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**DEPENDENCE OF INTRAMIGRATION PROCESSES ON THE
DEVELOPMENT OF REGIONAL INFRASTRUCTURE**

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Abstract

The object of the research in the article is the intramigration movement of human capital and its dependence on regional policies regarding the development of regional infrastructure. Understanding the nature of the object under study will make it possible to adjust the process of modernization of the infrastructure, assess the effectiveness of existing tools and use the results of the study to design new approaches to solving infrastructure problems at the regional and state levels. The aim of the study is to identify key infrastructure areas that can regulate the inflow and outflow of high-quality human capital. As the main tasks in the article:

1. The relevance of the infrastructure directions is analysed and their degree of influence on the intramigration balance of human capital is determined.

2. Analyses the role of the state in the development of regional infrastructure and the impact of the quality of human capital on the economic and social development potential of the regions and its dynamics. Including methodology of qualitative evaluation of the level of development of enterprise's human capital and level of its correspondence to its needs, and determine the connection between these indicators with the help of the methods of regression and correlation analysis.

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Keywords: Education, health, human capital, infrastructure of the regions, intramigration process, quality of human capital.



1. Introduction

Work on the regulation of the processes of internal migration of human capital as an object of research has been updated for quite some time. Serious work in this direction was carried out in pre-revolutionary Russia and the Soviet Union. The technologies of regulation and management of these processes over the past two hundred years have undergone enormous changes, although it is impossible not to note a number of problems requiring a scientific approach.

In addition, the very concept of human capital has undergone dramatic changes. The expansion of structural and functional potential, an expanded understanding of the range of its influence on the development paradigm of the entire structure of society on a civilizational scale has led to a new perception of countries and the world community. And at this stage of the formation of new economic, socio-political, postmodern realities, human capital has taken a leading place in the national wealth and in the total productive capital of developed countries, which is about 80%.

In the future, the redistribution of human capital flows is capable of a key influence on the socio-economic climate of countries investing in the development of regional infrastructure. "In the philosophical sense, modernization and dynamic development of the state are systemic changes in the physical, institutional, organizational, intangible (intellectual), financial and other factors of its functioning. It is safe to say that they ultimately lead to positive economic, social, political, institutional, environmental, infrastructural and other useful changes.

1.1. The quality of life

The quality of life is the most capacious concept, which directly determines the formation, development, growth and interregional migration of human capital. Assessing the quality of life in the region allows assessing positive and negative processes, coordinating interdepartmental interaction aimed at improving the conditions that affect it. The rating system allows assessing the interregional differences in the sphere of improving the quality of life. What are their scales? Many of the indicators that characterize the quality of life in different regions of the Russian Federation still differ at times. To determine the quality of life in the regions and assess the existing imbalances in this area, research is carried out every year and ratings on the quality of life are drawn up on the basis of objective indicators. And not the last place in it is the development of the infrastructure of each region.

To assess the quality of life and compile a rating, the source of information is the data obtained from the following sources: Rosstat, the Ministry of Health of Russia, the Ministry of Finance of Russia, the Central Bank of the Russian Federation, and other open sources. Data collection is carried out on 72 indicators, which are grouped into 11 groups, which characterize all the main aspects and living conditions in the region, from the level of economic development and income to the level of provision of the population with various types of services and climatic conditions in the region of residence.

Groups in which ratings are combined:

- 1) income level of the population,
- 2) population employment and labor market,
- 3) housing conditions of the population,

- 4) security of residence,
- 5) demographic situation,
- 6) ecological and climatic conditions,
- 7) health of population and level of education,
- 8) provision of social infrastructure facilities,
- 9) level of economic development,
- 10) level of development of small business,
- 11) land development and development of transport infrastructure.

Objectively, this system allows you to monitor the dynamics of processes occurring in the region and affecting the formation and quality of human capital. The following summary table reflects how interrelated and how individual these indicators are (Table 01).

Table 01. The increase (decrease) in human capital in the regions of Russia depending on the quality of life

№	The subject of the Russian Federation, which includes the city	Distance from the capital (km)	The rating score in the Rating is 2017 (Min.-1 / Max.-100) ¹	January 2016 (people) ²	January 2017 (people) ²	Natural dynamics of growth / abbr. (people) ²	Migration dynamics of growth / abbr. (people) ²	General dynamics of growth / abbr. (people)
-	Moscow	-	76.92	12 330 126	12 380 664	21 486	29 052	50 538
1	Moscow region	-	70,55	7 318 647	7 423 470	1 082	103 741	104 823
-	Saint Petersburg	714	75.88	5 225 690	5 281 579	11 180	44 709	55 889
2	Leningrad region	730	56,61	1 778 857	1 791 916	- 8 600	21 659	13 059
3	Novosibirsk region	3320	49.11	2 762 237	2 779 555	2 034	15 284	17 318
4	Sverdlovsk region	2150	56.80	4 330 006	4 329 341	- 991	326	- 665
5	Nizhny Novgorod Region	506	55.50	3 260 267	3 247 713	- 11 420	-1 134	- 12 554
6	Republic of Tatarstan	812	65.59	3 868 730	3 885 253	10 643	5 880	16 523
7	Chelyabinsk region	1776	52.19	3 500 716	3 502 323	- 1 068	2 675	1 607
8	Omsk Region	2703	42.53	1 978 466	1 972 682	158	- 5 942	- 5 784
9	Samara Region	1054	52.81	3 205 975	3 203 679	- 4 277	1 981	- 2 296
10	Rostov region	1074	52.91	4 236 000	4 231 355	- 9 680	5 035	- 4 645
11	Rep. Bashkortostan	1300	50.53	4 071 064	4 066 972	3 298	- 7 390	- 4 092
12	Krasnoyarsk region	4141	46.15	2 866 490	2 875 301	3 983	4 828	8 811
13	Perm Region	1442	45.26	2 634 409	2 632 097	889	- 3 201	- 2 312
14	Voronezh region	514	61.21	2 333 477	2 335 408	- 10 615	12 546	1 931
15	Volgograd	969	40.22	2 545 937	2 535 202	- 6 282	- 4 453	- 10 735

	region							
...								
26	Primorsky region	9 129	44.19	1 929 008	1 923 116	- 2 683	- 3 209	- 5 892

Note: Source: IRIA rating, 2Rosstat)

1.2. Human capital

To date, there are a number of economic schools that treat the concept of Human Capital in different ways. Our task is to try to formulate the most complete definition of Human Capital, assess its capabilities, prospects for development. The uneven development of social infrastructure in the region generates internal migration. People leave villages in search of better conditions and migrate to more comfortable settlements and cities. As an example, consider the diagram of internal migration in the Chelyabinsk region (Figure 01).

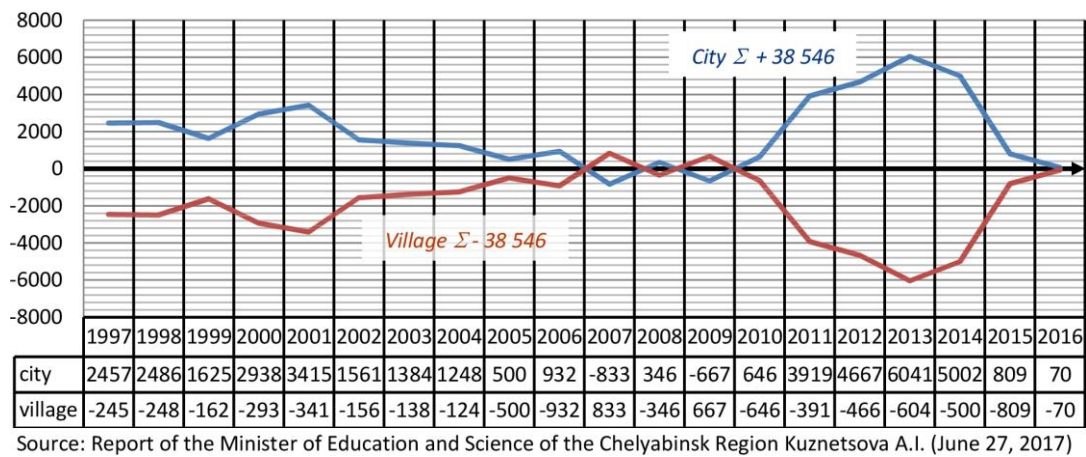


Figure 01. Results of intraregional migration of the population over the past 20 years in the Chelyabinsk region

Therefore, we can assess the impact of regional infrastructures on the inflow, development and quality of human capital. This, in turn, will allow us to assess the potential impact of human capital on the economy of the region. Besides, these findings highlight the importance of the demographic transition as a mechanism which under-pinned the expansion in human capital witnessed in Western economies during the twentieth century (Fernihough, 2017).

Human capital - a total system of elements, where each element can be claimed in this or that sphere of the economy. The elements of this system may be either congenital (physiological characteristics, biological, etc.) and acquired through education, experience in practice.

Factors determining human capital:

- the level of vocational education and qualifications,
- work experience and professional skills,
- the skills of social communication, the ability of independent judgment, leader-ship, moral qualities, education,
- intellectual and analytical skills,

- physical and physiological abilities and capabilities,
- intuition, including emotional intelligence,
- stability of the psyche and reaction speed, including stress resistance.

In other words, we can say that in economic terms, it is a measure of qualification, educational potential, and other individual characteristics that affect not only its productive capacity, but also on potential income. Characteristics and their combination are very individual, if not unique. However, according to OECD (Organization for Economic Cooperation and Development), Human capital is defined as: skills and knowledge, competences and other personal attributes embodied in individuals or in professional communities acquired over a lifetime and used to produce goods, services or various types of intellectual property under market conditions.

It is important to note that human capital occupies the central role among the indicators of strategic effectiveness of enterprise, as it is a source of maximization of enterprise's profit and provision of its sustainability and minimization of expenses, and compile recommendations for its development by modern enterprises (Ermolina, Golikov, Kozenko, & Ponosova, 2018).

Very modern can be considered the fact that in the Russian economic environment comes the understanding that a person with his education, qualifications, practical skills and experience (in the broadest sense of the word) is an important and at the same time an underestimated economic resource.

With this understanding, the meso-economy is an intermediate level between the macro- and micro-economies, on which economic processes are synthesized, within which regions, industries, large economic complexes (clusters, holdings, interregional and interindustry corporations) interact, interbranch and interregional technological chains and networks. Meso-economy is the sphere of the economy in which the institutional, regional, sectoral and infrastructure factors are synthesized, the processes of creating products and providing services as a result of the complex interaction of regions, industries, large economic complexes (Attanasio, Meghir, Nix, & Salvati, 2017).

Evaluation of this economic category is important task for micro- and macro-levels. As calculating mechanism mostly considers the cost determination of human or labor potential or human capital usually applying the World Bank methodological approaches and make calculations based on customer costs, capitalization of earnings, and cost and earnings ratio of human capital through the evaluation of the educational potential (Titarenko, 2013).

2. Problem Statement

One of the key problems raised in the article is the problem of the redistribution of human capital flows. According to the authors, this aspect is capable of a key influence on the socio-economic climate of countries investing in the development of regional infrastructure. Whereas, "in the philosophical sense, modernization and dynamic development of the state are systemic changes in the physical, institutional, organizational, intangible (intellectual), financial and other factors of its functioning. It is safe to say that they lead, ultimately, to positive economic, social, political, institutional, environmental, infrastructural and other beneficial changes.

3. Research Questions

The issues of development of infrastructure projects play an important role, but what types of infrastructure is the most essential argument for providing human capital with the quality of life that is needed in modern socio-economic realities? What factors, other than infrastructural, can affect the intramigration processes? What is the role of the state and regional authorities in the regulation of intramigration processes? Here are the basic questions that require research.

3.1. Infrastructure

The social function of the state is realized through the implementation of an appropriate social policy, which is defined as the purposeful activity of public authorities in achieving the basic goals of the development of society at a particular stage.

According to most researchers, the key influence on the quality and growth of Human Capital is the presence or absence of infrastructure, the degree of its development in the regions. Where there is a so-called cradle of Human Capital. According to the assessment of the majority of economists studying Human Capital, the infrastructure of the regions contributing to the growth and development of the quality of human capital is Infrastructure:

- Social - housing, education and health facilities, sports facilities.
- Engineering - power, facilities, utilities.
- Transport - railways, seaports, coastal infrastructure, airfields, pipelines.
- Informative - communication systems, information support of decision-making.
- Innovative - Efficiency stascientific, scientific-technical and innovative activities.

Based on the material studied, the experience and opinion of the scientific community can be confidently said that a number of infrastructure systems play a fundamental role in stimulating growth, and, most importantly, the quality of Human Capital. Solving the most important socio-economic tasks of such infrastructure complexes requires systematization. In addition, their elements form an indissoluble socio-economic ecosystem for the production of Human Capital, which has the competences required for the development of the economic meso level. The empirical analysis is based on a newly constructed panel dataset for 15 industrial categories in 92 countries over the period 1970–2010. The results suggest that the extent to which increased tertiary human capital promotes industrial upgrading is contingent on the level of institutional quality, as measured by an index over size of government, legal structure, and access to sound money, freedom to trade and market regulations (Zhou, 2018).

To date, the development of regional infrastructure as a kind of unified system is due to the need to withdraw a number of regions from the economic crisis and con-front the aggressive economic situation in the international market. It is important to understand that investing in the development, modernization and innovation of the regional infrastructure will fill the labor market with demanded personnel, reduce unemployment, increase people's incomes and quality of life. The concept of social and economic development of the Russian Federation supported by people over the world - a historical milestone in the

country life, answering to objective need of introduction of science achievements and technology in economic component of new democratic society. Overcoming negative manifestations and the consequence of the world economic crisis which has also concerned our state, a course is of restructuring of economy, investment of investments into the human capital, creations of the environment for innovative movement, lifting of education, science and health care, in creation of new democratic national structure inherent in society as a whole are carried out (Arkatov, Evtushenko, Manin, Dolzhenko, & Rahimov, 2014).

At this stage of economic and technological development it is absolutely clear that the forms of economic use of Human Capital have changed significantly and have acquired a completely different socioeconomic status. Speaking of this, we mean the innovative Human Capital, which has become an important element in the accumulation of economic and technological innovations. As an example, consider a number of these:

1) In modern conditions of functioning of the economic system, the worker's ability to work is not opposed to the material factors of production used. Factors of production now do not appear as opposing sides of functioning capital;

2) The integration of labor unites all branches of the public economy, as a result of which a single social and economic complex is formed, based on the integration of material and scientific and educational resources. In such a complex, each individual employee acts as part of a single whole of the economically active population. To date, the existing system of professional labor is formed into a single system of reproduction, which, in turn, is part of the economic system based on scientific, educational and material production (Becker, Murphy, & Spenkuch, 2016).

4. Purpose of the Study

The aim of the study is to identify key infrastructure areas that can regulate the inflow and outflow of high-quality human capital. As a result of the study, we need to solve the tasks or argue the existence of factors that impede the achievement of the desired results.

In addition, as the goals, the authors see:

1. Identification of the dependence of the volumes of internal migration and the quality of human capital on the level of development of certain types of infrastructure in the region.

2. Determination of the relationship between the strengthening of state support for the development of regional infrastructure and the quality level of migrating human capital.

3. Search for optimal approaches to the development of regional infrastructure and substantiation of the key role of the state in shaping a stable level of inflow and outflow of human capital.

The task of preserving and developing human capital is of strategic importance. According to A. Markov's just remark: "... human capital, in virtue of its nature, its economic origin and characteristics of reproduction, is in the sphere of natural interaction of the state, business, individual and society as a whole" (Schultz, 1963, p. 71-89). Thus, it is possible to evaluate the concrete world experience of economic growth, such as in China. It is important to say about the investments in human capital in China and its relation to China's participation in the world economy. The Cultural Revolution basically destroyed education in China, especially higher education. Data from the early period of the sixties and

seventies show that very few people were trained in school. When China began to play a significant role in the world economy, the government is funding more education (Arkatov et al., 2014).

5. Research Methods

As research methods, the authors give their preference to a substantive and purposeful perception of economic phenomena, observation and collection of facts and statistical data. This allows for a comparative analysis of a number of different criteria, such as time, quantitative, as well as territorial criteria for evaluating data. In addition, it is impossible not to take into account the effectiveness of the historical-logical method, since in this case historical experience and the dynamics of changes make it possible to demonstrate these changes and further development trends.

6. Findings

Summing up, it should be noted that the gap between the regional centers, with the exception of the capital regions, is not so great, but there are a number of features that cannot be overlooked.

First, the degree of development of infrastructures, namely, this aspect reflects the ball-rating indicator, is much higher in those subjects that are located closer to the capital region. And it is characteristic that at the same time the outflow of the population in them is approximately equal to the outflow of human capital from distant regions, with the least developed infrastructure. From which one can draw a conclusion: regions with the most developed infrastructure, with a higher quality of life and proximity to the capital, like a magnet draw in themselves a qualitative human capital. They devastate those regions in which the infrastructure is developed, but there are no prospects for further development and highly paid employment. To the same extent, those entities in which the necessary infrastructure is less developed and there is an acute shortage of quality human capital suffers from the losses of the human capital. As they cannot provide themselves with quality human capital. Secondly, climatic features, considerable remoteness, isolation and other specificity of some regions significantly complicate the life and work of a person in these conditions.

It is necessary to eliminate such distortions. In all this, we are interested in the role assigned to the state as a guarantor of stability, law and law, acting on the side of this man himself. For example, we can say “about investing in human capital in China and his attitude to China's participation in the global economy. The Cultural Revolution basically destroyed education in China, especially higher education. Data from the early period of the sixties and seventies show that very few people were at school in China, especially in high school or university. When China began to participate in the global economy, it all began to change. The Chinese government began to spend a very small part of its income on education at a still lower but much higher share” (Becker, 2012, p. 518).

7. Conclusion

In conclusion, it should be noted that the development of high-quality social, transport and engineering infrastructure plays a key role in the formation of high-quality human capital. This includes housing, kindergartens, schools, universities, hospitals, sports and entertainment complexes, cultural

facilities, transport, energy facilities, utilities network. All this makes it possible to make a person's life complete and qualitative. To date, the development of regional infrastructure as a kind of unified system is due to the need to withdraw a number of regions from the economic crisis and confront the aggressive economic situation in the international market. It is important to understand that investing in the development, modernization and innovation of the regional infrastructure will fill the labor market with demanded personnel, reduce unemployment, increase people's incomes and quality of life.

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