On the Formation of High-Quality Human Capital in the Context of Digitalization of the Russian Economy*

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Abstract. The object of research in the article is human capital, as well as the influence of the federal target program "Electronic Russia" on the regional policy in the development of regional information and innovation infrastructure. The study will analyze the effectiveness of public administration in stimulating the development of the digital economy, mass dissemination of information and communication technologies, ensuring the rights of citizens to free access to information about the activities of state bodies, and the process of forming high-quality human capital. Understanding the nature of the objects under study will make it possible to evaluate the effectiveness of the processes of modernization of the regional infrastructure, evaluate the effectiveness of existing tools and use the results of the study to develop new approaches to solving infrastructure problems at the regional and state levels. The study aims to identify key areas in the development of information and innovation infrastructure, contributing to improving the quality of human capital. According to the results of the study, we need to solve the tasks or argue the existence of factors that impede the achievement of results.

Keywords: human capital, quality of human capital, digitalization, information, and innovation infrastructure of the region.

1 Introduction

The formation of human capital as an object of research is actualized for a long time. Interest in this economic asset has transformed for a long time. Adam Smith, K. Marx, and many other authoritative economists and philosophers wrote about this. Different approaches have been proposed. T. Schulz [1] made a significant contribution to the introduction of a theoretical basis for such a concept as human capital at the initial stage. It was thanks to his scientific research that the rethinking and popularization of this economic tool occurred. Schultz defined the role of human capital as a fundamental

element of the industrial, and then the post-industrial economy. The capacious concept of "human capital" is multi-layered. At the micro-level, G. Becker discovered the concept of human capital. He presented “human capital as a body of knowledge, skills, and abilities” [2]. The costs of education and training Becker sees as an investment in the development of human capital. First, he estimated the economic efficiency of education directly for the person himself. He defined the difference in income between a person with higher education (hi-e) and a poorly educated worker as a potential difference in income [3].

“The changing role of human capital is realized through the expansion of its structure and functions, the transformation from the item of expenditure to the main factor of industrial and social development. The basis of the new economy is the accumulated human capital, mainly affecting the social sphere and the economic potential of modern society" [1].

It is impossible not to note the opinion of A. Smith that the quality of life of “every nation” is determined by two different conditions: firstly, art, skill, and ingenuity, with which, in general, his work applies, and, secondly, the relationship between the number of those who are engaged in useful work, and the number of those who are not engaged in them. Whatever the soil, climate, or size of a particular people’s territory, the abundance or shortage of its annual supply will always depend on these two conditions. "[4] The very understanding of the role of human capital has undergone dramatic changes. The expansion of structural and functional potential expanded understanding of the spectrum of its influence on the development paradigm of the entire structure of society on a civilizational scale led to a new perception of countries and the world community. Besides, at this stage, the emergence of new economic, social, and political, postmodern realities, human capital occupied the leading place in the national wealth and in the total productive capital of developed countries, which is about 80% [1].

The main tasks of studying the article, the authors see:

1. to identify the dependence of human capital on the level of development of information and innovation infrastructure in the region;
2. determining the relationship between the strengthening of state support for infrastructure development and human capital;
3. the search for optimal approaches to the development of regional infrastructure and the substantiation of the key role of the state in the formation of human capital.

As the main tasks in the article:

1. the degree of influence of infrastructure directions and on various parameters of human capital is analyzed;
2. analyzes the role of the state in the development of regional infrastructure and the impact of human capital on the economic and social potential of regional development and its dynamics.

In the future, human capital will be able to influence the socio-economic climate of countries that invest 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 a positive economic, social, political, institutional, environmental, infrastructural result [1].

2 Retrospective

V. Patti turned to the possibility of monetary assessment of the productive properties of man in the seventeenth century. “He believed that the wealth of society depends on the nature of busy people and their ability to work. In one form or another, the idea of human capital was considered in the works of A. Smith, D. Ricardo, A. Marshall, K. Marx, F. Engels, J. Mill, L. Walras, J. B. Clark, and other scientists [3].

However, it was noted that the efficiency of the use of physical or financial assets is determined by the qualifications, competence, and health of people. This conclusion led to the formulation of the concept of human capital in the 1960s (Becker 1964). The theory of human capital has become an important element of an in-depth analysis aimed at assessing the role that the quality of the human factor plays in economic processes. According to the study, the highest levels of human capital are characteristic of the richest regions in Western Europe, while the lowest levels are observed in the poorest countries that have become EU members only recently, and in countries in southern Europe, including Greece. [5].

Therefore, A. Smith (2007) wrote that the increase in labor productivity depends primarily on the dexterity and skills of the worker, that the acquired and useful abilities of a person become part of the wealth of society [6]. According to J. Mill (1980), the “wealth of the country” category may include the skill, energy, and perseverance of workers. Karl Marx believed that more labor that is skilled is restored at regular intervals at relatively higher prices [3].

Thanks to the work of supporters of the "Chicago school", such as B. Weisbrod, T. Schulz, G. Becker, J. Mintzer, in the second half of the 20th century, the concept of human capital was formulated and formulated into a relatively comprehensive theory. They used in their work the principles and structural elements of the neoclassical school concerning social institutions such as education, health care, and other areas. In this paper, we are interested in information and innovation infrastructure, and this, in turn, is strongly associated with an affordable and high-quality education. It should be noted here that the EU is developing its cohesion policy with the main goal of reducing differences in regional development. The success of a policy is largely determined by the identification of factors contributing to such discrepancies. Human capital is one of the key factors for economic success [7]. Thus, Norway is gradually overcoming the Dutch disease through expanded reproduction of human capital. On the other hand, hydrocarbon production may remain a driver of economic growth in Russia. [6].

For G. Becker, this was a set of human skills, knowledge, and skills [3]. According to the definition of T. Schulz, human capital is the valuable qualities of a person, which can be strengthened by appropriate investments [3]. Nevertheless, T. Schulz and G. Becker paid more attention to explaining and supporting the idea of the fair role of human resources in creating an aggregate social product. In later works, there is no

consensus on the definition and content of the concept of "human capital", which can be explained by the complexity and universality of this phenomenon. For example, the Economic Dictionary of Penguins defines human capital as the skills, knowledge, and abilities of a person that allow him to earn income. In the future, this definition has been expanded to include intangible effects: human capital is the knowledge, competencies, and properties embodied in people who contribute to the creation of personal, social, and economic well-being [3, 8]. How the perception of the term Human Capital has changed from a historical perspective is demonstrated in this flowchart in Figure 1.

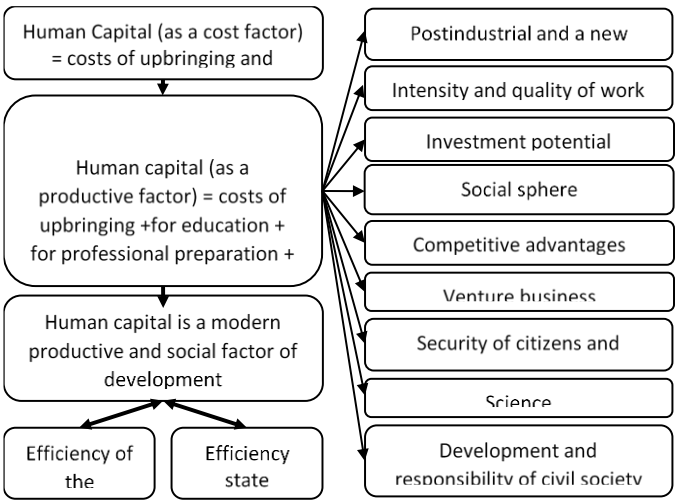


Fig. 1. The term "human capital" has changed from a historical perspective.

3 Education, knowledge, information, and digitalization are components of the quality of life

Access to education, knowledge, and informatization are the most sought-after areas in modern society. They directly determine the quality and direction in the formation and development of human capital. Growth and interregional migration of human capital are indirectly dependent on the level of development of the information and innovation infrastructure, as they are an integral component of the quality of life. Evaluation of the quality of life in the region allows us to assess the positive and negative processes in these areas, to coordinate inter-agency cooperation aimed at improving the conditions affecting it. The rating system allows evaluating inter-regional differences in the field of increasing the level of digitalization and informatization in the region, and, consequently, the quality of life. What is their value and how to measure it? Many of the indicators characterizing the level of development of information and innovation infrastructure in different regions of the Russian Federation, as before, differ significantly. To determine it in the regions and assess existing imbalances in this area, research is conducted every year, and ratings of the development of information and innovation

infrastructure are compiled based on objective indicators. And not least in this is the development of infrastructures in each region.

For assessing the quality of life and ranking, the source of information is data obtained from the following sources: Rosstat, Ministry of Health of Russia, Ministry of Finance of Russia, 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 providing the population with various types of services and climatic conditions in the region of residence, but we are a primarily interested level of development of information and innovation infrastructure.

Groups in which ratings are combined:

1. Social and demographic climate,
2. The level and accessibility of education of the population,
3. Provision of information infrastructure facilities,
4. The level of innovative development,
5. Digitalization of the economy,
6. The labor market.

Objectively, this system allows you to track the dynamics of processes occurring in the region and affecting the formation and quality of human capital. The following summary table shows how interrelated these indicators are and how individual they are in Table 1 [9].

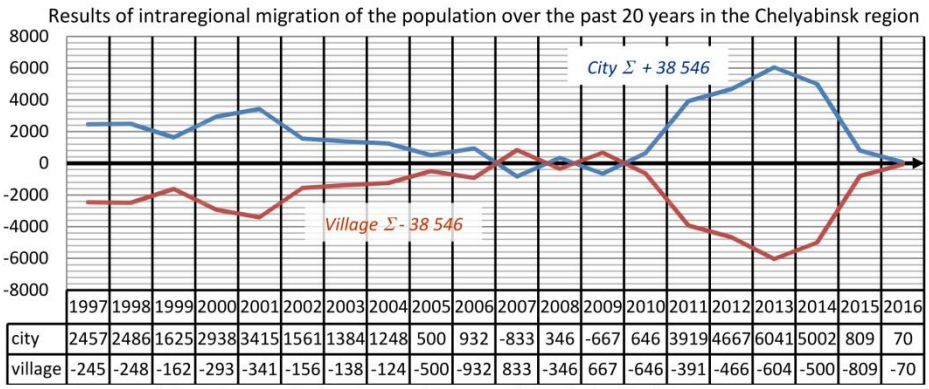
4 Human capital

Today several economic schools relate differently to the concept of human capital. Our task is to try to formulate the most complete definition of human capital, assess its capabilities and development prospects. So, as Becker said: “Parents then invest more in children when they expect more support from them, manipulating the preferences of their children, but this benefits both children and parents. In the end, we get a positive result from the mercenary parental principle. This shows us that even if children are altruistic concerning their selfish parents, they will still invest in the human capital of their children since this will be beneficial for them in the future” [12]. This principle works in the relationship between the state and the citizen. The uneven development of social infrastructure in the region generates internal migration. People leave the villages lagging behind the growth rates in the quality of education, informatization, digitalization, labor market volumes in search of better conditions. Moreover, they migrate to more comfortable and developed settlements and cities. As an example, consider the internal migration diagram in the Chelyabinsk region in Figure 2.

Table 1. Increase (decrease) in human capital in the regions of Russia, depending on the development of infrastructures.

№	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 region	969	40.22	2 545 937	2 535 202	- 6 282	- 4 453	- 10 735
…								
26	Primorsky region	9 129	44,19	1 929 008	1 923 116	- 2 683	- 3 209	- 5 892

(Source: [1]RIA rating, [2]Rosstat)



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
city	2457	2486	1625	2938	3415	1561	1384	1248	500	932	-833	346	-667	646	3919	4667	6041	5002	809	70
village	-245	-248	-162	-293	-341	-156	-138	-124	-500	-932	833	-346	667	-646	-391	-466	-604	-500	-809	-70

Source: Report of the Minister of Education and Science of the Chelyabinsk Region Kuznetsova A.I.

Fig. 2. The results of the intraregional migration of the population over the past 20 years in the Chelyabinsk region.

Thus, we can assess the impact of several areas of the regional infrastructure 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 region's economy. Besides, these results underscore the importance of the demographic transition as a mechanism that underpins human capital growth observed in Western economies in the twentieth century [8].

Human capital is a set of system elements where each element can be claimed in a particular area of the economy. The elements of this system can be both innate (physiological characteristics, biological, etc.), or acquired through education, experience gained in practice.

Factors determining human capital:

- learning ability and ability to constantly perceive new information, (professional development or even retraining),
- Level of vocational education and qualifications,
- Work experience and professional skills
- Social skills, ability to self-assess, leadership, moral qualities, education,
- Intellectual and analytical skills,
- Physical and physiological abilities and capabilities,
- Intuition, including emotional intelligence,
- Mental stability and reaction speed, including stress resistance.

In other words, we can say that in economic terms it is a measure of qualifications, educational potential, and other individual characteristics that affect not only its productive potential but also its potential income [11].

Characteristics and their combinations are very individual, if not unique. However,

according to the OECD (Organization for Economic Cooperation and Development), human capital is defined as skills and knowledge, competencies, and other personal qualities embodied in individuals or professional communities, acquired throughout life and used to produce goods, services, or various types of intellectual property in market conditions. However, you cannot ignore such a thing as an economically active age. “The economically active age is a well-defined criterion directly related to the time range of labor, professional, business, and creative activity of the economically active population” [10].

Speaking about the multi-layered concept of human capital, we cannot but touch upon such a concept as the core of a generation. “Figuratively speaking, this term can be compared with the heart of a person who radiates energy throughout the body. Namely, between 20 and 24 years of life, each person has the opportunity to choose any of the possible life paths. In the period from 25 to 29 years, there is a search for his way, from 30 to 34 years a person finds his way by making an informed choice, and from 35 to 39 years he moves intensively along the chosen path. For all subjects of the economic and social environment, this is important because at certain stages they, making the most important decisions, determine the direction of the future life. These are years of maximum concentration of energy and motivation, investments in the future, which for most people are mainly engaged in a career, family, and children ”[10].

For example, the aggregate human capital of an economy, determined by national educational standards, may be governed by several parameters relating to the needs of the labor market. You can predict such needs right now, and further informatization of the economy will lead to planning based on demand forecasts (or the need for one or another kind of specialists in the labor market) for a given level of quality. It can be assumed that this will reduce unemployment, adjust the number of places in a particular specialty in higher educational institutions and other professional educational institutions, and reduce social tensions. It is important to note that human capital occupies a central place among the indicators of the strategic efficiency of an enterprise, as it is a source of maximizing the company's profits and ensuring its sustainability and minimizing costs, as well as making recommendations for its development to modern enterprises [8].

Very relevant can be considered the fact that in the Russian economic environment comes the understanding that a person with his education, qualifications [3], practical skills, and experience (in the broad sense of the word) is an important and at the same time underestimated economic resource.

5 Innovative 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 state authorities to achieve the main goals of the development of society at a certain stage” [10].

According to most researchers, the key factor affecting the quality and growth of human capital is the presence or absence of infrastructure, the degree of its development

in the regions. Where is the so-called cradle of human capital? According to the estimates of most economists who study human capital, the infrastructure of regions conducive to the growth and development of the quality of human capital is transport, the social sphere, engineering, information, and innovation. Consider the types of infrastructures and their elements displayed in the block diagram in Figure 3.

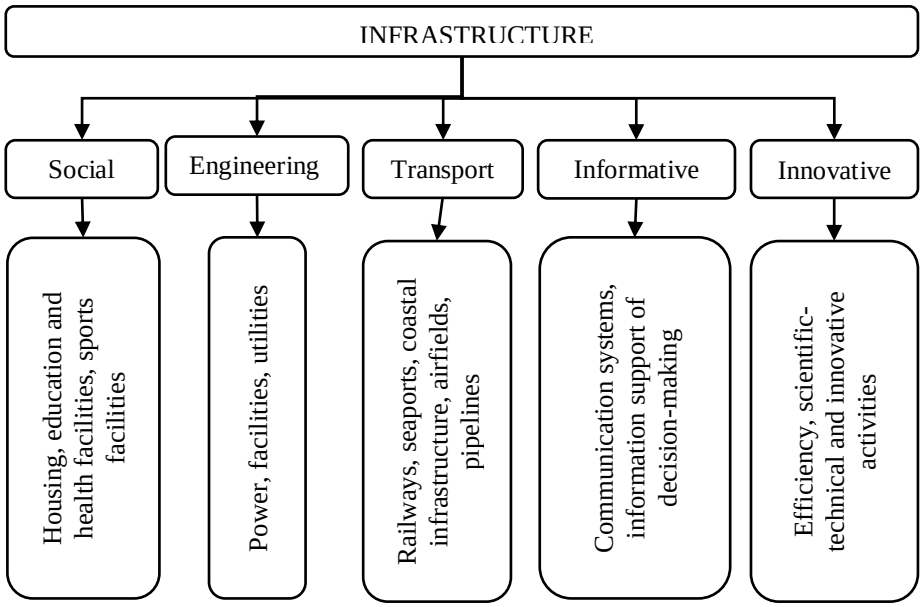


Fig. 3. Types of infrastructures involved in innovation processes.

Based on the material studied, the experience and opinion of the scientific community, it is safe to say that several infrastructure systems play a fundamental role in stimulating growth and, most importantly, as human capital. The solution to the most important socio-economic problems of such infrastructure complexes requires systematization. Besides, their elements form an inseparable socio-economic ecosystem for the production of human capital, which has the competencies necessary for the development of the economic Meso-level [13].

Today, an innovative approach to the development of regional infrastructure, as a kind of unified system, is due to necessity. Its primary goal is to bring several regions out of the economic crisis and to confront the aggressive economic situation in the international market. It is important to understand that investments in the development, modernization, and innovations of the regional infrastructure will fill the labor market with demanded personnel, reduce unemployment, increase people's incomes and improve the quality of life. The concept of the socio-economic development of the Russian Federation is a historic milestone in the life of the country, meeting the objective need to introduce scientific advances and technologies into the economic component of a new democratic society. Overcoming the negative manifestations and consequences of

the global economic crisis, which also affected our state, is a restructuring of the economy, investing in human capital, creating an environment for the innovation movement, raising education, science and technology, and health [14].

At this stage of economic and technological development, it is clear that the forms of economic use of human capital have changed significantly and acquired a completely different socio-economic status. Speaking of this, we mean innovative human capital, which has become an important element in the accumulation of economic and technological innovation. As an example, consider a number of them:

1. In modern conditions of the functioning of the economic system, the working capacity of an employee is not opposed to the material factors of production used. Factors of production are not currently opposed to functioning capital;

2. Labor integration unites all sectors of the national economy, because of which a single socio-economic complex is formed, based on the integration of material, scientific, and educational resources. In such a complex, each worker acts as part of a single completely economically active population [15]. Today, the existing system of professional labor is formed into a single system of reproduction, which, in turn, is part of an economic system based on scientific, educational, and material production [12].

The importance, and most importantly, the relevance of this concept of socio-economic development lies in the formation of a system of parameters of personal growth of the individual, which will become the modern concept of socio-economic development of the economy. This stage of human capital development is an intermediate goal, and the social parameters of the evolution of personal processes are the ultimate goal of the development of the economy of Russian society [15]. Thus, summing up the above arguments, we can say that the principles of the theory of innovative development are the basis of sustainable human development based on the knowledge economy and innovation. In the new socio-economic conditions, special human potential becomes extremely necessary, since it must not only have a high level of biological and intellectual-educational potential but also be able to constantly improve and develop its information-material environment.

6 Digitalization in Russia

According to the latest data from the Center for Financial Innovations and Non-Cash Economy of the Moscow School of Management Skolkovo, in the first half of 2018, on a 100-point scale, the interval of indicators of the Digital Russia Index narrowed and ranged from 37,2 to 75,14 points, whereas 2017 this interval was 26,06–70,01. This result indicates a reduction in the gap between the leading and closing regions of the Russian Federation.

According to the results of analytics in 2018, the top ten leading regions included Moscow, the Republic of Tatarstan, St. Petersburg, the Khanty-Mansi Autonomous Area (Ugra), the Tyumen Region, the YNAO, the Moscow Region, the Republic of

Bashkortostan, the Leningrad Region, the Chelyabinsk Region. Rating closes Sevastopol, Pskov region, the Republic of Adygea (Adygea), the Republic of North Ossetia-Alania, the Chukotka Autonomous Region, the Republic of Kalmykia, the Karachay-Cherkess Republic, the Republic of Tyva, the Republic of Ingushetia, the Jewish Autonomous Region. The average median value of the index in the first half of 2018 was 56,22 points, whereas in 2017 this value was 45,57 points [16]. In tabular terms by federal regions, it looks like Table 2.

Table 2. The results of the study at the level of federal districts.

position	Federal District	2018	2017	Changes in 2018 relative to 2017		
%	position	+/-		%	position	+/-
1	Ural	68,34	57,17	19,54%	**1**	0
2	When the Volga	62,65	46,93	33,50%	**4**	2
3	Central	62,24	50,05	24,36%	**3**	0
4	Northwestern	62,02	50,90	21,85%	**2**	-2
5	Siberian	56,00	41,91	33,62%	**7**	2
6	Far Eastern	54,66	44,20	23,67%	**5**	-1
7	Southern	53,88	43,06	25,13%	**6**	-1
8	North Caucasus	45,36	33,37	35,93%	**8**	0

It is especially necessary to note such regions as the Republic of Dagestan, Kostroma region, Chechen Republic, Chukotka Autonomous Region, Ryazan, Tver, Bryansk, and Oryol regions. Their growth rates in the first half of 2018 were 61,1%, while the average growth rate in the country is 26,4% [16].

7 Methodology

The author's methodology of the presented rating deserves special attention. It takes into account quantitative indicators and expert assessment, based, according to the authors, on the analysis of metadata reflecting the processes of digitization of regions.

The Digital Russia Index reflects the existence and success of initiatives related to digitalization at the regional level. If an initiative has concrete actions (for example, to create infrastructure), does not contradict the state's strategic view, and has positive socio-economic and business effects, it gets 100 points. The index is based on events that are related to the process of digitization of regions, as reflected in official open sources. The digitalization process is evaluated not only in terms of achieving goals but also in terms of its publicity. The Digital Russia Index assesses this process based on public references in open sources, taking into account the credibility, citation, and tonality of events.

Each event is assigned to one of the seven key components or sub-indices:

1. Regulatory and administrative measures;
2. Human capital (personnel) and training programs;
3. Research competencies and technological background;
4. Information infrastructure;
5. Information security;
6. Economic indicators;
7. Social effects.

Sub-indices, in turn, are evaluated through sub-factors, which in this study are events, facts, and other information obtained from open sources. An expert assessment for each fact is set based on formalized criteria, which can be aggregated into three key blocks:

1. Compliance with regulatory documents and state strategy in the field of digitalization.
2. The tangibility of the event, that is, the presence of specific steps, actions, processes.
3. Socio-economic, financial, and business effects of the above fact [16].

8 Trends and economic goals of digitalization in Russia

A high level of development and quality of human capital is necessary for the active implementation of institutional reforms, state modernization, technological modernization of production, and modernization of the economy itself. How to provide it? We assess the nature of constancy and dynamic complementarity between the two components of human capital: genetic potential and cognition [17].

Thus, a high level of development and quality of human capital in a state with a dynamically developing economy makes it possible to provide access to stable growth of economic indicators, improvement of the level and quality of life. Human capital is the main generator of the development of the potential of regions, and, consequently, of stable growth of the economies of developing countries. However, what can serve as the basis for the formation of the human capital of the required level of quality? Human capital is the source for the formation of a unified personnel corps capable of ensuring the growth of labor productivity and ensuring the integration of all available resources - the formation of a socio-economic system on an innovative basis [18]. The task of preserving and developing human capital is of strategic importance. According to A. Markov's just remark: "... human capital, by its nature, its economic origin and reproduction characteristics, is in the sphere of natural interaction of the state, business, individual and society as a whole" [19]. Thus, it is possible to estimate a specific world experience of economic growth, for example, in China. It is important to say about

investing in human capital in China and its links with China's participation in the global economy. The Cultural Revolution has largely destroyed education in China, especially higher education. Data from the early sixties and seventies show that very few people were in school. Only when the government began to finance more education and information infrastructure, China began to play a significant role in the global economy [14].

What are the trends of the digitalization of subjects of the Russian Federation? The study allowed identifying two groups of trends reflecting the development of the digital economy in Russia for subjects of the Russian Federation, at the state and business level. The authors identified a special interest in the digitization of public services to the identified "state" trends. Leadership in publications here has a federal portal for state services and regional portals for state services of constituent entities of the Russian Federation.

The second important trend, according to the authors of the study, was the motivation of private businesses to develop innovative technologies. Significantly increased the amount of data on the creation of "Smart Cities" (smart-cities). The study also made it possible to single out a special interest in this topic in such cities as Moscow, St. Petersburg, Kazan, Yekaterinburg, Krasnoyarsk, Novosibirsk, Ufa, Sochi, Perm, and Rostov-on-Don. The socio-economic effect of the use and development of digital technologies in creating the "Smart City" is, according to open sources, mainly in increasing the range of electronic public services and reducing the level of digital inequality. Residents are actively involved in the management of urban development through portals for the interaction of the population with the government, such as, for example, Active Citizen, Dobrodel, Solve Together, and others.

What is the federal view on the digital future of the Russian regions? The introduction of digitalization for "Smart Cities" is planned to be implemented with the help of large companies specializing in working with information and telecommunications sectors of the economy in the regions.

Thanks to the work of federal and regional legislative bodies, the number of legal acts on digitalization, which are practical with planned financial and technological results, has significantly increased. First of all, we are talking about the creation and operation of core competency centers, territories of advanced economic development (TAED), technology parks, including children's ones.

Conclusion

Today, digitalization from an abstract concept is transformed into real action by various states. The International Data Corporation (IDC) estimates that in 2018, global spending on digital transformation will exceed $ 1 trillion [16].

Speaking about the situation in Russia and summing up, it should be noted that the gap between the regional centers, except the capital regions, is not so great, but several features cannot be overlooked.

Firstly, the degree of development of infrastructures, namely, this aspect reflects the indicator of the scoring rating, is significantly higher among those entities that are located closer to the metropolitan region. Moreover, 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 remote regions with the least developed infrastructure. From which we can conclude: regions with the most developed infrastructure, with a higher quality of life and proximity to the capital, like a magnet, attract high-quality human capital. They devastate the regions in which the infrastructure is developing, but there are no prospects for further development and high-paying employment. To the same extent, entities in which the necessary infrastructure is less developed and there is an acute shortage of high-quality human capital suffer from the loss of this resource. Since they cannot provide themselves with quality human capital. Secondly, climatic features, considerable remoteness, isolation, and other features of some regions significantly complicate human life and work in these conditions. It is necessary to eliminate such distortions.

Besides, there is such a problem as a lack of funding for digitalization processes, both at the federal and regional levels. This is especially true for those subjects of Russia where the problem of the budget deficit has not been solved. All regions that have prepared digitalization projects are counting on co-financing from the federal center. But, according to information from open sources, out of 1,08 trillion rubles of budgetary investments in the digital economy, only two sums are accounted for as targeted investments in the regions: 250 million rubles to bring the security level of significant objects of critical information infrastructure to the specified values. And 1,4 billion rubles - to connect Chukotka to a single network. This is another aspect of digital inequality since, without access to the Internet, it is impossible to use either the State services or the services of Smart Cities. Still, there are having many problems, especially in the lagging regions of the Russian Federation with the introduction of modern cellular communication standards. Only a third of cellular base stations support the modern standard of mobile Internet - 4G and LTE (Long-Term Evolution). The introduction of the 5G standard has been postponed until 2022. At the end of 2018, 25% of the population of Russia does not have Internet access. There is a problem of the lack of curricula and disciplines in new professions, in fact already existing, but outside the legal field, for example, specialists in digital assets and blockchain. There is still no centralization and generalization of regional digital projects, the exchange of experience, developments. There is no motivation for industrial state-owned enterprises, except for agriculture, because access to world markets is limited by sanctions, and domestic orders do not require digital modernization, as the current level of manufacturability is sufficient for their implementation.

In conclusion, it should be noted that at this stage of the implementation of the Digital Economy of Russia program, there are qualitative positive changes that are supported by society. Besides, these changes will play no less important role in the formation of high-quality human capital than the development of high-quality social, transport, and engineering infrastructure. Already, it is comparable in relevance to investment in housing, kindergartens, schools, universities, hospitals, sports and entertainment complexes, cultural facilities, transport, energy facilities, utilities.

Now the digitalization of the economy should occur at a completely different quality and innovation level, united in a single information system, where human access to these benefits of civilization is a key task and an essential part of the digitalization of

the economic space of modern Russia. All this will make a person's life full, high quality. Such an approach to the development of regional infrastructure, as a kind of unified system today, is due to the need to withdraw several regions from the economic blow associated with the opposition of the aggressive environment that has developed on the international market in recent decades. It is important to understand that investing in the development, modernization, digitalization, and innovation of regional infrastructure will fill the labor market with qualified personnel, reduce unemployment, increase people's incomes, quality of life, and form a solid foundation for the functioning of the digital economy.

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