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REGIONAL PROBLEMS

Spatial Dialectics of Public–Private Partnership in Russia

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Abstract—The article presents an analysis of spatial trends in the development of public–private partnership (PPP) in Russia. The analysis is performed on a large base of PPP projects and reveals the main spatial imbalances and contradictions, uneven development of PPP across regions of the Russian Federation, and prevalence of small projects. It is emphasized that improving the institutional environment of territories is important for intensification of PPP processes. The current distribution of PPP investments across the Russian Federation indicates that the goals of improving the population's quality of life prevail over the national-economic goal of strengthening connectivity of the country's territory.

Keywords: public-private partnership, infrastructure projects, investments, regions

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The issue of spatial trends in the development of public–private partnership (PPP) in the Russian Federation is topical for the following reasons.

First of all, it should be noted that the information field around PPP is constructed primarily on the industry principle. Scientific papers discuss the application of PPP in transport [1–4], energy [see, for example, 5], social and innovation spheres [5–10], and agriculture [11, 12], etc. With the exception of PPP week, an annual event that brings together all areas of PPP, all scientific and practical events are tied to separate infrastructure sectors.

Some studies evaluate various organizational forms of PPP [7, 13, 14], their advantages and disadvantages. A large body of work is dedicated to analyzing trends in the PPP market in general [see, for example, 15] and the possibilities of applying foreign PPP experience in the Russian Federation [16, 17]. The essential foundation of all PPP research is theoretical studies of V.G. Varnavskii and others [18, 19].

The spatial aspect of PPP development is considered in analyses of regional cases and in the annual rating of regions by level of PPP development [20] published by the National PPP center. No in-depth analysis of PPP development in its spatial aspects or attempts at forecasting it could be found in scientific literature.

Meanwhile, numerous regional studies propose expanding the applications of PPP to solve a certain range of regional problems [21, 22], predict positive results of the use of PPP [23], and present merging business and state efforts as a panacea for stagnation in socioeconomic dynamics [24]. PPP gets singled out within the system of tools for regional development support as an effective tool for intensifying investment processes in socially significant industries.

Concluding PPP agreements involves coordinating the positions of the public and private parties, reconciling their divergent interests, and smoothing out contradictions. In view of such dual nature of the considered mechanism, a dialectic approach to studying spatial aspects of PPP development seems applicable. Forecasting PPP development in its spatial aspects is possible through considering such questions as whether spatial contradictions of the PPP mechanism serve as a source of self-improvement or whether quantity of PPP projects is transformed into quality. The objective of this paper is to describe spatial trends in the development of PPP in Russia.

Conceptual framework and information base. In this study, the concept of PPP is considered not only in its strictest sense (agreements concluded in compliance with the Federal Law of 13.07.2015 N 224-FL, On Public–Private Partnership, Municipal–Private Partnership in the Russian Federation...), but includes all forms of PPP that exist in Russia, such as lease contracts with investment obligations, investment contracts, life cycle contracts, concession agreements, the corporate form of partnership, PPP/MPP agreements, cooperation agreements, energy service contracts, i.e., all forms that allow private capital to participate in the implementation of socially significant projects and initiatives.

The information base of this study consisted of publications of the National PPP center [25], the

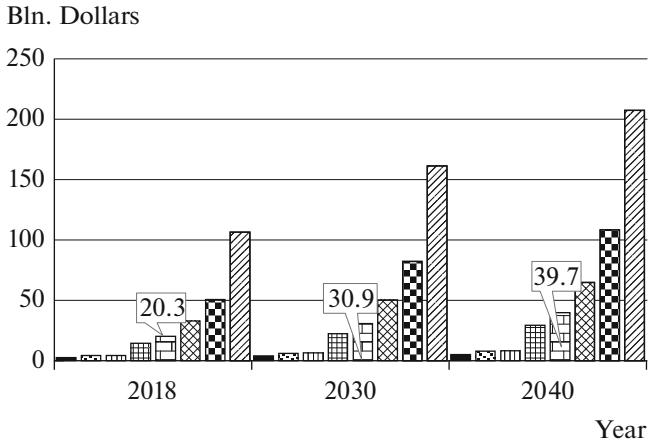

Fig. 1. Dynamics of the infrastructure gap up to 2040.

■ Japan; ▩ UK; ▥ RSA; ▦ India; ▤ Russia; ▨ Brazil; ▩ China; ▨ USA

Source: compiled by the author based on Global Infrastructure Hub, OECD, World Bank.

infrastructure projects database of the ROSINFRA platform [26], and information about tenders for the right to conclude concession/PPP/MPP agreements from the official website of the Russian Federation for posting information about bidding [27].

Note that the information in these sources pertains to projects that have already been initiated, while forecasting the future volume of obligations contracted under PPP requires information about promising, promoted, and potential projects. The most useful source of data on such projects is regional registers of PPP projects[1], which list all projects that comply with the principles of PPP. There are also examples of scientific papers that justify applying PPP to individual projects (see [28, 29]).

Needs and opportunities of PPP development in regions of Russia. To justify potential volumes of the PPP market are conventionally used the indicator of the accumulated need for investments by industries in which the use of PPP is acceptable or the indicator of the infrastructure gap.

The National PPP center estimates the projected investment needs across infrastructure sectors of the Russian Federation at 25.9 trillion rubles by 2024, of which 17.8 trillion accrues to the transport sector, 5.5 to the energy sector, 2 to the information and communication sphere, and 0.5 to water supply and sanitation[2].

Infrastructure gap is defined as the difference between the infrastructure investment needed and the resources required to meet this need. The World Bank provides estimates of that indicator by country. In Russia the infrastructure gap will by 2030 reach $39.7 billion (Fig. 1).

How much does this "from upstairs" estimate of investment needs differ from the intentions of private investors and from the actual pace of project implementation? The ratio of opportunities and needs of implementations of PPP projects depends on the socioeconomic development level of the territory. The correlation coefficient between the GRP series for 2018 and the volume of PPP projects in the Russian Federation at the beginning of 2020 amounted to 0.81. Thus, GRP can be interpreted as an indicator of demand for infrastructure investment in the form of PPP, albeit with an understandable lag: the more large-scale the economy is at the moment, the more it will need PPP-based infrastructure support in the following periods[3].

However, as with any rule, there are exceptions: for example, although the Tyva Republic and Tyumen oblast are both leaders in PPP investment, the indicators of development of their economies are completely different. Also, the Chuvash Republic, the Altai Republic, Pskov oblast, and the city of Sevastopol all have relatively small GRPs but receive large amounts of PPP investment, while the developed Krasnoyarsk and Krasnodar krais and Republic of Tatarstan receive relatively insignificant amounts.

In addition to GRP, another possible indicator for assessing and forecasting public-private partnership in a region can act the number of registered enterprises as an indicator characterizing of the private party of PPP agreements in that territory. However, considerations about the fairly common practice of interregional PPP-related activity of companies cast doubt on the validity of this idea.

When determining the potential scope of PPP agreements that involve state funding, it is also important to consider the current strategy of the state regional policy: does it prioritize supporting leading regions or outsiders? Since the current vector is directed at supporting growth points, mid-level regions and underdeveloped territories should rely on their own fiscal space. Meanwhile, the correlation between the volume of agreements initiated within the framework of PPP in 2019 and the regions' consolidated budgets for the corresponding year (calculated by the authors) was only 0.32. This gives reason to

[1] See, for example, the Chukotka Autonomous Region Investment Portal. Register of PPP projects. URL:https://invest-chukotka.ru/gchp/reestr-proektov-gchp.
Investment Portal of the Novosibirsk Region. Register of PPP projects. URL: https://invest.nso.ru/ru/page/80.

[2] Simple and Honest about Infrastructure Investments and Public-Private Partnership in Russia: An Analytical Review. URL: https://pppcenter.ru/upload/iblock/0e4/0e47bb71822ded76-d93c0de43386dfb9.pdf.

[3] A clear relationship can be constructed by means of panel data analysis tools, but that is beyond the scope of the present study.

search for other factors that explain regional PPP activity.

Ultimately, launch and management of PPP processes largely depends on institutional factors: the local administrations' engagement into promotion of their projects, the quality of presentation of information on projects to wide audiences, and qualification level of local PPP specialists.

In particular, if each subject of the Federation had a register of PPP projects proposed for implementation, it would provide a clear idea of regional needs of infrastructure development that can be solved with PPP. Such data would be closer to "intentions," since they would come with the need for their implementation already justified and an initial assessment of the required investment resources already carried out with local conditions in mind. It would be best if each subject performed its own preparatory project justification work.

An existing way to accelerate the development of PPP processes in regions is the creation of teams that review projects and conduct public initiative procedures (i.e., opening and holding tenders for project implementation). Currently, such services are provided by the National PPP center and special departments of major Russian banks. At the moment, most regions and especially municipalities cannot afford such consultations, and local specialists often do not possess the skills necessary to implement PPP projects successfully and without making mistakes.

The issues most often named as "institutional failures" in PPP development at the regional level are the following: the lack of specialists with PPP qualifications; the procedure of interdepartmental interaction between executive authorities at the stage of development and consideration of PPP projects; the rules for making decisions on concluding PPP agreements for periods exceeding the approved budget obligation limits. Many regions do not have a list of objects for which a PPP agreement is planned or a well-developed procedure for making decisions related to implementation of PPP projects. Another often pointed out problem is the fact that there is no single body responsible for preparing and conducting competitive selection of private partners (concessionaires) and no established procedure for interdepartmental interaction during overseeing, supervising, monitoring, and maintaining registers of PPP projects [20].

In any case, the regions of our vast country can wait for private initiative almost indefinitely. However, some of them (those with fairly favorable investment climates) can hope for the attention of companies that implement PPP projects throughout Russia and extend their presence to territories where new interesting projects appear (for example, the VIS Group and others).

Currently, only 1% of projects (by number) are being implemented at the Federal level, at which funds, powers, and highly qualified specialists are available. A further 14% of projects are implemented at the regional level, at which decisions often depend on the Federal center (due to the high cost of projects), bank capital plays a large role, and a unified methodology for evaluating PPP projects is sorely needed. The main share of PPP projects falls on the municipal level. These projects are small in size, so it becomes clear that the volume of budgetary resources of territorial entities is definitely not the most significant factor when deciding on the project implementation.

The above reveals an upsetting and illogical dilemma of PPP. Major projects, such as the North-Siberian railway, Belkomur, Barentskomur, the Moscow-Kazan High-Speed Railway, economic significance of which was justified in various periods of development of the Russian economy, remain "suspended," their implementation gets consistently postponed, and the search for ways to implement them continues. In modern conditions, even Federal authorities cannot convincingly guarantee the pool of private investors their future income. The scope and significance of projects implemented at the municipal level is much lower, but, as proven in practice, such small projects can significantly improve the quality of life of the local population while demonstrating a sufficient level of economic efficiency. Provided good organization of work at the local level, these projects are implemented much faster, often with the involvement of regional or Federal funds. Thus, an imbalance between the powers available at the Federal level and the fact that the bulk of PPP projects is implemented at the municipal level is evident. In such circumstances, estimates of infrastructure needs at the macro level will always be much higher than the actual volume of investment (whether from state programs or from extra-budgetary sources) and the infrastructure gap will grow.

PPP inequality. In order to identify the spatial dilemma of PPP development, let us consider whether territories are equally "provided" with PPP projects and whether investment funds contracted under PPP are evenly distributed by territory.

The database of the ROSINFRA platform [26] contains and describes, as of March 2020, 4534 projects, with a total commitment volume of 5 477 110 billion rubles.

The largest number of PPP projects has been initiated in Amur, Kirov, Tambov, and Chelyabinsk Oblasts—over 210 in each, while Bryansk oblast has only two projects and Nenets Autonomous Okrug only one.

Capital intensity of PPP projects, naturally, also varies by region. Table 1 presents the leading in terms of PPP investment regions with corresponding amounts of contracted funds. The 15 considered regions received more than 2/3 of investment resources in all forms of PPP.

Table 1. Regions that received the most PPP investment, bln rubles

Region	Volume of PPP investment
Moscow	784.4
Tyumen oblast	668
Moscow oblast	463.6
Saint Petersburg	452
Tyva Republic	393.9
Samara oblast	179
Tver oblast	156.7
Republic of Sakha (Yakutia)	113.5
Rostov oblast	107
Volgograd oblast	91
Chelyabinsk oblast	89
Saratov oblast	80
Novosibirsk oblast	71.4
Chuvash Republic	69.6
Sverdlovsk oblast	61

Source: compiled by the author on data from the ROSINFRA platform.

The most expensive project is the Tobolsk "Integrated development of an industrial site for processing a broad fraction of light hydrocarbons" project (494.943 billion rubles), implemented in the form of an investment agreement. More than half of the projects have costs under 10 million rubles (Fig. 2).

For the purposes of analyzing the spatial distribution of PPP investments, two national IT projects should be excluded from the existing array of projects ("Creation of the Platon system" and "Creation of a system for digital labeling and monitoring turnover of products").

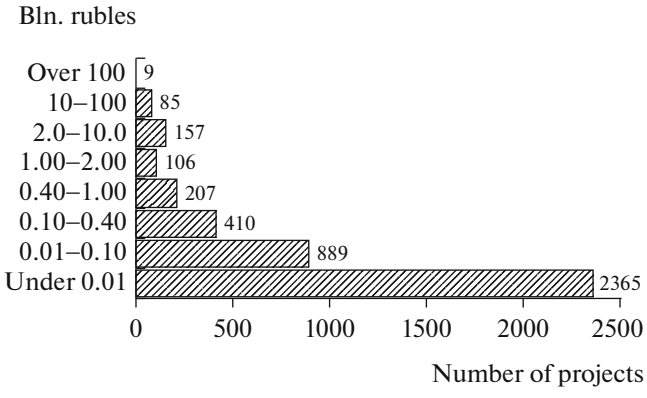

Fig. 2. Number of PPP projects in the Russian Federation by cost range

Source: compiled by the author based on data from the ROSINFRA platform.

Table 2 considers the provision of PPP investments from two points of view: provision for territory and provision for population. The results are summarized according to the federal districts belonging to the European and Asian parts of the country.

On the one hand, the most common area of PPP implementation in Russia and globally is the transport industry, the development of which contributes to improving connectivity of the country's territory. The problem of transport infrastructure development is the most acute in the Asian part of the Russian Federation, so it would be logical if capital-intensive transport projects were planned in these regions. However, less than 40% of PPP investments and only 25.6% of investments in the transportation sector are attributed to Asian Russia. The data show that the Far Eastern and Siberian Federal Districts clearly do not receive enough investment: while the share of their territories amounts to 40.6 and 25.47% of the country's territory respectively, they receive only 4.94 and 11% of investment. Meanwhile, the Central, Volga, and Ural Federal districts are contracted above their investment needs.

On the other hand, since PPP projects are focused on the needs of the population, the European part should receive more socially oriented investments. By that logic, the share of urban PPP investments should be high, but in actuality it is only 33.5% for the Russian Federation as a whole.

As a result, it is impossible to definitively determine which of the factors—social needs of the population or the objective of improving connectivity of the territory—plays a bigger role in the distribution of PPP projects. Rather, comparing indicators for Federal districts reveals that it depends on population size and density. The exception here is the underinvested Southern and North Caucasian Federal Districts. That can, for the most part, be explained by significant amounts of public investment in these regions under other tools of state support for territorial development.

The last two columns show the shares of the Federal districts in the consolidated budget of the subjects and in GRP, which indirectly represents the needs and possibilities of infrastructure investment of the corresponding territorial entities. It is obvious that the budget capacity of territories strongly correlates with the volume of accumulated contracted PPP investments. At the same time, the territorial structure of GRP differs.

The spatial distribution of the 133 suspended PPP projects requires separate attention. The reason for suspension may be cancellation of the implementation of the project as a whole, cancellation and/or termination of the tender, or termination of agreements. The database does not attribute the reason for suspension to the private or public partner, so identifying that reason requires careful inspection of each case.

With regard to the Europe/Asia division, the suspended projects are distributed almost equally—56

Table 2. Comparison of Federal districts by shares of volume of PPP investment, territory, population, budget, and GRP, %

Federal district	Share in the volume of PPP projects	Share in territory	Share in population	Share in the consolidated budget of the subjects	Share in GRP
Central	29.32	3.80	26.88	33.28	66.94
Volga	15.70	6.06	19.96	14.33	8.0
Northwestern	12.41	9.85	9.52	11.23	5.0
Ural	21.91	10.62	8.42	10.1	8.47
Siberian	11.0	25.47	11.67	10.36	5.14
Far Eastern	4.94	40.6	5.57	8.8	2.69
Southern	4.41	2.61	11.22	7.96	2.72
North Caucasian	0.31	1.0	6.77	3.93	1.04
European part	**62.15**	**23.32**	**74.35**	**70.74**	**83.7**
Asian part	**37.85**	**76.68**	**25.65**	**29.26**	**16.3**

Source: compiled by the authors on data from the ROSINFRA platform, the Federal State Statistics Service, and the Federal Treasury.

Table 3. Distribution of suspended PPP projects over regions of the Russian Federation

Region	Number of suspended projects	% of suspended projects in total number of projects initiated in the territory
Omsk Oblast	19	19.8
Tambov Oblast	17	7.8
Amur Oblast	12	5.7
Vladimir Oblast	11	24.4
Khabarovsk Krai	10	10.0
Kirov Oblast	9	5.7

Source: compiled by the author on data from the ROSINFRA platform.

and 44%. Table 3 lists the regions in which projects were suspended most often in the 2009–2019 period.

PPP in regions of the Russian Federation: retrospective and perspective. Spatial data disaggregation complicates forecasting PPP processes: it becomes extremely complex already at the level of Federal subjects.

The National PPP center provides a forecast of the number of projects launched by the accumulated total only for the country as a whole, by 2023 it is expected to reach six thousand projects. The trend is similar to a linear one. The proportions in which these projects will "fall" on the territory of the country cannot be predicted with any kind of certainty. Besides, the number of projects is not the only important aspect: their industry structure and investment volumes also matter, not to mention the need for a long-term, at least up to 2030, forecast for PPP development.

The regional agenda is complicated by different understandings of social significance of projects. While investments in education, sports, outpatient clinics, and tourism should obviously be qualified as investments for people, such projects as the aforementioned Tobolsk complex or, for example, development of a number of deposits in the Tyva Republic (Mezhegeyskoye, Ak-Sug, Kyzyl-Tashtyg, and Tardanskoye) can be considered such only through reasoning about employment and job creation. In some regions, the situation in that sphere really is acute, so the vague category of PPP projects "Industrial infrastructure" (at the moment containing 130 projects with total investment volume of 1293.243 bln rubles) can in a number of regions include purely industrial investment projects. For obvious reasons, the most common kind of PPP initiative in these cases is private-"interested party" and the recipient of benefits are known in advance.

As mentioned above, the National PPP center annually compiles a rating of Russian regions by the level of PPP development. That level is assessed by considering the values of three factors: regulatory support for the PPP sector, experience in implementing public-private partnership projects, as well as development level of the institutional environment, evaluated based on information about launches of comprehensive programs aimed at creating conditions favorable for PPP development and forming professional project teams in the PPP sector.

The top 10 regions are Moscow, St. Petersburg, Moscow oblast, the Republic of Bashkortostan, Samara oblast, Khanty-Mansi Autonomous okrug–Yugra, Novosibirsk oblast, Perm krai, and Tambov and Nizhny Novgorod oblasts. At the bottom of the rating are the Jewish Autonomous oblast, Nenets Autonomous okrug, Kurgan, Tver, Oryol, and Bryansk oblasts, the Tyva Republic, the Republics of Ingushetia, North Ossetia-Alania, and Kalmykia.

The data in Table 4 were compiled based on an analysis of the ratings of regions of Russia by level of PPP development for 2014–2019 [20]. At the end of

Table 4. Regions-leaders and outsiders by pace of PPP development in 2014–2019

Regions that actively develop PPP	Change in position in the rating		Change in the level of PPP development		Regions that neglect PPP	Change in position in the rating		Change in the level of PPP development	
Arkhangelsk Oblast	49	31	31.2	57.6	Khanty-Mansi Autonomous Okrug	20	1	46.2	90.0
Astrakhan Oblast	59	38	28.4	50.5	Chelyabinsk Oblast	60	17	28.1	78.7
Volgograd Oblast	47	32	31.3	55.0	Bryansk Oblast	58	82	28.8	17.8
Irkutsk Oblast	44	12	32.6	82.6	Jewish Autonomous Oblast	61	76	26.8	21.6
Kaliningrad Oblast	52	37	30.3	50.9	Krasnodar Krai	17	49	46.8	39.8
Kamchatka Krai	57	30	29.1	61.9	Pskov oblast	29	67	42.4	27.1
Krasnoyarsk Krai	55	13	29.3	80.2	Republic of Kalmykia	75	85	19.4	12.0
Altai Republic	72	34	21.1	52.0	Komi Republic	23	59	45.4	34.5
Republic of Bashkortostan	11	1	54.4	90.0	Republic of North Ossetia-Alania	73	84	19.9	13.4
Republic of Mordovia	63	42	26.1	46.0	Tyva Republic	48	82	31.2	17.7
Stavropol Krai	64	45	25.6	45.4	Tver Oblast	42	79	33.6	18.4
Tyumen Oblast	70	23	23.3	72.5	Yaroslavl Oblast	16	51	49.3	39.0
Khabarovsk Krai	31	11	41.6	82.9					

Source: compiled by the author based on [20].

2019, the rating methodology was changed taking into account the accumulated experience of working with PPP mechanisms, so the latest available ranking was omitted from consideration.

Thus, the Table 4 presents the regions that in 2014–2019 showed the most intensive development of PPP practices, as well as the regions that showed a seeming lack of interest and/or resources for developing this tool. Increases or decreases in the level of PPP development, expressed as a percentage, reflect the intensity of work related to PPP development in the region, while a change in a region's position in the rating indicates the effectiveness of this work relative to other regions. Internal specifics of some subjects of the Federation that tend to move lower in the rating may be explained by inertness of the government as a whole or higher priority of other tools of regional development.

Among outsiders, ranking drops were caused by the only and/or one of the major PPP projects in the region coming to an end (the volume of investments in PPP projects is one of the key indicators in the rating). In rare cases, the cause lay in definite institutional failures (Krasnodar krai).

Note that among the 10 outsiders, only two regions are from the Asian part of the Russian Federation; among the leaders, seven subjects are from the European part of the country and eight subjects are from Asian Russia.

Regions of three types can be observed among the leaders.

1. Regions in which a growing number of similar (related to the same sphere) projects are being implemented, currently at the investment stage. For Volgograd, Irkutsk and Kaliningrad oblasts, Krasnoyarsk krai, and the Republic of Bashkortostan that sphere is the energy and utilities sector, for Stavropol krai—agriculture, hunting, and public amenities, for Khanty-Mansi Autonomous okrug—the energy and utilities sector and education. That means that these regions are making the most of the competencies they have acquired in a particular PPP area. As it turns out, that is enough to get to the top of the rating (for example, the Republic of Bashkortostan and Khanty-Mansi Autonomous okrug are currently in the first place). Note that the absolute leaders of the rating (the six regions with maximum points) also do a lot of work and are quite consistently successful in developing PPP practices in their territories. During the 2014–2019 period, the leaders dropped below the 10th position in the rating only a few times: the Republic of Tatarstan fell from the 2nd to the 22nd place, Leningrad oblast from the 6th to the 16th place, and Sverdlovsk Oblast from the 7th to the 14th place. Even then, they did not lose points, but only lagged behind the pace of PPP development of other regions.

2. Regions that methodically increase the number and diversify the portfolio of PPP projects, improving and expanding their PPP competences. Thus, Tyumen oblast has 119 projects in the fields of education, healthcare, tourism, food industry, scientific infrastructure, and heavy industry under implementation.

3. Regions in which the move up the rating was caused by one or two major projects that happened to take place in the region. In Arkhangelsk oblast that was "Creation of a production and logistics complex for storage and repair of property of the Armed Forces of the Russian Federation," in Astrakhan "Creation of a positron emission tomography center," in Kamchatka krai "Construction of an airport complex," in the Altai Republic "Construction of the hotel complex Altay Wellness Village" on lake Teletskoye in the Turochak district and "Creation of a production complex of full-cycle bioproducts based on medicinal raw materials and products of deer and maral breeding," in Mordovia "Construction of an infrastructure facility for the 2018 FIFA World Cup," namely a four-star hotel. It can be observed that in these cases the decision to create the objects in question depends on factors that are external to the region and, therefore, cannot be predicted based only on analysis of regional needs.

Conclusions. To sum up, the analysis of current trends in the development of PPP in the Russian Federation revealed the following spatial dilemmas.

A comparison of needs and opportunities for implementing the mechanism of PPP investment in a given territory showed that the configuration of institutional parameters of a territorial entity is more important for intensifying launches of PPP projects than the territory's level of economic development and budget capacity.

As with any kind of planning and forecasting, considering the development of PPP in the Russian Federation calls for a more accurate and comprehensive understanding of the regions' infrastructure needs. What is more important—justification of the national economic significance or local needs supported by local initiative? The motivation prevailing in Russia at the moment is the latter, as confirmed by the demonstrated disproportion between the powers available at the Federal level and the fact that the bulk of PPP projects has in recent years been implemented at the municipal level.

Data on the dynamics of PPP development by regions of the Russian Federation show that two-thirds of all PPP investments are contracted in 15 regions. However, the process of popularizing PPP practices has been more successful in the Asian part of the Russian Federation, despite the distance from the Federal center and the lack of budget resources.

Considering the main purpose of PPP as a tool for implementing socially significant projects revealed that the goals of improving the quality of life of the population prevail over the national-economic goal of strengthening connectivity of the country's territory by creating additional transport routes. At the same time, needs of enterprises have significant sway: objects of the "Industrial infrastructure" category occupy a huge share in the total volume of PPP investments (about a quarter).

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

REFERENCES

1. I. E. Levitin, *Development of Public-Private Partnerships in Transport* (VINITI, Moscow, 2010) [in Russian].
2. Ya. Yu. Pavlova and A. S. Golovina, "Preconditions for the development of public-private partnership in the transport and logistics infrastructure of the Republic of Mari El," Vestn. Marii. Gos. Univ., Ser.: S-kh. Nauki, Ekon. Nauki **5** (2), 254–264 (2019).
3. V. A. Tsvetkov, K. Kh. Zoidov, and A. A. Medkov, "Public-private partnership: The main form of the implementation of the transport and transit potential of Russia," Ekon. Reg. **13** (1), 1–12 (2017). https://doi.org/10.17059/2017-1-1
4. E. V. Gilenko, "Statistical analysis of the dependence of the number of public-private partnership projects in the transport sector in the regions of the Russian Federation on various factors," in *Public-Private Partnership in the Field of Transport: Models and Experience 2018. Conference Abstracts* (St. Petersburg, 2018), pp. 16–26.
5. V. I. Nefedkin, O. P. Fadeeva, and D. R. Ginzburg, "Concessions in heat supply: Investments instead of subsidies," EKO, No. **3**, 37–56 (2019).
6. E. B. Zav'yalova and M. V. Tkachenko, "Problems and prospects of applying the mechanisms of public-private partnership in the social sectors," Vestn. Ross. Univ. Druzhby Nar., Ser.: Ekon. **26** (1), 61–75 (2018). https://doi.org/10.22363/2313-2329-2018-26-1-61-75
7. D. N. Efremov, "Typology of public-private partnership forms in education," Ekon. Zh., No. 1, 120–128 (2012).
8. E. I. Babenko and M. A. Starlychanova, "Prospects for the development of public-private partnership in the sports industry," Vestn. Akad. Znanii, No. **2**, 25–28 (2019).
9. V. L. Adzhienko and N. N. Kosinova, "Strategic analysis of the institute of public-private partnership in health care," Farm. Farmakol. **5** (4), 380–400 (2017). https://doi.org/10.19163/2307-9266-2017-5-4-380-400
10. N. V. Gorbacheva and G. A. Untura, "Assessment of the impact of state support on the financial results of an innovative project of public-private partnership," Ross. Zh. Menedzh. **13** (4), 105–134 (2015).
11. N. V. Ukolova, L. N. Alaikina, N. A. Novikova, and O. K. Kotar, "Public-private partnership in the development of agriculture in Saratov oblast," Vestn. Sarat. Gosagrouniv. im. N. I. Vavilova, No. **7**, 97–100 (2013).
12. E. A. Bessonova and N. S. Gridchina, "Public-private partnership in the agro-industrial complex: International experience and Russian practice," Izv. Yugo-Zapadn. Gos. Univ., No. 3, 111–120 (2016).
13. V. F. Popondopulo, "Concession agreement: A legal form of public-private partnership," Izv. Vyssh. Uchebn. Zaved., Pravoved., No. 6, 255–268 (2007).
14. N. V. Reznichenko, "Models of public-private partnership," Vestn. S.-Peterb. Univ., Menedzh., No. 4, 58–83 (2010).

15. E. N. Egorova, I. V. Mukhomorova, A. N. Maloletko, and P. V. Solodukha, "The current state and development trends of public-private partnership in Russia," Sots. Polit. Sotsiol. **15** (4), 17–25 (2016).
16. V. G. Varnavskii, "Management of public-private partnerships abroad," Vopr. Gos. Munits. Upr., No. 2, 134–147 (2012).
17. F. M. Ibyatov, "Foreign experience in implementing public-private partnership projects in the field of healthcare and education," Upravlenie **7** (1), 35–39 (2019). https://doi.org/10.26425/2309-3633-2019-1-35-39
18. V. G. Varnavskii, "Public-private partnership: Certain problems of theory and practice," Mirovaya Ekon. Mezhdunar. Otnosheniya, No. 9, 41–50 (2011).
19. M. A. Deryabina, "Public-private partnership: Theory and practice," Vopr. Ekon., No. 8, 61–77 (2008).
20. Rating of Regions by the Level of Development of Public-Private Partnerships. https://rosinfra.ru/digest/rating/views.
21. V. B. Batievskaya, "Current problems in development of single-industry towns of Kuzbass and their potential solutions," Vestn. Altai. Akad. Ekon. Prava, No. 3-2, 15–27 (2019).
22. S. M. Lavlinskii, "Public-private partnership in a natural resource region: Ecological problems, models, and prospects," Stud. Russ. Econ. Dev. **21**, 71–79 (2010).
23. E. A. Shevchenko, "Public-private partnership as a condition for the development of regions," Eur. Soc. Sci. J., No. 8, 159–164 (2017).
24. A. I. Tatarkin, D. A. Tatarkin, and E. N. Sidorova, "Partnership between government and business in the implementation of territorial development strategies," Ekon. Reg., No. 4, 18–30 (2008).
25. National PPP Center. Analytics. https://pppcenter.ru/analitika.
26. ROSINFRA Infrastructure Projects Support Platform. https://rosinfra.ru/project.
27. The Official Website of the Russian Federation for Posting Bidding Information. PPP. https://torgi.gov.ru/lotSearch1.html?bidKindId=6.
28. E. I. Lazareva and E. V. Roshchina, "Models of reconciliation of interests in the management of eco-projects for sustainable development of the territory: A multicriteria approach," Drukerovskii Vestn., No. 6, 193–204 (2019). https://doi.org/10.17213/2312-6469-2019-6-193-204
29. O. V. Tarasova, "Prospects for public-private partnerships in infrastructure projects of the Arctic zone of the Russian Federation," in *Spatial Development of Modern Russia: Trends, Factors, Mechanisms, and Institutions,* Ed. by E. A. Kolomak (IEIE SB RAS, Novosibirsk, 2020), Chap. 6.4, pp. 393–416 [in Russian].

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