

Regional Service Potential as a Factor of Attractiveness of Rural Settlements

V N Dyachenko¹, V V Lazareva²

¹Economic Research Institute FEB RAS, Khabarovsk, Russia

²Amur State University, Blagoveshchensk, Russia

E-mail: v_lazareva12@mail.ru

Abstract. The article is devoted to the urgent problem of regional development - the assessment of how the level of the service potential's development of different level administrative centers influence the attractiveness of rural settlements. The prevailing downward trend in the population of rural settlements significantly limits the possibility of developing a complex of social infrastructure in them. As a result, improving the living conditions of the rural population is decisively determined by the availability of services provided outside. The hypothesis of the study is that the differentiation of the service potential's development of administrative centers has an impact on the change in the population of rural settlements by determining the availability of services. The author's methodology for assessing the impact of the the service potential's development of different level administrative centers on the attractiveness of villages was used following the example of the Amur Region, which has an agricultural orientation. It is shown that the low level of the service sector's development of the regional centers does not allow to perform the functions of servicing the rural population of the near-by villages fully. It is concluded that there is a necessity to correct strategic plans for the spatial development of the region. Measures are proposed to improve the living conditions of rural residents by increasing the service potential of existing local service centers and developing a system of rural-urban relations.

1. Introduction

Despite the measures taken to support the development of the rural economy, an active policy to improve the living conditions of the rural population, the process of degradation of the rural settlement system remains a stable trend, which isn't going to change. An important and decisive reason is the low level of living conditions, leading to the outflow of the rural population.

The process of spatial polarization is largely determined by the modernization of the economy service sector. The global trend of the growth in the service sector includes spatial transformations, as well as a concentration of innovations in the largest and most developed settlement centers.

In many respects, it is determined by the development of high-tech types of services, involving the use of complex and expensive equipment, which requires highly qualified personnel and specialized training. Differentiation of consumer interests stimulates the growth of the specialized services sector, the demand for which can be ensured in the required amounts only in large settlement centers. The concentration of the population in the agglomerations creates the necessary conditions for the large-scale development of other service types which are for the mass consumer.

With regard to assessing the prospects of rural settlements and the rural settlement system, the implementation of these trends means limiting the possibilities of overcoming the lag in the development of the infrastructure complex. Moreover, the differences will increase. Thus, the limited development of the social infrastructure of small settlements is offset by the fact that episodic and most periodic services are provided to rural residents in larger settlements, the availability of which becomes a determining factor in improving the living conditions of the rural population.

Despite the high activity of studies aimed at considering the general laws of spatial development, the dynamics of transformations in regional settlement systems, as well as transformations in the service sector, it is not possible to directly use the results in the practice of developing regional strategies. The country's high level of intra-regional socio-economic differentiation, significant spatial asymmetry doesn't allow the regional policy to find standard solutions, which causes the need for special studies.

2. Theory and research methodology

The methodological basis of the study is a combination of several theories that made it possible to identify a number of the most important regularities in the spatial development of regions ("center-periphery theory" by J. Friedman; "the concept of growth poles" F. Perroux, J.-R. Budville, P. Potier, H.R. Lasuena; "New Economic Geography" by P. Krugman, T. Mori, J. Harris).

Among the most important trends are the shift in the concentration centers of production and population, the increasing differentiation of regions in terms of socio-economic development, the integration and fragmentation of the economic space, the increasing unevenness at the intra-regional level [1, 2, 3].

Significant territorial imbalances are also developing in the service sector of the region, the growth of which destroys the single social space of the region, leading to a significant outflow of the population and the formation of degradation zones. For the first time, the researching the development of the service sector was substantiated in the theory of three sectors of the economy by J. B. Fisher and C. Clark. According to J.B. Fisher, transport, communications, trade and personal services were related to the tertiary sector of the economy and associated its development with the growth of population incomes, an increase in the number of people employed and an increase in the volume of products demand - services [4]. An important addition to the theory was the description by K. Clark of the mechanism of the emergence of a service economy [5].

In assessing the impact of the service potential of large settlements on the surrounding rural settlements, theoretical ideas become especially important, the beginning of which was based by the development of a model of "central places" by V. Kristler, supplemented by the theoretical principles of A. Lesh [6, 7].

The accumulation of knowledge about the processes taking place in the country was carried out mainly during analyzing the transport accessibility of supporting multifunctional settlements (SMSs) or population service centers (PSCs) of different levels [8, 9, 10, 11]. The formation of typologies of rural settlements according to the criterion of "proximity to the city [12, 13, 14, 15] is becoming more widespread.

Based on the provisions considered, the authors developed a methodology for assessing the impact of the service potential of administrative centers of various levels on the attractiveness of villages based on their typology. As criteria for the selection of types were used:

- the level of development of the district center as a local center of public services (LCOPSs). In the framework of the typology, the district centers are divided into those with a low, medium and high level of development and the regional center is separately distinguished;
- the degree of remoteness from the regional center. At the same time, the district centers that make up the distant periphery, the median, proximal and adjacent to the regional center are highlighted. On this basis, we have formed a typology of district centers taking into account the above criteria. In total, thus, 8 types of rural settlements were identified;

- the remoteness of the rural settlement (RS) from the district center, used as a characteristic of the transport accessibility of the service potential of the local center of public services.

When assessing the impact of population service centers on the attractiveness of settlements, we proceed from the fact that the final indicator is the indicators of migration and changes in the population [16, 17, 18].

The study is carried out on the basis of a systematically updated database of certification of settlements in the region, compiled by the authors on the basis of censuses in 1970, 1989, 2002 and 2010, the agricultural census of 2016 and current statistical data of subsequent years.

3. Trends in the modern system of agricultural settlements in the region

Assessing the regional situation, it should first be noted that one of the most important trends of the existing settlement system is the increasing differentiation of settlements, which makes the territorial imbalance deeper, an more increasing concentration of economic and social potential in some territorials and the development of destructive processes in the others. Along with a reduction in the number of rural settlements, significant changes are taking place in the structure of settlements.

Primarily due to the outflow of the population, the settlements are becoming less and less, there is noticeable reduction in the number of large villages and an increase in the number of the small ones. An important negative consequence of this process is an increase in the number of rural residents living in the small settlements, where living conditions are the worst due to their small size (table 1).

Table 1. The dynamics of settlements and the population.

Index	1989	2019
The number of settlements with a population of 501-1000 people	128	59
The number of settlements with a population of less than 50 people	21	71
The number of residents in settlements with a population of less than 50 people	504	1816
The number of residents in settlements with a population of 51-100 people	3044	4464

Thus, an increasingly significant part of rural residents does not have the prospect of forming a full-fledged complex of social infrastructure in places of residence. As practice shows, the vast majority of their needs can be satisfied by the services in larger settlement centers in the region, the service potential of which is focused not only on its use but also serves as an inter-settlement service.

The totality of such settlements are population service centers (table 2).

Table 2. Types of population service centers.

Name	Features
Regional Population service center	Here State institutions of executive and representative state power are located, there are higher educational institutions, the majority of secondary schools, specialized medical care institutions, supermarkets, consumer services, cultural centers.
Local population service center (administrative district center)	The infrastructure complex is focused on inter-settlement services, on the provision of episodic and most periodic services (district hospital, clinics, cinema, stores, pharmacies, public canteens, cafes, gas stations, a wide range of consumer services)
Local population service center (Settlement Administration)	The service sector is represented by shops, schools, feldsher-midwife stations, clubs, libraries, sports facilities and, in some cases, consumer services.

In the existing regional settlement system, district settlement systems take a key place, representing a group of municipalities within which the functions of local self-government and public services are

implemented. As part of the study, a typology of the district population service centers was created, it also took into account the differences in the level of development of their service potential and remoteness from the regional center [19]. The data obtained are presented in table 3.

Table 3. Dynamics of population changes in rural settlements with different remoteness from the district center for 1989-2019, in percent.

Remoteness of rural settlements from the district center, km	TOTAL	up to 20 km.	from 20 to 50 km.	over 50 km.	70 km and more
The nearest, adjacent periphery	181,7	484,7	119,1	84,3	77,8
The near periphery with a low level of development of LCOPSS	66,5	76,5	69,5	43	34,1
The median (remote) periphery with a high level of development of LCOPSS	68,9	93,2	59,8	61,2	60
The distant periphery with an average level of development of LCOPSS	55,5	51,5	42,7	47,6	50
The middle periphery with a low level of development of LCOPSS	44	54,6	42,6	29,2	33,5
Far periphery with a high level of development of LCOPSS	61,9	77,7	48,2	54,4	53,5
The middle periphery with an average level of development of LCOPSS	47,1	70,6	53,4	40,5	41,3
The distant periphery adjacent to the low-developed LCOPSS	64,4	71,3	55,2	64,4	57,2

According to our data, a steady population growth throughout the selected period was preserved only in the area adjacent to the regional center. The rural settlements adjacent to the regional center were especially attractive. Moreover, the increase in the population was provided not only due to migration from other regions and cities of the region, but also from other regions of the country and the CIS countries. Moreover, almost half of the increase in the population of villages adjacent to the regional centers was formed due to the townspeople creating enclaves of cottage buildings.

As the data show, the value of district centers, as population service centers is very significant, which is manifested in the effect on the attractiveness of remote rural settlements. In the Amur region, the role of district centers is played by settlements, they have significant differences. In addition to the regional center, the functions of the district center are performed by 7 cities, 5 workers' settlements and 7 rural settlements. Accordingly, their service potential of inter-settlement services has significant differences, which affects the adjacent rural settlements.

The data obtained indicate that the high level of development of the LCOPSSs of the largest cities in the region nevertheless acts as a significant factor in decreasing the outflow of the population from the rural settlements, although it does not allow to see a picture of the population movement as in the municipal districts adjacent to the regional center. The lower service potential of workers' villages, which are regional centers, further limits their ability to compensate for the low level of development of the infrastructure complex of rural settlements.

Their ability to provide inter-settlement services only allows to restrain the outflow of the population from the villages nearest to them. The smallest service potential developed in the district centers which are rural settlements. Their weakness is less noticeable in areas close to the regional center. Its compensatory function made it possible to have a general level of outflow of rural residents at a level close to that prevailing around the cities of the region.

4. Conclusions

Unfortunately, government decisions to improve the spatial development of regions are poorly adapted to rural areas. The above analysis indicates that a significant part of the economic and social problems

prevailing in rural areas has directly spatial features, and their resolution is not possible without taking radical steps to optimize the rural settlement population system.

One of the most important ways to improve regional programs and plans is the coordination and combining of the socio-economic and territorial-spatial aspects of development. An important step in this direction is creating of stabilization programs and development of the service as a single complex for the city and village. The greatest prospects for weakening the isolation of rural settlements in a relatively short time may be provided by measures for state support of centers focused on serving the population of small remote villages.

What about improving living conditions for residents of small remote settlements, the most important role is played by the communication component, which includes the provision of communication facilities at the level of high-quality Internet and the solution of problems associated with the development of engineering and transport infrastructure.

References

- [1] Minakir P 2011 *Economist* **9** 37-41
- [2] Dem'yanenko A N 2017 *Regional Studies* **2** 5-10
- [3] Zubarevich N V 2019 *Issues of Economics* **1** 35-45
- [4] Fisher A G B 1939 *Economic Record* 24-38
- [5] Clark C 1940 *The Condition of Economic Progress* (London: Mc. Millan)
- [6] Christaller W 1933 *Die zentralen Orte in Siiddeutschland* (Iena: Fischer)
- [7] Lesh A 2007 *Spatial organization of the economy* (Moscow: Nauka)
- [8] Lappo G M 1983 *Bulletin of the USSR Academy of Sciences* **5** 16-28
- [9] Vikhrov O V 2013 *Actual problems of geography and geocology* (Tver: Publ. House of Tver University)
- [10] Tkachenko A A 1995 *Territorial community in regional development and management* (Tver: Publ. House of Tver University)
- [11] Nosonov A M 2016 The territorial organization of the tertiary sector: methodological aspects of the study *Scientific Review* **1**
- [12] Mishchenko V V 2011 *Issues of state and municipal administration* **4** 45-49
- [13] Fomkina A A 2015 *Vestnik Mosk. un-that. Ser. 5. Geography* **6** 57-64
- [14] Lazareva V V, Vlasova N Y, Dyachenko V N 2019 *Bulletin of the Ural State University of Economics* **1** 61-77
- [15] Bol'shakov N M, Zhideleva V V, Rabkin S V 2015 *Bulletin of the Komi Scientific Center, Ural Branch of the Russian Academy of Sciences* **2** 95-103
- [16] Kotler F et al. 2005 *Place Marketing* (St. Petersburg: Stockholm School of Economics)
- [17] Rogerson R, Findlay A, Morris A 1989 *Environment and Planning* **21** 1655-66
- [18] Ashworth G, Voogd H 1990 *Selling the city* (London, Belhaven)
- [19] Dyachenko V N 2016 Spatial differentiation of living conditions as a factor of attractiveness of the Russian-Chinese border area *Management of economic systems: electronic scientific journal* **9(91)** 26