Infrastructure Type of Regional Economic Development as the Basis for the Stability of the Territory's Economy: Modern Scientific Landscape, Features of Initiation, Management and Promotion

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Abstract The scientific article is devoted to consideration of peculiarities of theoretical and methodological substantiation of processes of controlled infrastructure socio-economic development, as well as key aspects of initiation and promotion of infrastructure type of modernization of regional economic systems. The methodological basis of the research consists of works of A.G. Granberg, A.S. Novoselov, the works of V. V. Bukreev, A. Zh Bulikeeva, B. A. Delenyan, I. V. Zvereva, A. V. Kaplina, A. S. Marshallova and G. D. Kovalyova, M. G. G. Currently, the infrastructure type of regional economic development is a promising methodology of economics and management, focused on systemic modernization and improving the effectiveness of regional economic systems. However, its application requires a significant modernization of economic and management approaches in terms of setting and implementing applied infrastructure tasks at the regional level using modern management technologies, in particular spatial forsite and territory marketing. The implementation of the infrastructural type of development of regional economic systems ensures an increase in the stability of the formation, functioning and modernization of spatially localized economic systems due to the formation of economically justified prerequisites for increasing the efficiency of the use of all types of resources and opportunities as part of the potential of a particular territory.

Keywords Regional economy · Regional infrastructure · Sustainable development · Territory marketing

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1 Introduction

The development of regional infrastructure of all types means, in the modern sense of the word, the implementation of a systemic paradigm of spatial socio-economic development, which has signs of systemic, complex sustainability and sustainability. It is the regional type of infrastructure development that will ensure the solution of significant national economic tasks in terms of "creating new and developing the economic potential of existing territorial centers of economic growth, reducing internal and interregional barriers to the mobility of all factors of economic activity, optimizing infrastructure costs and growing regional and national competitiveness of products and manufacturers in domestic and international markets".

2 Methodology

In modern regional economic science, the scientific landscape of regional infrastructure is one of the least developed in comparison with other categories (Table 1).

The interest of domestic researchers in the main categories of the regional economy increased significantly in 2010–2020, especially in terms of the problems of the formation and functioning of regional economic and socio-economic systems, as well as regional aspects of economic development and growth processes.

For the period 1900–2009, the total volume of publications on the problems of regional economic systems in the RSCI amounted to 52 units, and in 2010–2020—already 749 units, a similar dynamic was accompanied by a consideration of regional socio-economic systems (respectively 15 and 280 units).

In terms of regional development, the total volume of publications in the RSCI amounted to 865 units in 1900–2009, and already 5936 units in 2010–2020, on topics related to regional aspects of economic growth—18 and 116 units, respectively.

Against this background, research attention to the problems of regional infrastructure and its market direction was much less popular. During the period 1900–2010, 31 scientific works on regional market infrastructure (including 6 on regional market infrastructure) were presented in the RINC, during the period 2010–2020 this number grew to 503 units (according to regional market infrastructure—up to 11 units).

The scientific and methodological basis of this study was determined by existing research and publications on the problem posed by such scientists and researchers as: Bukreev V. V. (Bukreev 2017) and Kaplina A. V. (2013). The materials from The Modeling the formation of territorial-industrial complexes (Modeling the formation of territorial-industrial complexes 1976) and Regional and municipal management of socio-economic development in the Siberian Federal District (2014) were used as a theoretical basis for this study.

Table 1 Publication activity in RSCI by basic categories of regional economy

Categories of regional economy	Articles in journals	Books	Conference proceedings	Deposited manuscripts	Theses	Reports	Patents
1	2	3	4	5	6	7	8
Regional economic system							
1900–2009	34	8	5	0	5	0	0
2010–2020	565	31	145	1	5	1	1
Regional socio-economic system							
1900–2009	4	4	4	0	3	0	0
2010–2020	205	14	56	0	3	1	1
Regional development							
1900–2009	356	193	173	95	42	6	0
2010–2020	3906	329	1612	8	69	9	3
Regional economic growth							
1900–2009	11	2	1	0	4	0	0
2010–2020	76	7	31	0	2	0	0
Regional infrastructure							
1900–2009	7	14	8	0	2	0	0
2010–2020	372	29	92	1	9	0	0
Regional market infrastructure							
1900–2009	3	2	1	0	0	0	0
2010–2020	5	3	3	0	0	0	0

Source Compiled by the author according to elibrary.ru 5.Zvereva (2015)

3 Results

The regional infrastructure and its market component within the territories of the Russian Federation for the period 1990–2020 underwent numerous quantitative and qualitative changes, largely determining the direction, scale and specificity of regional processes of economic and socio-economic development. Features of regional infrastructure development are affected in the fundamental works of A. G. Granberg, A. S. Novoselov, developed in the studies of V. V. Bukreev, A. Zh Bulikeeva, B. A. Delenyan, I. V. Zvereva, A. V. Kaplina, A. S. Marshallova and G. D. Kovalyova, M. G. Nikolaeva, N. V. Mordovchenkova and M. E. Pavlova.

When describing the fundamental model of the regional economic mechanism, A.G. Granberg does not directly name infrastructure industries, indicating, however, their need as federal regulatory systems that have a significant impact on such subsystems of the regional economy as the natural environment, production, gross accumulation and final consumption Granberg (2004).

We need also note that when studying the phenomenon and specifics of interregional trade, the respected author relies on the ideal market model and the absence of significant interregional barriers, assuming the materiality of the mechanism of price equalization for homogeneous products in related markets, due to the objective nature of transport and logistics expenses for the movement of goods between production and consumption centers.

In further attempts at descriptive research and modeling of the core of the regional economy, A. G. Granberg notes the systemically important fundamental role of the following regional economic processes:

- intraregional production of market and non-market economic benefits;
- the vital activities of the population of the Territory;
- financial flows accompanying the formation and expenditure of the regional budget;
- the relationship between these processes;
- indicators reflecting the direction and dynamics of the socio-economic development of the Territory (2004).

We emphasize that the author does not distinguish between the categories of territory of the region, regional economic space, economic environment and system, attempting to generalize them in a single term "economy of the region," although these subsystems are functional and have significant features of intersystem interaction, critical for the formation of the results of the functioning of the economy of a particular region and the management of its economic and socio-economic development.

A. S. Novoselov conducted a fundamental analysis of the evolution of methodological approaches to the implementation and evaluation of effective regional economic management, which identified 4 independent stages of qualitative evolution of scientific tools designed to ensure the manageability of regional economic processes, implement specific principles and priorities of regional development, introduce progressive management technologies and approaches to a complex multifunctional and multidimensional economic system of regional coverage (Novoselov 2008).

It should be noted that the initial stage of regional economic management, which was developed in 1970–1980 and took into account the need to develop the resources of the regional economic space, was precisely the infrastructure approach, implying the creation of specific territorial-industrial complexes as industrialized localized economic systems, provided with a full-fledged infrastructure of all types for economic activity and integrated into the national economic space (Larina 1979).

"Large TPC refers to a planned, proportionally developing set of steadily interconnected objects of sectors of the national economy (industry, agriculture, construction, transport, non-productive sphere), which are created to jointly solve one or more large national economic problems, concentrated on a relatively limited and necessarily compact (unconnected) territory with such a set and size of resources that are sufficient for TPK to participate in the solution of large people (Larina 1979).

"They make it possible to save labor, reduce capital investments, use natural resources in a comprehensive and rational manner, accelerate the timing of the creation of individual facilities and get a quick return on investments" (Larina 1979).

It should be emphasized that in the approach under consideration, the infrastructural provision of a specific localized spatial and economic system—TPC—was considered as a prerequisite for its functioning in the focal format of regional economic activity, which implied the selective development of priority natural resources of a particular territory. We also note that the economy of a particular region may not have meso-level specialized economic systems capable of economically efficient production and export of economic benefits beyond regional borders. In addition, the objective basis for the formation of the TPC was the "planned task for the supply of products," which in the modern Russian economy has been replaced by a poorly justified fiscal burden, which has already caused the degradation and disappearance of entire industries and economic activities.

When trying to formalize the system of the regional economy and identify significant relationships between its entities (planning and management, financial, information), A. S. Novoselov avoids identifying and naming the meso-level of the economic system, actually considering the economic entities of the micro-level (various enterprises and firms) and their connection and interaction with macro-level structures (represented in the figure bodies and institutions).

In the author's visualization, the infrastructure component of the regional economy is not represented at all, infrastructure functions were not included in the number of significant and significant connections between geographically localized economic entities, the relationships of the entities themselves in the regional economic space were not identified and analyzed, the phenomenon of openness of the regional economy and the possibility of intraregional/non-regional maneuver by all types of resources were ignored. At the same time, when implementing an empirical study of the features of the implementation of the state management function in relation to the management of regions of various types within the Siberian Federal District, A. S. Novoselov notes the need to consider infrastructure in the context of the composition and significance of regional economic development factors (Novoselov 2008).

The author's development presents an almost linear connection between the level of development of market infrastructure and the type of region allocated by the level of economic development: economically developed regions have a developed infrastructure, and depressed regions have an undeveloped one. However, when developing the methodology for monitoring and diagnosing regional economic processes and situations, the respected author again goes away from consideration of specific problems of infrastructure security on a territorial scale.

As a conclusion to the critical consideration of the above approach, we note that the infrastructure direction of the development of regional economic systems is named in it, but was not properly considered as a systemic factor that allows the development of the available resources of the regional economic space and is critical for the initiation and development of targeted regional and interregional economic processes.

A. Zh Bulikeeva in the author's study of the regional social infrastructure proposed an original methodology for joint assessment of the level of infrastructure security and quality of life, having received in the end an interesting but ambiguous classification of regions according to the criteria considered (Bulikeeva 2013).

The author came to an extremely interesting conclusion: the quality of life of the population of the territories is not in direct linear connection with the development factor of regional social infrastructure, and in some cases may directly contradict it! We note the promise of such empirical studies and the need to introduce additional factors that allow us to identify and assess the real nature of the interconnectedness and interdependence of infrastructure capabilities and the effectiveness of regional socio-economic processes, we also note the need to consider and evaluate the importance of other functional types of regional infrastructure for the functioning and development of the economy of specific regions.

I. V. Zvereva notes the need to allocate and consider regional infrastructure as an independent complex in the region's economy, focused on the provision of various services to material production sectors (in contrast, the author does not explain the difference between infrastructure and services). At the same time, the author refers to the actual production, as well as social, environmental, market and management types of regional infrastructure, noting its following significant features:

- the lack of uniformity in the provision of infrastructure capabilities for specific territories and the direct connection between infrastructure security and the level of socio-economic development of locations;
- regional infrastructure is considered by the author as one of the external factors determining the results of the functioning of the region's economy (without additional justification);
- promoting regional infrastructure development has a delayed multiplier effect on all types of regional economic processes (Zvereva 2015).

Agreeing with the substantive part of the author's message, we note the ambiguity of axiomatic assumptions regarding the consideration of regional infrastructure as an external development factor for the regional economic system, as well as very narrowed ideas about the interest and opportunities of regional authorities in the development of infrastructure.

In a study of the content and prospects for the implementation of regional policy implemented by A. S. Marshalova and G. D. Kovaleva under the leadership of A. S. Novoselov, the principle of advanced development of regional infrastructure is assigned to the long-term priorities of regional development (Marshalova et al. 2016).

Unlike the earlier works of A. S. Novoselov, in the study under consideration infrastructure development is included among the priority interests and opportunities of all stakeholders of the regional economy. At the same time, we fundamentally disagree with the author's conclusion regarding the lack of opportunities for the constituent entities of the Russian Federation or municipalities, as well as the population or certain types of corporate entities to develop regional infrastructure.

M. G. Nikolaeva and N. V. Mordovchenkov proposed a conceptual classification of the main types of regional infrastructure, indicating the need to consider it and

its characteristics as an independent subsystem in the regional economy (Pavlova 2015).

The authors see the economic function of the regional infrastructure in ensuring the streaming of all types of resources of regional market economy entities, "this is socially auxiliary capital that ensures the orderly and sustainable development of the regional economy on the basis of a set of conditions necessary for economic activities within a specific territory" (Nikolaeva and Mordovchenkov2010). At the same time, the authors emphasize the multiplicative nature of the factor of regional infrastructure security in relation to the growth of the quality of life of the population of the territories, recorded by them in relation to the regions of the Volga Federal District in 2001–2008 (which, as previously shown, is not a relevant relationship—A. Z. Bulikeyeva (2013), and is not confirmed, for example, by a joint analysis of labor productivity or migrations of various types). Moreover, for example, A. N. Kalashnikov in the author's study of problems of socio-economic differentiation in the Belgorod region emphasizes the importance not only of specific quantitative differences in various socio-economic parameters within a particular territory, but also the need to assess their perception, both by the resident population and potential migrants (Kalashnikov 2020).

We consider the most interesting and informative scientific development in terms of functionality and national economic significance of the regional infrastructure of recent years to be the approach of B. A. Delenian, who formulated a strategic infrastructure function in the regional economy and presented an original classification of its sub-functions (Delenyan 2019). The author proposes to define the regional infrastructure as "a set of systems, entities and elements that ensure the use of cash (from regional economic space) and deficit (through the use of interregional economic ties) resources in the activities of entities and institutions of the economy of the region, "its strategic function is seen in" the formation of a regional economic environment as a set of systematized, assessed, mobilized and ready-to-use resources necessary for initiating economic processes by entities represented in the economy of the region, "and includes among the key infrastructure sub-functions" 1. The possibility of initiating and safely conducting legal economic activities by various entities and institutions located within the regional economic system. 2. The possibility of obtaining a positive operational result of economic activity due to the use of absolute and relative advantages of the region. 3. Equal and equitable access to infrastructure resources (factors of production, goods, services, information) necessary to initiate economic activities (systematization of availability and assessment of economic efficiency of use of resources presented within the territory, regional and interregional maneuver). 4. Damping of fluctuations in price and non-price regional economic conditions outside the set of internal reserves and reserves, as well as regulatory management influences 5. Regional infrastructure as a set of specific activities, on the basis of which the emergence, development, functioning of commercial and non-commercial structures—entities and institutions of the regional economy are possible. 6. Contribution to the formation of the main (GRP; GRP infrastructure capacity) and final (incomes of the population—workers and owners) results of the functioning of the regional economic system" (Delenyan 2019).

4 Conclusion

The approaches considered provide a conceptual basis for further fundamental and exploratory research in terms of the functional and national economic significance of certain types of infrastructure as part of specific regional economic systems, and substantiating the prospects for building up a specific type of regional infrastructure capacity in view of the relevance of spatial development challenges in the coming years, especially in addressing systemic socio-economic problems, without which regional competitiveness and productivity growth priorities cannot be achieved, both domestically and internationally.

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