

Dynamic quality assessment as a criterion for the sustainable development of social services in cross-border regions

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Abstract. An independent assessment of the quality of social services is an important tool for shaping a positive image of the Russian regions. However, the high variability of such estimates over the years does not reliably judge the sustainability of the positive development of regional social services systems. The authors propose an approach to the development of sustainability criteria for improving the quality of social services provides an opportunity to dynamically assess the direction and rate of change in customer satisfaction, taking into account the influence of external conditions and internal capabilities of the region. The calculation of this criterion for the cross-border territories of the Far Eastern Federal District proved its viability in making forecasts of developing the regional educational services system and selecting the best quality management practices.

Keywords: quality, quality assessment, social services, customer satisfaction, educational services

1. Introduction

In many countries, the starting points for improving the quality of public sector services are identifying the needs of beneficiaries and assessing the satisfaction of such needs with the characteristics of the service. But often, consumer survey results are not subjected to scientific analysis regarding emerging trends and the search for optimal management decisions at the level of individual territories and organizations [1].

Given the complexity and diversity of factors that determine the quality of social services perceived by consumers, it is important not only to calculate comprehensive indicators of satisfaction, but also to identify successful practices in managing the development of individual industries [2]. The ranking of territories according to the values of consumer assessments of the quality of services received in different years has a definite impact on the image and attractiveness of regions, including for investment in new projects [3]. However, to create the conditions for quality improvement, an in-depth analysis of the sustainability of development of individual service industries is needed based on the assessment of customer satisfaction over time [4].

Existing methodological approaches to such an assessment are often reduced to structuring quality criteria and ranking them in importance for different socio-demographic groups of consumers [5-8]. Therefore, the purpose of the study was to improve the methodology for analyzing consumer assessments of the quality of social services, taking into account their dynamics and based on the principles of sustainable development of socio-economic systems. When testing the author's methods

of such analysis, the task was to assess the impact of the geographical location of the cross-border region on the sustainability of improving the quality of public sector services provided here.

2. Materials and Methods

The application of the principles of the mathematical theory of sustainability with respect to the regional socio-economic system allows one to define sustainability as the ability of the system to maintain a target development trajectory in an open state of the national economy and society, despite the turbulence of the external environment [9]. In accordance with the social policy implemented in Russia today, one of the key development goals of all branches of social services is the transition from ensuring the quantity guaranteed by the Constitution to quality improvement. Thus, it is possible to assess the sustainability of the development of the social services system using the sustainability criterion for improving their quality.

This criterion, in our opinion, characterizes the ability of the system to maintain the target trajectory of improving the quality of services against the background of the existing differentiated level of customer satisfaction and taking into account the changes taking place in the subsystems (resource support, interaction with consumers) as a result of information and technological exchange between industries and territories management efforts and dynamic needs. This definition of the sustainability criterion for improving the quality of social services allows us to formulate requirements for the content of the indicators of this criterion.

The first indicator reflects the rate of change in the consumer's assessment of the quality of services in the region over the study period of time, related to the average rate of such changes in the group of regions (in a federal district). It should be noted that the sensitivity of consumers to the amount of perceived quality increases as it decreases. Therefore, the relative rate of change in the quality of services should be adjusted by a factor that depends on the extent to which the quality assessment has approached the maximum possible one during the study period. Thus, the indicator "relative rate of change in the assessment of quality of service" in the i -th region V_i can be calculated by the formula:

$$V_i = \frac{\Delta T_i}{\Delta \bar{T}} \times \left(1 + \frac{T_{max} - T_i}{2T_{max}} \right) \quad (1),$$

where T_i – a value of consumer assessment of the quality of the service provided in the i -th region at the end of the study period; ΔT_i – a change in the value of the consumer assessment of the quality of the service provided in the i -th region for the period of the study; $\Delta \bar{T}$ – a change in the average value of the consumer assessment of the quality of the service provided for a group of regions (federal district) over the study period; T_{max} is the maximum possible value of the consumer's assessment of the quality of the service provided, provided for by an appropriate method.

The second indicator of the criterion under consideration allows to assess the level of achievement of the goal (quality improvement) for the period studied. This indicator represents the ratio of consumer assessment of the quality of services provided in the i -th region to its maximum possible value, but it should take into account the influence of the region's environment and its ability to improve the quality of services. Thus, the indicator "level of achievement of the goal" in the i -th region L_i can be calculated by the formula:

$$L_i = \frac{T_i}{T_{max}} \times \frac{T_i}{\bar{T}} \quad (2),$$

where \bar{T} is the average value of consumer assessment of the quality of services provided for a group of regions (federal district) at the end of the study period; T_i and T_{max} define the explanation of the formula (1).

The third indicator of the sustainability criterion of development of the regional social services system characterizes the variability of consumer assessment of the quality of services in the studied

industry under the influence of internal and external factors. To calculate this indicator, it is necessary to build a trend line based on consumer assessments of service quality received over the period of the study. Thus, the third indicator “stability of quality changes” in the i -th region S_i can be calculated by the formula:

$$S_i = 1 - \frac{\sum_{n=1}^N |T_{in} - T_{in}^t|}{\sum_{n=1}^N T_{in}^t} \quad (3),$$

where T_{in} is the factual value of the consumer assessment of the quality of service in the i -th region for the n -th moment of the research; T_{in}^t is the calculated (trend) value of the consumer assessment of the quality of service in the i -th region for the n -th moment of the research; N is the number of moments of measuring the consumer assessment of service quality in the i -th region for the period of the study.

Using the three indicators discussed above, which reflect the speed and direction of change in consumer quality estimates V_i , the sustainability of this trend S_i and the level of achievement of the goal L_i , we can determine the integral value of the sustainability criterion for improving the quality of services in the i -th region Q_i :

$$Q_i = (V_i + L_i) \times S_i \quad (4).$$

3. Results

The author’s method of calculating the criterion for the sustainability of improving the quality of services has been applied in the field of educational services, which are a key factor in the accumulation of human capital and the socio-economic development of the state [10]. The research base has become the regions of the Far Eastern Federal District (FEFD), the development of which today is one of the priorities of the socio-economic policy of Russia. A feature of the FEFD is also that all its constituent entities are transboundary. However, only five subjects in the south of the FEFD have land borders with the states of the Asia-Pacific region, the rest are separated from foreign states by sea borders with varying degrees of remoteness.

Independent assessment of the quality of educational activities in Russia is carried out according to indicators approved by the Order of the Ministry of Education and Science of the Russian Federation “*On Approval of Indicators Characterizing the General Criteria for Assessing the Quality of Educational Activities of Organizations Engaged in Educational Activities*” (December 5, 2014 No. 1547). At the same time, a comprehensive assessment of the quality of educational services at the level of individual organizations and regions has a maximum possible value of 160 points and is formed according to 16 indicators grouped into the following criteria:

- Openness and availability of information about educational institutions;
- Comfortable conditions in which educational activities are conducted;
- Kindness, courtesy, and competence of the employees;
- Overall customer satisfaction with the quality of educational activities.

Values of sustainability indicators for improving the quality of educational services in the FEFD regions for the period 2015-2017 calculated using formulas (1) - (3) according to official data of an independent assessment of the quality of educational activities in the constituent entities of the Russian Federation [11] and are presented in Table 1.

The FEFD regions in the Table 1 are placed in descending order of consumer assessments of the quality of educational services received in 2017. Due to the incompleteness of such estimates in the study period, the Chukotka Autonomous Region was excluded from the study. The value of the sustainability criterion for improvement quality in the FEFD was calculated using the formula (4).

Table 1. Assessing the sustainability of improving the quality of educational services in the cross-border regions of the Far Eastern Federal District.

Region of the Far Eastern Federal District	Consumer assessment of the quality of educational services, points			The values of sustainability indicators improve quality			The value of the sustainability criterion for improving quality
	2015	2016	2017	V_i	L_i	S_i	Q_i
Sakhalin region	95.58	133.56	140.60	3.46	1.11	0.94	4.32
Jewish Autonomous Region	88.74	131.0	126.38	3.01	0.90	0.91	3.56
Magadan Region	119.94	136.83	124.53	0.37	0.87	0.95	1.18
Republic of Sakha (Yakutia)	95.0	128.0	118.64	1.93	0.79	0.92	2.50
Khabarovsk Krai	72.0	98.90	114.96	3.55	0.74	0.97	4.18
Primorsky Krai	77.58	125.80	104.09	2.26	0.61	0.85	2.43
Kamchatka Krai	113.40	95.40	100.90	-1.07	0.57	0.95	-0.48
Amur region	117.77	84.80	87.64	-2.68	0.43	0.92	-2.06
Average FEFD	97.50	117.64	111.30	-	-	-	-

4. Discussion

According to the results of a comparative analysis of official data on the quality of educational services in the subjects of the FEFD and indicators of the sustainability of quality improvement, calculated according to the author's methodology, the following main conclusions were made.

- The dynamics of complex consumer quality assessments show only two steadily growing trends – in the Sakhalin Region and the Khabarovsk Krai. At the same time, there are clear negative trends in the Kamchatka Krai and the Amur Region, which negatively characterizes the sustainability of the development of the social services system in the FEFD and indicates a low level of diffusion of successful management practices in the regions of the federal district.
- Despite the considerable remoteness from the central regions of the Russian Federation, other subjects of the FEFD and the lack of land borders with foreign countries, the maximum indicators of the rate of improvement of quality and level of achievement of development goals shows the education sector of the Sakhalin region. At the same time, according to the same indicators, the Kamchatka Krai, which is experiencing a similar influence of geographical factors, shows a significant lag behind the average in the FEFD values. The Amur region, closer to the center of Russia and having overland external borders, demonstrates even lower sustainability indicators for improving the quality of educational services.
- The high rating of the region based on the results of consumer quality assessments obtained in a certain year is not a reliable indicator of the sustainability of the development of the service sector under study. So, in the Khabarovsk krai, which occupied only the fifth position among the subjects of the FEFD in 2017, the value of the sustainability criterion for improving the quality of educational services turned out to be much higher than its closest competitors.

The results of the study shows that the geographical remoteness of the cross-border regions of the FEFD does not significantly affect the perceived quality of educational services by consumers. But a significant variation in the values of the criterion for the sustainability of quality improvement in the regions requires the expansion of cooperation between regional authorities to ensure the sustainable development of the social services system in this federal district.

5. Conclusion

Due to the high dynamism of consumer quality assessments in different years, the comparison of regional ratings only by the values of such assessments does not reliably judge the effectiveness of

management efforts to ensure the conditions for a steady improvement in the quality of social services in the regions of the Russian Federation. The criterion considered in the publication can serve as a tool for quality management not only at the regional level, but also at the level of individual organizations in the framework of self-assessment and forecasting the results of their activities.

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