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THE INVESTIGATION OF THE EFFICIENCY OF PUBLIC INVESTMENT IN THE HUMAN CAPITAL DEVELOPMENT

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The effectiveness of the economy social sector is a key factor in ensuring a decent standard of living and competitiveness of municipalities in the struggle for the human capital. It depends on the quality of social services. And the budget expenditures for its provision can be regarded as a social investment in the population quality and we evaluate them as a long-term investment in improving the quality of life and the area attraction, which provide a return in the form of budget income.

Purpose: *To investigate the efficiency of public investment in the human capital development.*

Methodology. *Using graphic techniques, as well as the comparative and structural analysis methods, we examined the development of the territorial budgets income from the value of state investment in the human capital and raising the life quality in the territory. We also calculated the efficiency of social investment at local and regional levels (for example, at the city of Norilsk and the Krasnoyarsk Krai).*

Results. *We concluded that the calculation of the territorial indicator of the social investment effectiveness enables the quality management of the territorial socio-economic development. The studying of the dynamics of this indicator value would optimize budget expenditures and maximize its income, as well as increase the investment efficiency and ensure the growth of the economic potential of the territory.*

Keywords: *social services; quality estimation; budget expenditures and income; social investment; human capital; quality of life.*

ИССЛЕДОВАНИЕ ЭФФЕКТИВНОСТИ ГОСУДАРСТВЕННЫХ ВЛОЖЕНИЙ В РАЗВИТИЕ ЧЕЛОВЕЧЕСКОГО КАПИТАЛА

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Эффективность социального сектора экономики является ключевым фактором обеспечения достойного уровня жизни населения и конкурентоспособности муниципальных образований в борьбе за человеческий капитал. Она в определенной степени зависит от качества социальных услуг населению. При этом расходы бюджетов различных уровней на их оказание можно рассматривать как социальные инвестиции в качество населения и оценивать их как долгосрочные вложения в повышение качества жизни на территории и её привлекательности, обеспечивающие отдачу в виде доходов бюджета.

Цель: исследовать эффективность государственных вложений в развитие человеческого капитала.

Методология. В настоящей работе при помощи методов графического моделирования, а также сравнительного и структурного анализа, была исследована зависимость доходов территориальных бюджетов от величины вложений государства в развитие человеческого капитала и повышение уровня жизни на территории, а также рассчитана эффективность таких социальных инвестиций на муниципальном и региональном уровне (на примере МО город Норильск и Красноярского края).

Выводы. По результатам исследования сделаны выводы, что расчет территориального показателя эффективности социальных инвестиций позволяет осуществлять качественное управление социально-экономическим развитием территории. Исследование величины данного показателя в динамике позволило бы оптимизировать расходы бюджета и максимизировать его доходы, одновременно повышая эффективность вложений и обеспечивая рост экономического потенциала территории.

Ключевые слова: социальные услуги; оценка качества; доходы и расходы бюджета; социальные инвестиции; человеческий капитал; качество жизни.

The main strategy of all states in the world today is to conduct the social-oriented policies that are directed to improve the quality of life. Considering this problem at the municipal level, it should be

noted that care about the population life quality in the city lies on the local authorities, as they form one of its main components – municipal infrastructure.

The actual task of local authorities in improving the quality of life in the municipality is the development of the main areas of human life, such as health, education, social security. Municipal activities in these areas are implemented through a system of municipal services, which provide certain components of quality of life. Therefore, the management of services quality is an essential part of the municipal government, and this question is the key to understanding all socio-economic processes taking place at the city level, and hence the quality of life in the territory.

According to the Federal Law № 210-FZ «About the state and municipal services providing organization» municipal service is the activity to implement the local authorities functions, which is carried out at the applicants requests within the authority of the body, providing municipal services to solve local issues [1].

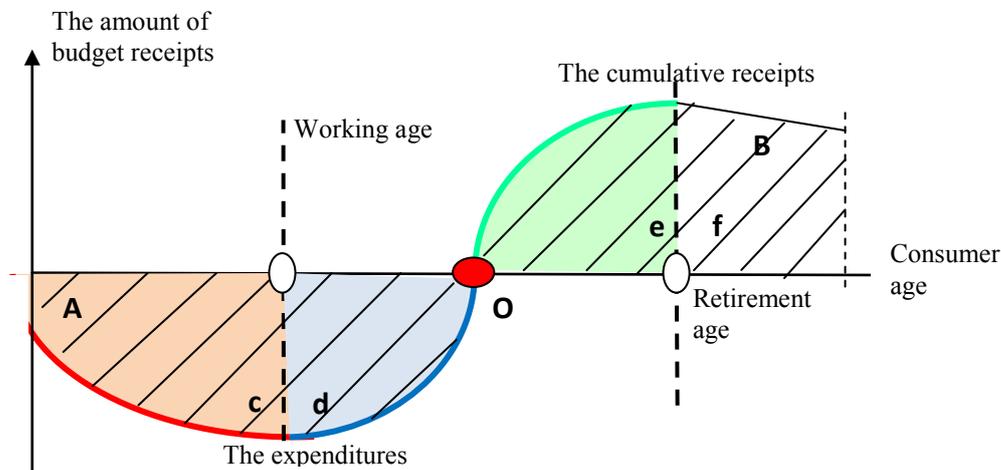
To achieve the required efficiency in processes of monitoring the municipal services quality, the policy of local authorities must ensure the formation of standards for the municipal services provision in order to achieve the required level of quality.

One of the basic documents in this area is the order of the Finance Ministry of Russia № 105-n dated October 22, 2009. [2]. It approves guidelines to determine the total volume of standard calculated costs for the state services or works provision by the federal executive bodies and its public institutions, according to the budget classification of expenditures.

The purpose of forming a detailed methodology of calculating standard costs for the provision of state services is the possibility of its practical application to obtain authentic information about optimal volume of budget expenditures required for excellent rendering of state and municipal services.

The budget expenditures in the study context is the amount of state appropriations allocated to cover the costs of providing the state (municipal) social services, and budget receipts – the amount of money flowing into government budgets at all levels (federal, regional, municipal) in the form of individuals and organizations tax deductions.

Calculating the arithmetic difference between budget receipts and expenditures per one services consumer and taxpayer (depending on age) during his life, we obtain a function of the total cumulative receipts of the state (municipal) budget (further – Function) schematically shown at image 1.



- figure A, the sector a – the social services consumer is at working age in the state and/or parental care;
- figure A, the sector d – the social services consumer is at working age for full or partial state software;
- figure, the sector e – the social services consumer is at working age for full or partial state software;
- Lines of budget receipts.

Img. 1. *The graph of budget expenditures and receipts per a services customer*

The square of figure, located on the function graph below the zero axis, represents the total amount of budget expenditures for the state and municipal services provision that make up the basic set of social care minimum guaranteed by the state for every citizen from birth. Its calculated value can be taken as the total standard value of state investment in the human development, improving the population quality, including the future human resources.

The figure A is divided into two sectors by line f, which crosses the age axis x at the point W – it is the moment when any consumer reaches the working age, so he can start his career (16-18 years) and earn an income.

Until the child-consumer reaches the working age in the sector c the budget expenditures value in a particular part depends on the social status of the family. So consumers can be satisfied with free goods provided by the municipality and paid from the local budget. Also social services may be partially paid for by parents (guardians), if they choose the other service providers (non-governmental private institutions), for example, with a significant difference in the quality of the service process and the results.

There is the probability of services consumer self-income in the sector **d**. If upon reaching the age at which the employment allowed by legislation, a person begins to work, then the state receives the revenue from each service consumer in the form of tax deductions from wages and function line starts to move upwards. By providing the highest quality of the learning process in educational institutions and the formation of a certain type of outlook among students, it is probable that they can receive the scholarship in higher education institutions, which is also liable to tax.

The square of the figure, located above the zero axis, represents the amount of the state income from one person working as an amount of various tax deductions in the budget funds.

The sector **f** is undefined area, where the function is not clearly described. The Russian legislation allows to save the workplace and, consequently, income for person reached retirement age. Therefore, the continuation of the work entails the possibility of receipts for the state budget as the tax deductions. A retirement, respectively, entitles the budget expenditures as the payments of retirement benefits, as well as the cost of services of health facilities and social support, the consumption of which increases due to possible changes in the health status and the need for additional social care.

Achieving the value of the function at the point **O** means that the amount of receipts equaled the volume of expenditures and further, in the case of optimal conditions (for example, the lack of critical events, such as disability), the state receives a net income.

Through a certain socio-economic and demographic policy, we can adjust the value of the point **O** and its shift on the age axis to optimize the budget expenditures for the provision of municipal services, as well as the development of municipal and other services by expanding the market by attracting non-governmental organizations and commercial services.

If we want to change the point values on the age axis in which the function reaches zero, it can be achieved by reducing the amount of expenditures or, respectively, increasing the receipts. But it should be considered a kind of duality of the situation. The decrease of the expenditures of social services could lead to a reduction in their quality and reducing the standards of the population living, respectively, that will affect the future earnings, so the tax yield line in the future may be more shallow and the value of the point **O** on the contrary, in this case moves axially to the right, so the age of the person, in which the function takes zero value increases.

We should also understand that the increase of budget expenditures as investments in the human development by improving the quality of government (municipal) social services has quite tangible effects in terms of cost (mainly) tax yields, depending on welfare. So in the future we can expect a steep rise of the budget receipts line, not only due to the fact that the incomes are higher, but also due to the reduction of further budget receipts on social services of health care institutions and social assistance, as the population quality will be better due to the initial state investments.

Thus, adjusting the position of the point O on the age axis, we can determine the optimal amount of the budget expenditures to ensure a satisfactory level of the life quality, and also provide a «return» of the state investments in the future generation and improving the population quality.

Author assessed the effectiveness of the state investments from the regional and municipal budgets to maintain a high population life quality particular in the city of Norilsk and in the whole Krasnoyarsk Territory.

Table 1 shows the actual values of the Krasnoyarsk Territory budget expenditures for the state (municipal) services provision in dynamics for 5 years from 2007 to 2011 [3]. By all indications observed unstable dynamics, it can be noted both growth and decline in the budgetary allocations in all sectors, but the overall state of social infrastructure can be described as favorable.

The largest share of investments in 2007-2008 accounts for the health care and education services, as it is the most vital sectors of the social services market, with the most active demand and the largest number of consumers. In 2009-2011 the biggest investments of budgetary funds account for the social policy development, this is due to the increased volume of various state programs in this direction.

Table 1

The dynamics of budget expenditures of the Krasnoyarsk Territory, milliards rubles

Service Type	2007	%	2008	%	2009	%	2010	%	2011	%
1. Education	6,8	31,0	9,3	40,0	8,6	33,0	8,5	26,1	8,1	36,9
2. Culture, art and cinematography	1,7	8,0	2,4	10,0	3,1	12,0	3,3	10,0	0,3	1,4
3. Health and Physical Education	9,1	42,0	6,6	28,0	6,4	24,0	9,8	27,1	6,1	27,9
4. Social Policy	4,0	18,0	4,9	21,0	8,2	31,0	12,0	36,8	7,4	33,8
Total social services:	21,6	100,0	23,2	100,0	26,3	100,0	33,6	100,0	21,9	100,0

Table 2 shows the actual values of budget receipts of the Krasnoyarsk Territory in the dynamics with similar expenditures.

Table 2

The dynamics of budget receipts of the Krasnoyarsk Territory, milliards rubles

Tax type	2007	%	2008	%	2009	%	2010	%	2011	%
Ncome tax, profit tax	64,93	85,93	63,98	79,51	47,54	72,55	80,60	81,29	82,07	81,23
The corporate income tax	47,61	63,00	42,47	52,77	18,62	28,41	56,41	56,89	55,19	54,62
The income tax (individual)	17,32	22,92	21,52	26,74	28,92	44,14	24,19	24,40	26,89	26,61
The tax on the total income of the organizations	1,14	1,51	1,62	2,02	1,46	2,23	1,89	1,91	2,37	2,35
Transportation tax (individuals)	0,44	0,59	0,64	0,80	0,84	1,29	0,98	0,99	0,94	0,93

Continuation of table 2

From paid services by state (municipal) institutions and compensation of the state	0,06	0,08	0,07	0,08	0,07	0,11	0,07	0,07	0,04	0,04
From the sale of tangible and intangible assets	0,02	0,03	0,24	0,29	0,13	0,19	0,29	0,29	0,17	0,17
Gratuitous receipts from other budgets of the budgetary system of the Russian Federation	6,52	8,63	11,01	13,68	11,79	18,00	12,86	12,97	14,17	14,03
Gratuitous receipts from the state (municipal) organizations	0,00	0,00	1,29	1,60	2,75	4,19	1,38	1,39	0,69	0,69
From the sale of goods and services provided by the government organizations	2,45	3,24	1,62	2,01	0,95	1,45	1,09	1,10	0,57	0,57
Total Tax Contribution:	75,57	100,00	80,47	100,00	65,53	100,00	99,15	100,00	101,03	100,00

The budget receipts can be classified on several grounds, but in this context, we consider two variants – receipts that are directly and indirectly related to the population life quality in the territory. The former should include miscellaneous income from individuals (the income taxes and the property taxes), the latest – from organizations (the more skilled labor is used in the enterprise, the more profit it could probably get, so it should be noted a definite correlation between the level of qualification employees and profits of the enterprise). According to the table 2, the largest share in the budget total receipts is the profit and income taxes (deductions from individuals and organizations). Therefore, the more effective is held municipal policies to improve the life quality and, therefore, increase the incomes of the population, the greater the size of the budget tax yields. The local authorities supports different business development programs in the territory and carrying out measures to improve the interaction between the organizations on the municipal market, it has a positive effect on the revenue component of the budget, as it all helps to increase the profits of enterprises and tax rates.

The share of revenues from the municipal institutions paid services is on average from 2 to 4%. The competent organization of the competitive environment at the municipal market and the involvement of a non-governmental and private organizations of various forms of ownership will create the preconditions for improving the quality of municipal services and increasing of the demand for their paid component. It will also help to increase the revenue items of the budget.

Regarding the city of Norilsk budget (tables 3 and 4) there is a trend similar to the regional dynamics.

Table 3

Dynamics of the budget expenditures of the city of Norilsk, milliards rubles

Service Type	2007	%	2008	%	2009	%	2010	%	2011	%
Education	2,8	49,5	3,2	50,3	3,1	50,5	3,3	49,8	3,7	60,8
Culture, art and cinematography	0,3	4,9	0,3	4,6	0,3	4,5	0,3	4,7	0,3	5,0
Health and Physical Education	1,6	28,2	1,8	28,0	1,5	23,9	1,7	26,1	0,8	13,5
Social Policy	1,0	17,4	1,1	17,0	1,3	21,1	1,3	19,4	1,3	20,7
Total social services:	5,7	100,0	6,4	100,0	6,1	100,0	6,6	100,0	6,2	100,0

Exceptions are indicators of the municipal institutions revenues from its paid services (table 4), which are higher in 2.5 times, ranging from 5 to 10%. This situation can be interpreted in two ways. On the one hand, this suggests a decent life quality and, consequently, high purchasing power of consumers. On the other hand it could mean a lack of competition at the municipal market and the inability to choose another service provider.

Table 4

Dynamics of the budget receipts of the city of Norilsk, milliards rubles

Type of tax	2007	%	2008	%	2009	%	2010	%	2011	%
income tax, profit tax	10,39	90,00	9,51	93,03	4,32	73,87	9,38	87,24	9,94	92,61
The corporate income tax	8,08	69,96	6,88	67,27	1,59	27,27	6,43	59,83	6,60	61,47
The income tax (individual)	2,31	20,03	2,63	25,76	2,72	46,60	2,95	27,40	3,34	31,14
The tax on the total income of the organizations	0,11	0,92	0,11	1,06	0,11	1,94	0,14	1,31	0,16	1,49
roperty levy (individual)	0,02	0,18	0,02	0,23	0,05	0,79	0,03	0,32	0,01	0,14
from paid services by state (municipal) institutions	0,01	0,12	0,01	0,13	0,02	0,34	0,01	0,08	0,00	0,02
Gratuitous receipts from other budgets of the budgetary system of the Russian Federation	0,49	4,27	0,00	0,00	0,76	13,03	0,55	5,11	0,42	3,87
from the sale of goods and services provided by the municipal organizations	0,52	4,52	0,57	5,54	0,59	10,03	0,64	5,95	0,20	1,87
Total Tax Contribution:	11,54	100,00	10,22	100,00	5,84	100,00	10,75	100,00	10,74	100,00

The amount of the budget receipts and expenditures per a customer is calculated as the ratio of the total value of each indicator to the average population (table 5) [3, 4].

Table 5

dynamics of average annual population, thousands people

Territory	2007	2008	2009	2010	2011
The Krasnoyarsk Krai	2890,35	2892,05	2890,07	2832,9	2829,1
The city of Norilsk	207,5	205,0	200,9	176,7	177,1

Performing calculations, we obtain the following results (table 6).

According to the table 6, the value of social receipts per a person is much higher in the city of Norilsk – more than in 3 times during the five-year period. Even taking into account the increasing areal rates for the Far North territories, which are averaging 2.5 points in Norilsk, it should be noted qualitative excess of the values of social receipts over the regional indicators, it is testifies to the more active municipal policy on the life quality in the territory. This is reflected in a stronger financial support of the main areas of the population activities.

Table 6

The socio-economic indicators of the budget per a customer, thousands rubles

Territory	2007	2008	2009	2010	2011
<i>The actual amount of the budget expenditures</i>					
The city of Norilsk	27,4	31,2	30,5	37,4	34,7
The Krasnoyarsk Krai	7,5	8,0	9,1	11,5	7,7
<i>The actual amount of the budget receipts</i>					
The city of Norilsk	55,6	49,9	29,1	60,9	60,6
The Krasnoyarsk Krai	26,1	27,8	22,7	35,0	35,7

The arithmetic difference between the budget receipts and expenditures to pay for the services can be interpreted as the net budget receipts, and this figure can be located both above or below zero.

In the latter case, it means the ineffective state investments in the human capital in the form of the expenditures on social services and their «unreturn» by the budget tax yields. A ratio of the budget receipts received to the expenditures incurred determines the efficiency of the municipality investments in the human capital development. it is a so-called return from state investments in the different programs of maintenance the quality of life at a decent level (table 7).

Table 7

The socio-economic indicators of the budget per a customer

Territory	2007	2008	2009	2010	2011
<i>The net budget receipts, thousand rubles</i>					
The city of Norilsk	28,2	18,7	-1,4	23,5	25,9
The Krasnoyarsk Krai	18,7	19,8	13,6	23,5	28,0
<i>The effectiveness of social investments at living standards improvement</i>					
The city of Norilsk	2,0	1,6	1,0	1,6	1,7
The Krasnoyarsk Krai	3,5	3,5	2,5	3,0	4,6

Analysis of the data indicates that for every one ruble invested in the social development of the area we can receive 3.5 rubles as the budget receipts of the Krasnoyarsk Territory and 2 roubles in the city of Norilsk at 2007. That is, the effectiveness of such attachments is 350% and 200%, respectively.

Based on the above, we can draw conclusions about the municipal authorities interest to increase the local budget receipts in two ways: by increasing the tax base of the individuals incomes and organizations profits that is possible by improving the life quality in the territory and increasing the efficiency of state investments in the human capital development.

The goals can be achieved in several ways:

1. By improving the population quality, already living in the area: the education system and literacy improvement, increasing the qualifications, improving the labor force quality in the municipality, which will contribute to both raising wages and improving the labor quality, that will affect the profits of the employer.

2. By attracting the working population into the territory to improve the population quality. This is achieved by:

- a) stimulating the social infrastructure development, improving the social services quality and, as a result, improving the life quality;
- b) pursuing an active social policy and the increasing of the economically active population wages in the territory, students scholarships, pensions for the disabled contingent, as well as various kinds of social benefits for the economically inactive population;
- c) providing the tax and non-tax benefits for the main city enterprise in the case of strengthening its social responsibilities and activities of the social support of the city population, which is an employee of the company, that will also serve as an incentive for attracting the high-quality human resources from the other areas of the country and, in turn, will lead to an increase in the company's profits and, consequently, an increase in the amount of tax payments to the budget of the city and the region.

To develop and substantiate the program of activities aimed at improving the efficiency of the budget investments in the population life quality, while optimizing the budget social expenditures, as well as the possibility of predicting its social receipts, the set of statistical data must be collected in the territory. The difficulty is that the necessary for socio-economic analysis information is not recorded anywhere.

With the statistics provided by the official information sources [3, 5], we can have a certain idea about the level of the area socio-economic development. However, such data is not always convenient

and adequately compatible for analysis. If the municipal statistical system collects informational multidimensional database for offline and local use with the ability to form any analytical tables, it is possible not only to determine the average volume of the budget social expenditures and receipts, but also to use these data to predict the situation in the future to several years ahead and apply the calculated values for the territory management and providing of competent socio-economic and demographic policies.

In addition, a detailed analysis of the population socio-economic structure will help refine and assess the requirement for quality services and organize the work of all enterprises at the municipal services market, that will improve its quality and hence the level of customer satisfaction and the overall value of the life quality in the territory.

Thus, the assessment of budget expenditures and receipts per a consumer and taxpayer will provide an opportunity to assess the effectiveness of state social investments in the personal development and improving the quality of human life.

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