social support; Safety; Ecology; and Economic Development. The Gini coefficient indicates low differentiation of PSP in Russian regions, although the leaders of the final ranking are Moscow and St. Petersburg by a significant margin. The gap behind the leaders is more pronounced in the first three blocks. Authorities can use the results to identify weaknesses of regions, and sectoral spatial gaps; to develop directions for correcting government programs; and to determine the pool of interregional interactions in order to transfer the best administrative cases, projects, and practices from leading regions in the corresponding areas.

Keywords: public sector, public sector performance assessment, indices, spatial unevenness, rating of regions, infrastructure, regional socioeconomic development

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INTRODUCTION

Russia is a federal state in which all subjects have equal status; therefore, it is assumed that the state should strive to perform its functions equally throughout the country. The combination of natural, climatic, historical, institutional, and other characteristics of regions may determine differences in the actual capabilities of performing government functions in accordance with legal regulations. In connection with the growing spatial unevenness of socioeconomic development in Russia (Kryukov and Kolomak, 2021), empirical assessments of the activities of the public sector at the regional level are of scientific interest.

The concept of the state sector of the economy is often used to describe the participation or presence of the state in the national economy. At the same time, interpretations of this concept may vary.

In the System of National Accounts,[1] the state sector is defined as the sector of the economy that brings together all national governments and all the corporations they control. I.V. Gersonskaya (2020, p. 7) believes that the structure of the state sector of the economy includes three main, specific, and completely independent elements: administrative structures, state corporations, and the state social sector.

The concept of the state sector is closely related to that of the public sector. In a collective work edited by L.I. Jakobson and M.G. Kolosnitsina, it is noted that the public sector consists of organizations and resources the functioning and use of which is not just under the control and regulatory influence of the state (the entire economy experiences some of its effects),

[1] See: System of National Accounts. 2008. https://unstats.un.org/unsd/nationalaccount/docs/SNA2008RussianWC.pdf (accessed January 1, 2022).

but it is directly and immediately determined by the state (Ekonomika ..., 2014, p. 28). At the same time, N.V. Sergienko (2008) writes that the concept of the public sector is broader than the concept of the state sector, because the public sector includes nonprofit and other organizations that are not government-related, while acting in the interests of society.

Experts admit that today the role of the state in the Russian economy is indeed quite high (Volkonsky, 2020). In this study, we are interested in considering all aspects of the state's impact on trends in the socioeconomic development of Russian regions, on the results of development of the economy and society within the established system of public administration and state institutions. At the same time, it is not planned to evaluate the activities of nonprofit organizations, the activity of the population and the level of social responsibility of business in this study, and the results of their activities in the interests of society will be indirectly taken into account when assessing the work of the public sector, since the very manifestation of such activities is apparently determined by the existing system of government. In this regard, below we will use the concept of "public sector."

The proposed assessment of the performance of the public sector at the regional level will be not only and not so much an assessment of the work of regional administrative teams or governors within the framework of their powers, since it will take into account the regional projection of the federal state socioeconomic policy. Therefore, the widely discussed problems of government, federalism and the distribution of powers between levels of government will not be addressed in this article.

REVIEW OF STUDIES ON PUBLIC SECTOR PERFORMANCE EVALUATION

Questions about the effectiveness and efficiency of government activities are widely discussed in the scientific community. However, only a few of the studies on this issue feature quantitative estimates.

A.N. Savrukov and N.T. Savrukov (2017) developed a methodology for assessing the effectiveness of public administration in Russian regions based on 25 indicators, but did not make calculations using this methodology. In this study, the authors at the same time propose using the methodology to improve public administration by annual monitoring and analysis of dynamics.

Afonso et al. (2005) presented a methodology and results for assessing public sector performance over time at the level of individual OECD countries. Fifteen indicators were used, which were combined into seven blocks (Fig. 1). The first four blocks are capability indicators that take into account performance in governance, education, and health, as well as the quality of public infrastructure. The other three blocks reflect the standard Musgravian measures (Musgrave, 1959) of the functions of government: distribution, redistribution, and stability. The resulting PSP (public sector performance) scores were weighted by the corresponding government expenditures and PSE (public sector efficiency) indicators were calculated for each country. Thus, studies on assessing the performance of the public sector served as a starting point for assessing the effectiveness of its functioning in different countries and, accordingly, under different administrative systems. Later, Afonso et al. (2013), using the same methodology, published a study based on materials from Latin America and the Caribbean.

A study based on a data set for OECD countries and Russia consisting of 16 indicators was carried out by N.V. Akindinova et al. (2017), adding the Russian public sector to the analysis for the first time.

In the study (Yadava and Neoga, 2022), a conceptually similar methodology was tested on materials from 19 Indian states using 11 indicators. The number of indicators taken into account in these studies was small.

At the country level, we suggest that 10–20 indicators are sufficient to ensure comparability of data and compare government systems as a whole. However, with respect to the regional level, if there is a unified system of state statistics for a comprehensive assessment of the work of the public sector, the number of indicators can be increased.

There are studies in which an empirical assessment is carried out on a regional basis only for individual blocks and areas of activities of the public sector. For example, R. Garcia-Gomez et al. (2019) assessed the results and efficiency of the public sector using materials from 17 autonomous regions of Spain over 10 years. Their study used sets of 16 indicators in the field of health and education. Using Russian data, A.S. Akhremenko and E.A. Yureskul (2013) assessed the efficiency of the public sector by region only for the Healthcare block (three performance indicators, one expenditure indicator).

In the cited studies, when constructing an integral PSP assessment, all indicators taken into account are given equal weight. The authors themselves point out that this is a big simplification. Also, this approach has been justifiably criticized in the scientific community (Barinova et al., 2017), since indicators can have different effects on the assessed result, therefore leading to significant distortions, averaging of estimates, and incorrect administrative decisions.

D. Hauner and A. Köbe (2010), using panel data on the activities of the public sector in education and health care from 1980 to 2004, and also using the methodology proposed by A. Afonso et al. (2013), calculated the PSP for 114 countries. Their study is distinguished by the widest possible spatial coverage of the analysis. Only six indicators were used to ensure comparability of data across countries. The collected

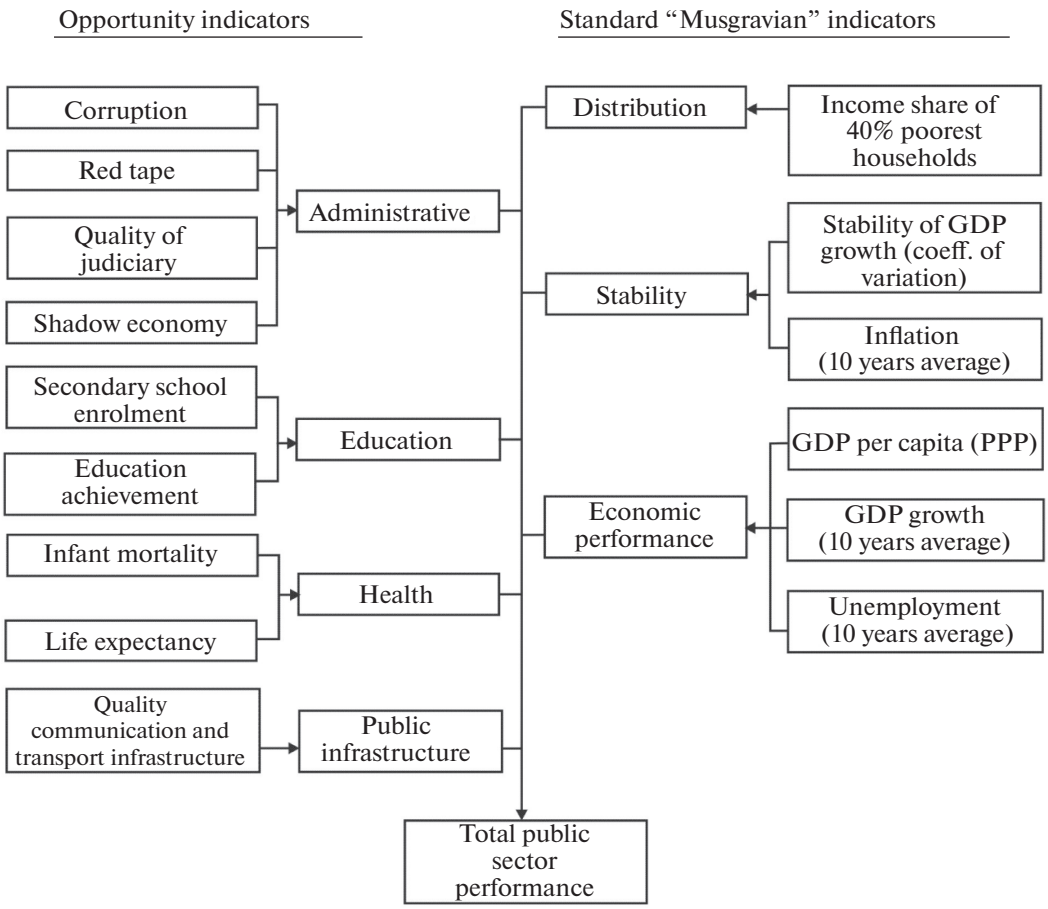

Fig. 1. Public sector performance indicators.
Compiled by authors after (Afonso et al., 2005).

data allowed the authors, at the second step, to estimate simple and multiple regressions of PSP with parameters for economic, institutional, demographic, and geographic determinants. This provides ample opportunity for meaningful conclusions to be drawn within a panel study. However, in our opinion, some of the considered indicators are direct or indirect assessments of the quality and performance of the public sector (inflation, corruption, democracy, gender and age structure of the population, etc.) and do not serve as an external determinant of PSP. Therefore, in our study, they will be taken into account within the PSP; i.e., they will terms in the calculation.

Thus, it can be stated that there are no works that comprehensively study the activities of the public sector in a regional context based on Russian data. Therefore, the authors have identified assessing the PSP in Russia based on publicly available regional statistics as the goal of this study.

MATERIALS AND METHODS

In this study, we relied on the PSP assessment methodology of (Afonso et al., 2005), modified by increasing the number of considered indicators, assigning different weights to individual indicators, and changing the data normalization method. The assessment consisted of the following stages: (1) selection of indicators; (2) data processing; (3) determination of indicator weights; (4) calculation of regional indices; (5) analysis of the results.

(1) ***Selection of indicators.*** This study, providing a comprehensive assessment of the PSP in Russian regions, will make it possible to rank all federal subjects according to the calculated PSP values. Regional ratings are often the product of comprehensive assessment of the position of regions in any area (Dyukina and Lukyanova, 2018). At the same time, existing ratings, depending on the area being assessed and availability of data for the compiler, may contain a completely different number of indicators. As N.S. Kozyr (2019) points out, to compile a comprehensive rating, the optimal number of indicators ranges from 50 to 100. If few indicators are used (10–30), it is difficult to talk about the complexity of the assessment. At the same time, the use of a large number of indicators makes ratings difficult to verify, as well as too cumbersome as a strategic administrative tool (Barinova et al.,

2017). Nevertheless, in modern Russian practice, this approach is used when compiling quality of life ratings. For example, the Agency for Strategic Initiatives (ASI) constructs a Quality of Life Rating based on 141 indicators, and an unequal number of indicators in blocks is allowed (Healthcare, 13 indicators; Safety, 8 indicators; Education and Development, 23 indicators; etc.). At the same time, ASI publishes information only about the first 20 leading regions in the rating. The distribution of places among other regions is classified information; detailed results of each region with the values of all indicators are available only to the administrative team of this region.

It seems to us that based on Russian regional data,[2] it is possible and advisable to consider a set of 74 indicators, in the formation of which the public sector plays a key role. The values of the indicators selected for analysis, to a certain extent, are precisely the result of the state's influence on the economy through direct or indirect levers, the established system of public administration, innovation, industrial, sectoral, demographic, and other policies. Coverage of the analyzed areas is sufficiently broad to indicate the complexity of the resulting estimates. At the same time, open access to the set of selected indicators makes it possible to obtain a detailed breakdown of the integral assessment of PSP for making administrative decisions.

In our study, the work of the public sector in Russian regions Federation is assessed in eight blocks: Transport Infrastructure (six indicators), Healthcare (eight indicators), Education, Science, and Innovation (14 indicators), Sports and Culture (eight indicators), Social support (six indicators), Safety (three indicators), Ecology (six indicators), and Economic Development (23 indicators).

At the same time, where necessary, relative rather than absolute indicators were used. For example, the number of gymnasiums was taken into account based on the average annual population living in the region, the area of forest land affected by fires was taken into account with respect to the area covered by forest, etc. Monetary indicators were adjusted to the cost of living in the region.

At the same time, at the regional level, the characteristics of the political and judicial systems, assessed when the World Bank constructs an intercountry rating on the quality of public administration, become irrelevant (Kaufmann et al., 2010).

Frequently, when assessing different aspects of regional socioeconomic development, budget expenditures are taken into account as a whole or by individual budget classifiers. In this study, budget expenditures are interpreted as costs for the performance of government functions and for achieving the results of the public sector as a whole, and therefore cannot be considered an actual result of activity and thus are not taken into account. Barinova et al. (2017, p. 19) also note that the "summation of inputs and output gives biased results".

This position is in line with the methods adopted in the EU for developing regional ratings, when the main subject of assessment are the results, not the prerequisites, of the studied processes (Mikheeva, 2013).

In our opinion, the presence of correlated indicators in the data set used to assess PSP (29 pairs were identified) does not oblige us to remove or adjust their weights for the following reasons. First, the goals of various government programs, regulatory mechanisms, and activities of various government bodies also often correlate with each other. This is what makes the state system integral and stable. Such related indicators, which are the results of different areas of public sector work, can and should be counted twice. Second, it was noted that when constructing other regional ratings, including the ratings of innovative development, quality of life, rating of governors, etc., correlated indicators obviously are also used.

(2) ***Data processing.*** Depending on the purposes of construction, comprehensive ratings are published at different intervals and using data for different periods. The Higher School of Economics (Rating ..., 2021) and Association of Innovative Regions of Russia[3] publish ratings once or twice a year, using data for the corresponding period, regardless of the observed outliers or spikes, leaving their interpretation to the discretion of the reader.

In our study, it may be advisable to consider the results in terms of four- to six-year periods (the frequency of elections), then the results could be used to evaluate the work of leaders and/or administrative teams at the regional level, as well as to evaluate the spatial policy of the federal center.

However, at the data processing stage, as a test of the authors' methodology, it was important to obtain an up-to-date spatial cross section of the results of the public sector in Russian regions, reliable and without annual fluctuations. Therefore, just like in (Afonso et al., 2005), we smoothed the data:

$$P_{ir} = \frac{1}{N}\sum_{n=1}^{N} P_{irn}, \quad (1)$$

where P_{ir} is the average level of indicator i in region r; P_{irn} is the value of indicator i in region r in a year n; N is number of years taken into account.

Formula (1) calculates the average values of indicators for the period 2011–2020.[4] In this formulation,

[2] See: Appendix to the Collection Regions of Russia. Socioeconomic Indicators. https://rosstat.gov.ru/folder/210/document/47652 (accessed January 2, 2022).

[3] See: Reiting innovatsionnogo razvitiya sub''ektov Rossiiskoi Federatsii. https://www.i-regions.org/reiting/rejting-innovatsionnogo-razvitiya/ (accessed January 1, 2022).

consideration of the activities of the public sector goes beyond just assessing the quality of public administration based on results (Leksin, 2009). Owing to smoothing, the addition of periodically published current data for the next year into the calculation, i.e., a shift in the period under review will not immediately result in significant changes in the estimates of the required composite PSP indices.

At the primary data processing stage, it became necessary to develop add-ons to the methodology[5] by constructing indices for certain indicators.

Using the indicator "stadiums with stands for 1500 seats or more", provision of spectator seats to the population is assessed. It is clear that the presence in the region of a stadium with stands for 80000 people is not the same as for 1500 people. Therefore, using data on the number of spectator seats at the 30 largest football fields in the country and at the 116 largest ice arenas, we adjusted the basic formula (1) for indicator *i*—"spectator seats in stadiums with stands":

$$P_{ir} = \frac{1}{N} \times \frac{M_r}{M_r^{\min}} \sum_{n=1}^{N} P_{irn}, \quad (2)$$

where $M_r^{\min}$—number of seats in stadiums in the region *r* assuming that all sites have 1500 seats; M_r—actual number of seats in stadiums in the region *r*; *N*—number of years taken into account.

This was the first attempt to look into the quality of the infrastructure provided. The story about the quality of infrastructure was continued in the Education, Science and Innovation block. Depending on the number of universities in the regions included in the top 500 ranking of world universities for 2020,[6] for nine regions an increasing coefficient was applied for the indicator *i*—higher education:

$$P_{ir} = P_{ir} \times \left(1 + \frac{e_r^{2020}}{\sum_r e_r^{2020}}\right), \quad (3)$$

where e^{2020}—number of universities in the region *r* included in the top 500 ranking of world universities for 2020.

The indicator "passenger turnover of public buses per 1 thousand people" was expanded for regions that have a metro system, which occupies a significant share in intracity passenger traffic, according to the formula

$$P_{ir} = P_{br} + P_{mr}, \quad (4)$$

where *i*—passenger turnover of public transport in region *r*; *b*—passenger turnover of public buses in region *r*; *m*—metro passenger turnover in region *r*.

(3) ***Determination of indicator weights.*** A distinctive feature of the developed methodology is a deviation from the generally applicable practice of assigning equal weights to all indicators when constructing a composite index. The weight of the indicators in this study was determined taking into account the expert assessment of the degree of influence of the state on them. Each indicator was assigned a score from 1 to 5: the greater degree of influence—the higher score. The maximum score was reduced in cases where:

(1) the private sector (business) largely influences the formation of the indicator. For example, private organizations are emerging in the healthcare industry, and their number is growing rapidly;

(2) the population, i.e., consumers of the results of public sector activities make a material contribution to the formation of the indicator: e.g., additional services in preschool education organizations, etc., are paid for;

(3) consumers are able to influence the level of the indicator with their decisions: e.g., consumers practically cannot influence the indicator commissioning of capacities of general education organizations; the decision is made by the authorities, but consumers can become postgraduate students and postdocs;

(4) the state does not have direct levers, mechanisms, or incentives to influence the indicator: e.g., the state does not have the opportunity to directly influence the sustainability of GRP growth, since the number of factors determining it is too large, whereas consideration of a patent application is the direct responsibility of the state.

Depending on the assigned points, all indicators are assigned a weight , which is taken into account when compiling subindices and the composite index of the region (see formulas (8)–(11) below in the description of calculations):

$$\alpha_i = \frac{\beta_i}{\sum_{i=1}^{i} \beta_i}, \quad (5)$$

where β_i is the score assigned to indicator *i*.

Thus, instead of equal weights for 0.0135 (=1/74), the indicators were assigned weights from 0.004 (received 1 point in accordance with the logic described above, e.g., per capita GRP and the stability of its dynamics) to 0.02 (received 5 points, e.g., railway density).

(4) ***Calculation of regional indices.*** When compiling complex indices, a fairly common approach involves assigning ranks to regions for each indicator. For example, in (Naydenova, 2007), each region was assigned ranks from 1 to *P*, where *P* is number of regions. Similar A.A. Fedulin, N.A. Platonov and O.I.

[4] For the Republic of Crimea and the city of Sevastopol for the period 2014–2020.

[5] For more information about the methodology, see (Tarasova, Sedipkova, 2022).

[6] See: QS World University Rankings 2020. https://www.topuniversities.com/university-rankings/world-university-rankings/2020 (accessed 5/1/2022).

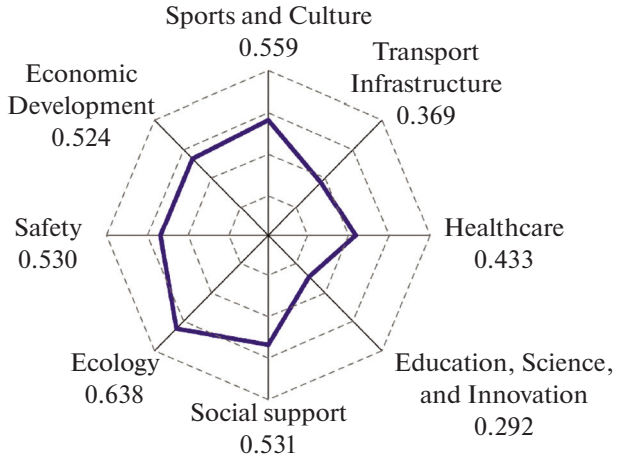

Fig. 2. Medians by subindices of public sector activity blocks.
Calculations by authors.

Vapnyarskaya (2012) rank the value of each indicator according to its relation to the maximum value in the sample, then, based on the ranking results, the indicator is given a score. We believe that in this case important information about the absolute values of the gaps between regions is lost.

Normalization of indicators to the average value applied by A. Afonso et al. (2005), in our study, due to the presence of negative values in the set of regional data used (e.g., migration outflow), will lead to outliers. Therefore, here normalization is carried out using the linear scaling method on the segment from 0 to 1 to ensure comparability of indices for individual blocks, so that at the next step, the resulting values can be added together:

$$I_{ir} = \frac{P_{ir} - P_{ir}^{\min}}{P_{ir}^{\max} - P_{ir}^{\min}}, \quad (6)$$

where I_{ir} is the normalized value P_{ir} in region r for indicator i; $P_{ir}^{\min}$ is the minimum P_{ir} value in the sample for indicator i; $P_{ir}^{\max}$ is maximum value P_{ir} in the sample for indicator i.

A value of 1 was assigned to the region with the best P_{ir} value.

Next, reverse normalization is performed according to indicators whose values the state seeks to reduce (e.g., the number of crimes), according to the formula

$$I_{ir} = 1 - \frac{P_{ir} - P_{ir}^{\min}}{P_{ir}^{\max} - P_{ir}^{\min}}. \quad (7)$$

The estimate PSP_{kr} activities of the public sector in the block k in the region r and normalized subindex I_{kr} for block k in region r are calculated using formulas

$$PSP_{kr} = \sum_{i=1}^{i_k} I_{ir}\alpha_i, \quad (8)$$

$$I_{kr} = \frac{PSP_{kr} - PSP_{kr}^{\min}}{PSP_{kr}^{\max} - PSP_{kr}^{\min}}, \quad (9)$$

where i_k is the number of indicators in block k; α_i is the weight of indicator i; $PSP_{kr}^{\min}$ and $PSP_{kr}^{\max}$ are the minimum and maximum PSP_{kr} values in the sample for block k.

The composite index PSP_r represents the PSP in region r, normalized subindex I_r is the results of government activities in region r calculated using formulas

$$PSP_r = \sum_{k=1}^{8} PSP_{kr}, \quad (10)$$

$$I_r = \frac{PSP_r - PSP_r^{\min}}{PSP_r^{\max} - PSP_r^{\min}}, \quad (11)$$

where $PSP_r^{\min}$ and $PSP_r^{\max}$ are the minimum and maximum PSP_r values in the sample.

The PSP assessment was made for each of the 85 federal subjects (component regions were considered separately) for the period 2011–2020. Based on the data obtained, the rating of public sector performance of the Russian regions is then constructed.

(5) ***Analysis of results.*** The calculation of regional subindices and a composite public sector performance index makes it possible to assess the heterogeneity of performance results, including spatial one.

The Gini coefficient for the sample of composite indices is 0.206, which indicates low differentiation of PSP in Russian regions.

The median PSP_r was low, 0.341. This means that in most indicators, the majority of regions lag behind the leaders. Analysis by block subindices showed that this lag is more pronounced in the blocks Education, Science and Innovation, Transport Infrastructure, and Healthcare (Fig. 2).

The obtained estimates of the composite regional PSP indices show that in the southern regions of Asian Russia the performance of government functions is slightly worse than in northern ones. The public sector in the North Caucasus and regions of the Northwestern Federal District showed below-average performance results. The undisputed leaders of the ranking are Moscow and St. Petersburg (see Table 1). We deliberately did not remove them from the set, since it was important to get a picture of Russia as a whole, including the size of the gap between other regions and the leaders.

The compiled rating is in some sense reminiscent of the quality of life ratings in Russian regions, con-

Table 1. Leaders and outsiders in ranking of regions according to composite PSP index for 2011–2020

Place in ranking	Region	Sports and culture	Transport infrastructure	Healthcare	Education, science and innovation	Social support	Ecology	Safety	Economic development	**Composite index**
1	St. Petersburg	0.754	1.000	0.568	1.000	0.860	0.660	0.610	0.838	**1.000**
2	Moscow	0.476	0.945	0.407	0.976	0.260	0.743	0.687	0.772	**0.783**
3	Republic of Mordovia	1.000	0.342	0.801	0.688	0.567	0.795	0.623	0.346	**0.618**
4	Republic of Tatarstan	0.683	0.388	0.506	0.645	0.542	0.706	0.581	0.749	**0.577**
5	Belgorod oblast	0.863	0.562	0.408	0.425	0.395	0.812	0.734	0.672	**0.576**
6	Chukotka Autonomous Okrug	0.950	0.000	1.000	0.208	0.858	0.562	0.532	1.000	**0.550**
7	Magadan oblast	0.786	0.227	0.778	0.262	0.888	0.655	0.270	0.972	**0.536**
8	Oryol oblast	0.679	0.370	0.596	0.677	0.476	0.578	0.542	0.536	**0.510**
9	Nenets Autonomous Okrug	0.580	0.221	0.448	0.548	0.712	0.590	0.482	0.937	**0.506**
10	Sakhalin oblast	0.518	0.237	0.904	0.268	0.721	0.741	0.324	0.963	**0.498**
	...	...	...	...	...	...	...	...	...	...
76	Karachay-Cherkess Republic	0.295	0.285	0.267	0.264	0.501	0.570	0.666	0.329	**0.189**
77	Irkutsk oblast	0.382	0.280	0.430	0.293	0.544	0.297	0.325	0.446	**0.189**
78	Primorsky krai	0.447	0.306	0.289	0.208	0.371	0.605	0.251	0.554	**0.178**
79	Krasnodar krai	0.353	0.420	0.101	0.005	0.352	0.634	0.596	0.617	**0.171**
80	Chechen Republic	0.042	0.299	0.520	0.109	0.507	0.638	1.000	0.130	**0.159**
81	Zabaykalsky krai	0.626	0.268	0.498	0.201	0.479	0.314	0.170	0.342	**0.155**
82	Jewish Autonomous Oblast	0.576	0.328	0.566	0.028	0.593	0.000	0.206	0.481	**0.146**
83	Republic of Crimea	0.337	0.439	0.240	0.140	0.000	0.691	0.649	0.337	**0.124**
84	Republic of Ingushetia	0.000	0.267	0.194	0.292	0.195	0.680	0.896	0.000	**0.034**
85	Republic of Dagestan	0.060	0.299	0.036	0.000	0.209	0.656	0.872	0.285	**0.000**

Source: authors' calculations.

structed by the Agency for Strategic Initiatives[7] and RIA Rating.[8] They also assess the provision of the population with public goods. The methodological part of compiling these ratings largely coincides with the presented authors' development; however, our averaging of indicators over 10 years allows us to avoid market fluctuations in the positions of regions and composite regional assessments, which can happen when constructing a rating for one year. Thus, the leaders of the RIA rating are stable from year to year, but, e.g., Murmansk oblast in 2020 dropped to 43rd place from 36th in 2019, and a year later it ended up in 38th place. At the same time, the research problem of assessing the PSP forces one, first, to discard indicators that the state cannot influence (e.g., regional climate), second, to take into account the degree of

[7] See: Rating quality of life. https://asi.ru/govemment_officials/quality-of-life-ranking/ (accessed March 18, 2023).

[8] See: Rating regions by quality of life—2020. https://riarating.ru/regions/20210216/630194647.html (accessed March 18, 2023).

influence of the state on individual indicators, and third, to refrain from using data sources with subjective assessments (various public surveys on satisfaction with the work of the public sector as a whole and/or its individual areas).[9]

Rating of the socioeconomic situation of federal subjects compiled annually based on 18 indicators[10] takes into account indicators of the scale of the economy as terms, whereas in this study they are used to construct relative indicators. In addition, when compiling a rating by socioeconomic situation, RIA does not take into account the provision of social infrastructure (schools, hospitals, stadiums, etc.), and the participation of the public sector in forming the indicators taken into account is minimal, with the exception of indicators in the budgetary sector.

In view of the mentioned methodological differences and different purposes for constructing the considered ratings, the positions of Russian regions in them differ significantly from those determined by us: the correlation with the RIA rating for quality of life for 2020 was 0.35, with the rating of the socioeconomic situation of the RIA for 2020 being 0.21.

The presence of some regions—Chukotka Autonomous Okrug, Nenets Autonomous Okrug, Magadan and Sakhalin oblasts—in the top 10 of the developed rating is largely explained by high economic development indicators, as well as low population density, which is taken into account when calculating provision of infrastructure. At the same time, it can be seen that in these regions the transport block, which determines the mobility of the population and the availability of goods, sags. At the same time, the relatively weak block here is Education, Science, and Innovation (for the Nenets Autonomous Okrug, it is Health), which is due to the existing structure of the economy, reliance on shift labor, and import of equipment for the development of natural resources. In these regions, except for the Chukotka Autonomous Okrug, where the lack of roads naturally causes a low number of road accidents, the Safety sector is also problematic.

Therefore, it seems that when analyzing the resulting rating, it is important to consider each region in terms of blocks. Thus, in a region with a high composite index, there may be one or two sagging blocks, and a low assessment for these blocks cannot be balanced by a high assessment for another block, since there is no interchangeability between the goods assessed in them. For example, low indicators in the Healthcare block cannot be compensated by high indicators in the Education, Science, and Innovation or Economic Development blocks.

The practical value of the obtained assessments is that for each individual region, a set of recommendations can be drawn up for a targeted increase in significantly sagging indicators, detailing the target indicators quantitatively. For example, in order to achieve the Russian average level, Novosibirsk oblast will need to create 790 flat open sports facilities (+38%); build more than 29000 km of paved roads (+142%), 3700 km with improved surfaces (+40%); prepare and/or attract about 3100 medical personnel to the regional healthcare sector (+11%); significantly increase the volume of housing provided to needy families by 1400 per year (+136%); introduce an additional 8400 places in preschool educational institutions (+6%); carry out reforestation on an area of 4550 ha (+73%); etc. Similarly, calculated values can be presented for all problem areas of Novosibirsk oblast or any other region.

CONCLUSIONS

A review of studies of the activities of the public sector showed a lack of work on its comprehensive assessment based on Russian data in a regional context. We set and achieved the goal of assessing the PSP at the regional level using publicly available statistics. The methodology consists of constructing a composite index of 74 regional socioeconomic development indicators, in the formation of which the public sector plays a key role. In contrast to existing similar methodological developments, we increased the number of indicators taken into account and worked out the procedure for assigning different weights to individual indicators by assessing the influence of the state on them.

As a result of applying the methodology, a composite public sector performance index was obtained by region as well as subindices by blocks Sports and Culture; Transport Infrastructure; Healthcare; Education, Science, and Innovation; Social support; Ecology; Safety; and Economic Development.

The leaders of the constructed regional PSP ranking are Moscow and St. Petersburg. The public sector in the North Caucasus and regions of the Northwestern Federal District showed below-average results. In the southern regions of Asian Russia the performance of government functions is somewhat worse than in northern ones.

Overall, low differentiation was found work results public sector in Russian regions. At the same time, in most indicators, the majority of regions lag behind the leaders. The lag is more pronounced in the blocks Education, Science, and Innovation; Transport Infrastructure; and Healthcare.

We emphasize that the constructed rating, like most ratings mentioned in the article, provides only a relative assessment of the process or phenomenon under study. Thus, low index values do not indicate

[9] Criticism of subjective criteria is given in (Barinova et al., 2017, p. 10).

[10] See: Rating of the socioeconomic situation of regions—2021. https://riarating.ru/infografika/20210531/630201353.html (accessed March 18, 2023).

poor performance of government functions in the region, but that in other regions the public sector performed better.

The results can be used by authorities to identify the relative weaknesses of the regions and to develop directions for adjusting government programs. We can recommend for implementation within the framework of the public-private partnership mechanism, first of all, those projects that are able to close the weaknesses of individual regions and/or macro-regions. The advantage of the methodology is the ability to identify leading regions by blocks in order to search, adapt, and translate from them the best administrative cases, projects, and practices in relevant areas, defining the pool of interregional interactions. In addition, it is possible to identify spatial gaps at the level of individual areas in order to formulate priorities for federal regional and/or sectoral policy.

For a more detailed elaboration of practical recommendations, it is necessary to further develop the study in order to assess the effectiveness of the public sector in Russian regions; i.e., it is necessary to compare the results and the costs of achieving them.

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CONFLICT OF INTEREST

The authors of this work declare that they have no conflicts of interest.

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