Analysis of Human Capital in the Republic of Kazakhstan through GIS: Regional Aspect

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Abstract
Currently, human capital is one of the key factors in the socio-economic development of regions and countries. However, the distribution of the population and, as a consequence, human capital across the territory of the Republic of Kazakhstan is extremely heterogeneous and subject to constant changes. The purpose of this article is to identify regional specifics of the indicators of human capital in the Republic of Kazakhstan. The article provides an analysis and assessment of the main indicators of human capital in the regions of Kazakhstan for the period 2010-2019. A typology of regions has been developed on the basis of the index method for assessing the level of human capital of the regions of the Republic of Kazakhstan. The created spatial geodatabase of the human capital includes demographic, socio - economic and environmental indicators of human capital. As a result of the research, the relationship between the development of human capital and the level of socio-economic development of the Republic of Kazakhstan regions was revealed.

1. Introduction

The key link in the development of any society is the value of the human factor, of human resources, sometimes referred to as human capital. Human capital has been and still is the most important factor in economic growth and sustainable development of the country as a whole. In the world, government spending on increasing human capital has long been not considered as social costs - it is an investment that generates income. And in the global competition, the winners are those countries that systematically enhance their own educational potential. Since education is one of the main factors forming human capital.

Starting from national independence, there is an improvement in the indicators of the socio-economic development in the Republic of Kazakhstan. So, over the past 10 years, according to the UN Human Development Index, Kazakhstan has moved 24 positions forward and ranks 58th with an indicator of 0.800 being among the countries with high human development potential (United Nations Development Programme Human Development Reports, 2018). In terms of the literacy rate of the population, Kazakhstan ranks 40th among 189 countries of the world and the second place among the CIS countries after Russia, which ranks 32nd in the ranking. (Ranking of the countries of the world by the level of education. United Nations Development Program, 2019). At the same time, the socio-economic and

demographic situation, the quality of life in the regions of the republic are not the same, which means that the level of human capital development is differentiated across the country. The level of human capital development in some regions is comparable to that of some developed countries, and the level of development of other regions is comparable to that of the developing countries of the world. The Republic of Kazakhstan seeks to improve the standard of living of the population in all regions, i.e. it pursues a regionalized policy aimed at equalizing conditions and increasing the level of their development.

This research focuses on the study of key indicators of human capital to assess regional differentiation of the level of human capital in the Republic of Kazakhstan and identify the causes of the current situation. The article presents a methodology based on the natural or index method for assessing human capital, which allows you to standardize different indicators.

2. Data and Methods

The information base was the official data of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (stat.gov.kz.) This is the main official institute performing statistical activities in the Republic of Kazakhstan, which collect data since 1991 to nowadays.

Also data was collected fromthe national SDG reporting platform of the Bureau of National Statistics. This platform was created for monitoring SDG implementation. Additionally used monographs, scientific articles, publications and reports of the UN, the World Bank and others. Information-analytical system "Taldau"applied software packages were used in data processing. This information-analytical system was created in 2017 on the base of the Bureau of National Statistics, where collected statistical data since 2000 to present days (taldau.stat.gov.kz). Geographic information technologies were used in scientific research. When writing the article, both general scientific and geographical methods were used: historical-geographical, statistical analysis, analytical, comparative-geographical analyses.

3. Results and Discussion

The category of "human capital", problems and issues of human capital development are reflected in the works of both classics and modern scientists from near and far abroad. The English economist, the founder of English classical economic thought, W. Petty, was the first to attempt to quantify human capital. He called human capital both the person himself and his useful qualities. W. Petty considered expenditures on schools, universities, support for gifted and talented people, as well as assistance to those in need, orphans as important items of expenditure in the state budget (Petty, 1899). The theoretical model of human capital was developed by G. Becker, who argued that human capital is a stock of knowledge, skills, and motivations available to everyone. "These investments improve skills, knowledge or health and therefore contribute to an increase in cash or in-kind income" (Becker, 1964). Nobel laureate S. Kuznets believed that human capital is the main factor of the possible stable growth of the economies of developing countries (Kuznets, 1971). The merit of advancing human capital into an independent categoryof economic analysis belongs to the american economist, Nobel Prize winner T. Schultz (Schultz, 1971). The American scientist S. Fisher, who further developed the theory of human capital, proposed the following definition: "Human capital is a measure of the person's ability to generate income. Human capital includes innate ability and talent, as well as education and acquired qualifications" (Fisher et al., 1993). Han and Lee (2020) made an assessment of human capital by the composition of the labor force by age, sex, education and wage level.

The phenomenon of human capital was actively discussed among Russian scientists. S.A. Dyatlov interpreted human capital as a stock of health, knowledge, skills, abilities, motivations formed as a result of investments and accumulated by a person, which are expediently used by him in a particular sphere of social reproduction, contribute to the growth of labor productivity and production efficiency and thereby affect to the growth of the earnings of a person, a company and the whole society (Dyatlov, 1994). At the same time, some scholars add that human capital, being part of the total capital, represents the accumulated costs of general education, special training, health care, labor movement. (Dobrynin et al., 2006 and Korchagin, 2005). Kapelyushnikov clarified that the theory of human capital studies the process of qualitative improvement of human resources. In this case, human capital is understood as a stock of abilities, knowledge, skills and motivations embodied in a person (Kapelyushnikov, 2012).

At the moment, there are no holistic studies devoted to the system analysis of the problems of human capital in the Kazakhstan economic literature. Kazakhstan economist A.G. Mukhamedzhanova defined human capital as a characteristic of the creative, constantly accumulating and renewing abilities of workers that meet the parameters and development trends of modern social production. She recommends a reorientation of social spending and scientifically substantiates the need for investment in human capital (Mukhamedzhanova, 2002). In the researches of Maydirova (2006) and Onyusheva (2013) the influence of the economic policy of the state on human capital has been studied in the context of the information economy in the Republic of Kazakhstan. Also, Kazakhstan's research reflects the problems of developing the methodological foundations of gender policy in the socio-economic sphere of the country and the effective use of the nation's human capital (Seitkhozhina, 2008).

Human capital is formed through investment in intellectual activity. Including - in upbringing, education, health, knowledge (science), entrepreneurial ability and climate, in information support of labor, in the formation of an effective elite, in the safety of citizens and business and economic freedom, as well as in culture, art and other components. It can be said that human capital is formed due to the migration inflow from other countries, or decreases due to its outflow (Sydykov, 2014). So, in science there is no single concept of the essence of human capital, and there are different approaches.

Kazakh scientists are engaged in the study of various aspects of human capital, quality of life and human development in general (Nyussupova, 2018 and Meldakhanova and Kalieva, 2012). Much work in the study of Kazakhstan's human capital is being carried out by the Kazakhstan Institute for Strategic Studies under the President of the Republic of Kazakhstan. However, the final approach to assessing human capital, with specific quantitative and qualitative indicators, has not been found.

The concept of "human capital" is considered by the authors in a broad sense and includes demographic, socio-economic and environmental components (Gafiyatova, 2004) Within the framework of this approach, a system of statistical indicators of the level of human capital development was developed by the authors. Given that human capital is formed throughout life in the process of human development, the study was carried out according to the stages of accumulation, formation and use of this type of capital. The accumulation stage is the period of birth and survival of children in the first year of life; stage of formation - the period from the moment of receiving education to the beginning of labor activity; application stage - period of employment (Figure 1). The population of the Republic of Kazakhstan as of January 1, 2021 amounted to 18.87 million people, with a share of the urban population - 59.1% and rural population - 40.9%. The main source of population growth is natural growth. For the period 2010-2019 the natural growth of population increased from 221.7 thousand people (13.58 ‰) to 269.2 thousand people (14.54 ‰), while the migration of the population has a negative trend, increasing in the negative direction from 0.95 ‰ up to -1.8 ‰ (stat.gov.kz).

For 2016-2027 population growth rate is expected to decline to 0.82%. This is due to the entry into the reproductive age of those who born after 1995. From 2026, an increase in the birth rate in the country is expected, since those born in the period 2005-2010 will enter the reproductive age (Figure 2). In 2020, according to the official statistics of the republic, life expectancy was 73.19 years (stat.gov.kz). According to the UN forecast, life expectancy at birth by 2035-2040 will be 75.93 years (Figure 3). Age structure is one of the most important demographic characteristics of the population, which is associated with almost all demographic processes. On the one hand, the age structure is a complex result of processes such as fertility, mortality, immigration and emigration. At the same time, it significantly affects a number of socio-demographic phenomena, such as marriage, divorce, migration, labor market, etc. (Káčerová et al., 2014). As of January 1, 2020, the working age population was 10 874 thousand, young population (0-15 years) – 5 636 thousand, elderly population (women 59 years and older, men 63 years and older) – 2 120 thousand people (stat.gov.kz). In 2020, the share of the working-age population amounted to 58.4% of the total population, including 49.4% of women, and by 2030, the share of the working age population will decrease to 57.9%.
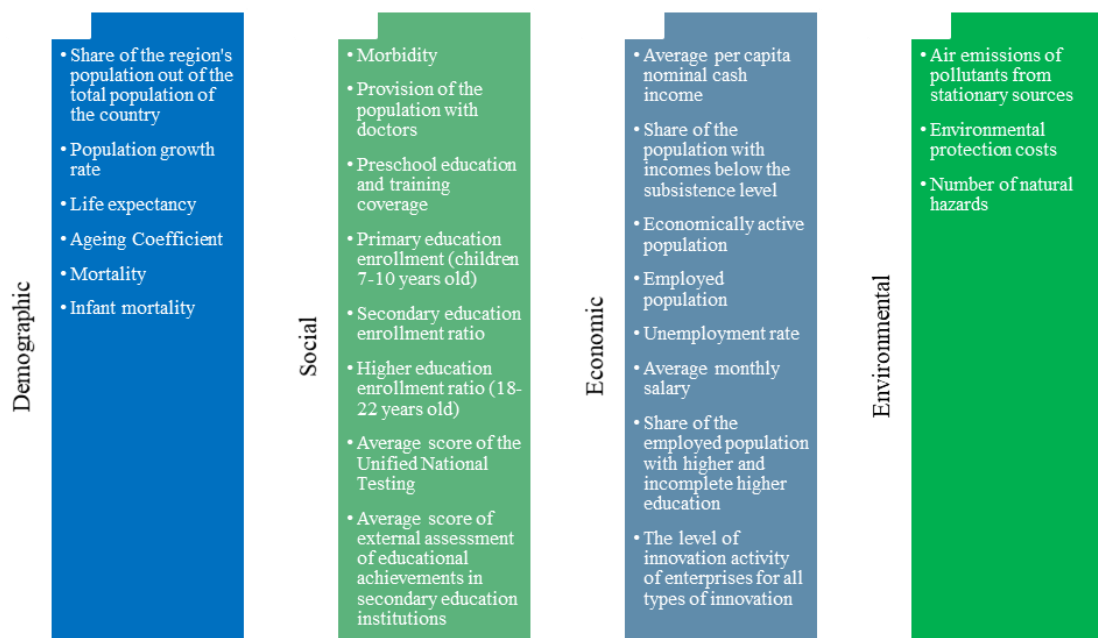

Figure 1. The indicators of human capital development level in the Republic of Kazakhstan's regions
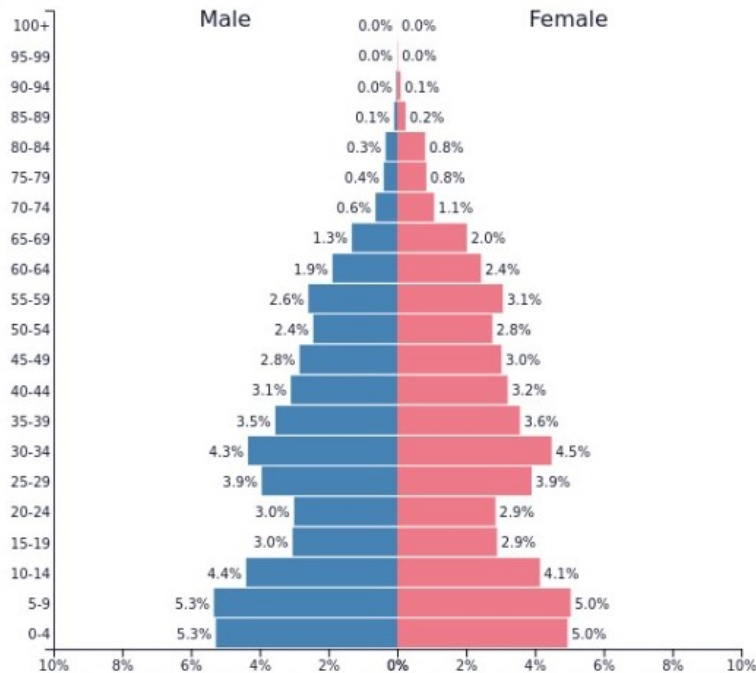
Figure 2: Sex-age structure of the population of the Republic of Kazakhstan in 2020
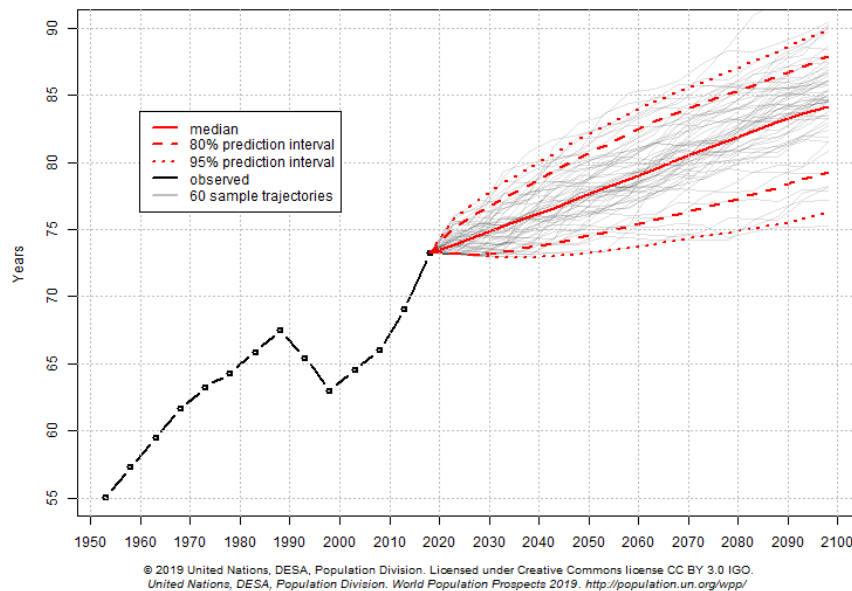

Figure 3: Life expectancy in of the Republic of Kazakhstan

This is due to the fact that a small generation of those born in the late 1990s and early 2000s will enter the initial working age, and a large generation of those born in 1950-1955 will leave this age group - men (63 years old) and 1955-1960 - women (58 years old). From 2025, the situation is expected to improve - a large generation of those born during 2002-2014 will enter the working age, and a small generation of men and women born in the second half of the 50s and 60s of the XIX century will leave this group. The socio-economic factors in the formation of human capital include:

1) public health.
2) the labor market.
3) level of education and vocational training of the population.
4) working conditions of employees, the level of material security and technical and economic development of enterprises.

5) social development of personnel of enterprises;
6) advanced training of employees.

Decree of the Government of the Republic of Kazakhstan dated December 4, 2009 No. 2018 approved a list of socially significant diseases. These diseases actually have a negative impact on human capital at all levels (Table 1).

The most serious is the increase in the number of newly diagnosed patients with such serious diseases as, malignant neoplasms, diabetes mellitus, diseases caused by the human immunodeficiency virus and characterized by increased blood pressure. Some of these diseases leads to the limitation of people life and the need for social protection from the state and society. For the period 2010-2019 there is an increase in the incidence of cancer from 181.2 to 194.7 per 100 thousand people, diabetes mellitus from 146.6 to 251.0 cases per 100 thousand people, diseases caused by the human immunodeficiency virus from 12.1 to 19.0 cases per 100 thousand people in the republic (Statistical collection, 2020).

In the context of regions, there is an uneven distribution of human resources. The indicator of the provision of doctors in the period 2010-2019 increased to 39.7 per 10 thousand people (2%). There is an increase in the number of nurses in all regions of the Republic of Kazakhstan. The provision of hospital beds is 44.6 units per 10 thousand people in the Republic of Kazakhstan in 2019, which is 46.6% less than in 2010. During the research period, for political and financial reasons, there is a decrease in the provision of the population with hospital beds. There is an increase in the most justified forms of providing medical care - day hospitals in outpatient clinics and hospital organizations, as well as the opening of self-supporting departments in hospital organizations.

The development of education in the country is an important factor in the formation of human capital. It was revealed that each additional year of schooling increases the average earnings. In the United States, an experiment of replacing a low-skilled teacher in an elementary school classroom with an average-skilled teacher showed a $250 000 increase in total lifetime income for students in that class (Chetty et al., 2014). Although higher and secondary specialized education play an important role in the formation of human capital, qualitative measures of this important factor have not yet been approved. It is necessary to use quantitative indicators in combination with qualitative ones. By adjusting for quality of learning, this component reflects the fact that students in some regions receive much less knowledge than children in other regions, although they study in schools for approximately the same amount of time (Ginsburg et al., 2016). Consider the coverage of the population by education of the Republic of Kazakhstan from preschool to higher education. During the research period 2010-2019, the indicator of the provision of children with places (there are children per 100 places) in preschool organizations has a positive trend, so if in 2010 there were 104.9 children per 100 places, then in 2019 this indicator was 90.2. Primary education coverage of children aged 7-10 in the republic over the past 20 years has always been high and had a positive trend. Over the past 10 years the the enrollment rate in secondary education increased by 4.1% and amounted to 104.6% (taldau.stat.gov.kz). Higher education today has become a basic need for Kazakhstan society. Higher education determines the scientific and technological development of the country. For 2010- 2019 the total number of universities decreased by 16.8% or 24 units. In the period 2010-2018, there is a tendency to a decrease in the number of students in the republic as a whole, the lowest indicator was noted in 2015 (459.4 thousand students).

Table 1: Morbidity of the population of the Republic of Kazakhstan with socially significant diseases

	Morbidity of the population of the Republic of Kazakhstan (people per 100 thousand people)									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tuberculosis incidence	95.3	86.6	81.7	73.4	66.4	58.5	52.7	52.2	48.2	45.6
Human immunodeficiency virus disease	12.1	12.02	11.8	11.4	12.57	13.0	15.44	15.83	16.96	19.00
Diabetes	146.6	158.3	170.8	170.4	164.4	172.7	200.4	204.2	210.1	251.0
Malignant neoplasms	181.2	183.0	143.2	155.3	198.7	207.7	206.7	197.9	195.7	194.7
Viral hepatitis	30.67	16.24	10.34	6.82	5.92	3.35	3.1	4.18	5.82	3.88
Mental and Behavioral Disorders	122.2	114.4	101.7	90.5	58.9	55.0	60.8	54.2	54.7	52.8
Cerebral palsy	81.6	71.0	71.6	68.7	71.7	73.6	82.9	83.3	81.4	80.3

But in 2019, a sharp increase in the number of students was recorded, the maximum indicator for the research period was reached (604.3 thousand students), which is explained by the entry into the ranks of students of a large generation from among those born during 2002-2014. The gross enrollment rate in higher education (18-22 years old) increased from 49.5% to 67.0% (stat.gov.kz). The next factor that forms human capital is economic (Figure1). For the period 2010-2017 the share of the population of the Republic of Kazakhstan with incomes below the subsistence level decreased from 6.5% to 2.6% (stat.gov.kz). An increase in this indicator has been observed since 2018. In the third quarter of 2020, the share of the country's population with incomes below the subsistence level increased to 5.7%, which is the worst indicator since 2011. The portrait of poverty in Kazakhstan has regional differentiation and is more pronounced in rural areas. The rise in unemployment, the general level of prices for goods and services, has led to an increase in the number of the poor or citizens whose incomes are below the subsistence level.

Indicative in this respect are the data on what problems concern the citizens of the country in the first place. The data of sociological research in dynamics indicate a decline in the standard of living in the country. According to sociological studies in 2017, almost 80% of the population noted that they spend all their money at once and have almost no opportunity to save. Even then, sociologists stated that the real state of affairs demonstrates the growth of social pessimism. In 2020, the situation worsened due to the spread of the coronavirus and the introduction of quarantine measures, which had a direct impact on the deterioration of the financial situation.

The basis for the effective formation of human capital and the economic development of the state is the labor market. For the period 2010-2019 the labor force increased by 610.8 thousand people, the employed population by 7.2%, the unemployment rate decreased by 1% and amounted to 4.8%, (stat.gov.kz). In the Kazakhstani labor market, unemployment is structural, which leads to a shortage of labor in different segments of the labor market and, at the same time, to unemployment. During the research period, the average monthly wage increased in national currency from 77.6 thousand tenge to 186.8 thousand tenge. But when calculating in dollars, there is a decrease in the monthly fee from 527.9$ in 2010 to 485.2$ in 2019. The highest salary in the republic was in the Atyrau oblast - 351.1 thousand tenge (912$). This is 89.2% higher than the national average. Relatively low wages among residents of Almaty, Turkestan and Zhambyl oblasts (ais.kaznu.kz). For the period from 2010 to 2019

average per capita nominal cash income of the population of Kazakhstan increased in 2.7 times and amounted to 104.3 thousand tenge (270$) (stat.gov.kz). The environmental factors affecting the formation of human capital include the general ecological state and natural and climatic conditions. According to experts from the World Health Organization (WHO), the influence of environmental factors on the health of the population is from 17 to 20% of all significant factors (World development report 2004, 2006).

Human capital has many dimensions, however, scientific works have found it expedient to abandon the "wide and eclectic set of indicators" in favor of a single generalizing indicator (Stiglitz et al., 2009). However, this would require a sequential aggregation method (Ravallion and Martin, 2011). The use of a transparent indicator will enable comparison between different countries and speed up the process of policy action, also to monitor changes over time and situation in different countries and regions. This research proposes a methodology for assessment of human capital in the regions of the Republic of Kazakhstan. Based on the factorial analysis, key indicators of human capital were selected, grouped into aggregated components of human capital: demographic, economic, social and environmental (Figure 1). When calculating the integral human capital index, the authors selected indicators not only for quantitative analysis, but also for qualitative. Much attention was paid to indicators related to education and the labor market, since human capital is formed and realized (consumed) in these areas. Research in the world of work and education confirms that higher education significantly increases the wages of an employee, regardless of where he is employed. The results show that each additional year of study at a university contributes to an increase in the level of wages by 6-7%, while an additional year of study in organizations of technical and vocational, post-secondary education - by 3.2% (Golenkova et al., 2018). Therefore, for the indicators of these components of human capital, a qualitative analysis was applied. Thus, for a qualitative analysis, such national indicators were selected as "Average score of the unified national test", "Average score of External Assessment of Educational Achievements in secondary education institutions" (EAEA), "The share of the employed population with higher and incomplete higher education."

Domestic and international instruments for assessing the quality of education are used in the Republic of Kazakhstan. National procedures Unified National Testing (UNT) and since 2012 the External Assessment of Educational Achievement (EAEA) provide information on the level of

knowledge of students based on the final and intermediate cross-sections within the country. Since the EAEA was introduced in the Republic of Kazakhstan since 2012, in the article the statistical data for EAEA were considered for 2012-2019.

For an integral assessment of the human capital of the regions, indicators should be considered in the system. Coefficients for the use of priorities by the expert method (Serebryakova et al., 2019). To begin with, the coefficients of significance of each of the indicators of human capital were calculated. There are various techniques for calculating indices. We have chosen a linear scaling method for key indicators, based on the definition of reference points (maximum and minimum indicator values). The calculation is made according to the formula (1), if the relationship between the indicator and the quality of life is positive:

$$I = \frac{X_j^i - X_{min\,I}}{X_{max\,I} - X_{min\,I}},$$

Equation 1

by formula (2), if the relationship is negative:

$$I = 1 - \frac{X_j^i - X_{min\,1i}}{X_{max\,i} - X_{min\,i}}.$$

Eqaution 2

The integral indicator of the region's human capital is determined by the formula (3):

$$I_{HC} = 0.20\,Q_{dem} + 0.32\,Q_s + 0.30\,Q_e + 0.18\,Q_{ecol}$$

Eqaution 3

where,
I_{HC} – integral indicator of the region's human capital
Q_{dem} – weighted demographic indicators
Q_e – weighted economic indicators
Q_s – weighted social indicators
Q_{ecol} – weighted environmental indicators

The values of the indicators have been standardized for evaluation purposes (Table 2). The calculations, according to the integral assessment, of the human capital of the regions allow us to conditionally distinguish the following regions by the level of accumulated human capital: "magnet for talents", "industrial belt", "industrial-agrarian arc", "periphery" (Figure 4). The highest integral indicator in 2019 is in Almaty (0.604) and Nur-Sultan (0.660) cities. These regions are conventionally designated "magnets for talents", where high rates are observed in all components, except for Almaty city with an increasingly important environmental situation. Almaty and Nur-Sultan cities are distinguished by post-industrial specialization, high life expectancy, high incomes of the population, low birth rates and high migration inflow of the population.

Table 2 - Integral assessment of the human capital in the regions of Republic of Kazakhstan

Regions	Integral Human Capital Index									
	2010[1]	2011[1]	2012	2013	2014	2015	2016	2017	2018	2019
Akmola	0,32	0,34	0,33	0,39	0,44	0,39	0,44	0,45	0,42	0,44
Aktobe	0,50	0,55	0,50	0,44	0,52	0,38	0,47	0,52	0,49	0,47
Almaty	0,38	0,41	0,41	0,44	0,45	0,40	0,43	0,45	0,42	0,45
Atyrau	0,50	0,56	0,57	0,59	0,57	0,55	0,52	0,49	0,46	0,53
West Kazakhstan	0,49	0,50	0,51	0,50	0,49	0,42	0,45	0,49	0,44	0,46
Zhambyl	0,46	0,42	0,41	0,41	0,45	0,35	0,37	0,40	0,40	0,40
Karaganda	0,44	0,36	0,37	0,37	0,44	0,35	0,33	0,47	0,39	0,45
Kostanay	0,37	0,38	0,38	0,43	0,40	0,38	0,39	0,41	0,31	0,40
Kyzylorda	0,39	0,36	0,36	0,39	0,33	0,30	0,39	0,44	0,41	0,40
Mangystau	0,41	0,38	0,43	0,37	0,51	0,49	0,41	0,43	0,43	0,46
Pavlodar	0,35	0,42	0,46	0,37	0,44	0,38	0,39	0,43	0,40	0,39
North Kazakhstan	0,36	0,33	0,38	0,36	0,36	0,32	0,32	0,34	0,30	0,30
Turkestan *	0,43	0,42	0,44	0,41	0,39	0,35	0,33	0,36	0,35	0,38
East Kazakhstan	0,38	0,39	0,41	0,37	0,44	0,37	0,39	0,47	0,40	0,41
Nur-Sultan city	0,48	0,49	0,50	0,53	0,69	0,64	0,61	0,63	0,67	0,66
Almaty city	0,56	0,55	0,58	0,56	0,55	0,58	0,63	0,63	0,58	0,60
Shymkent city **									0,45	0,47

* until 2018 South Kazakhstan oblast
** since 2018 city of republican significance
[1] excluding the indicator "Average score of external assessment of educational achievements in secondary education institutions"
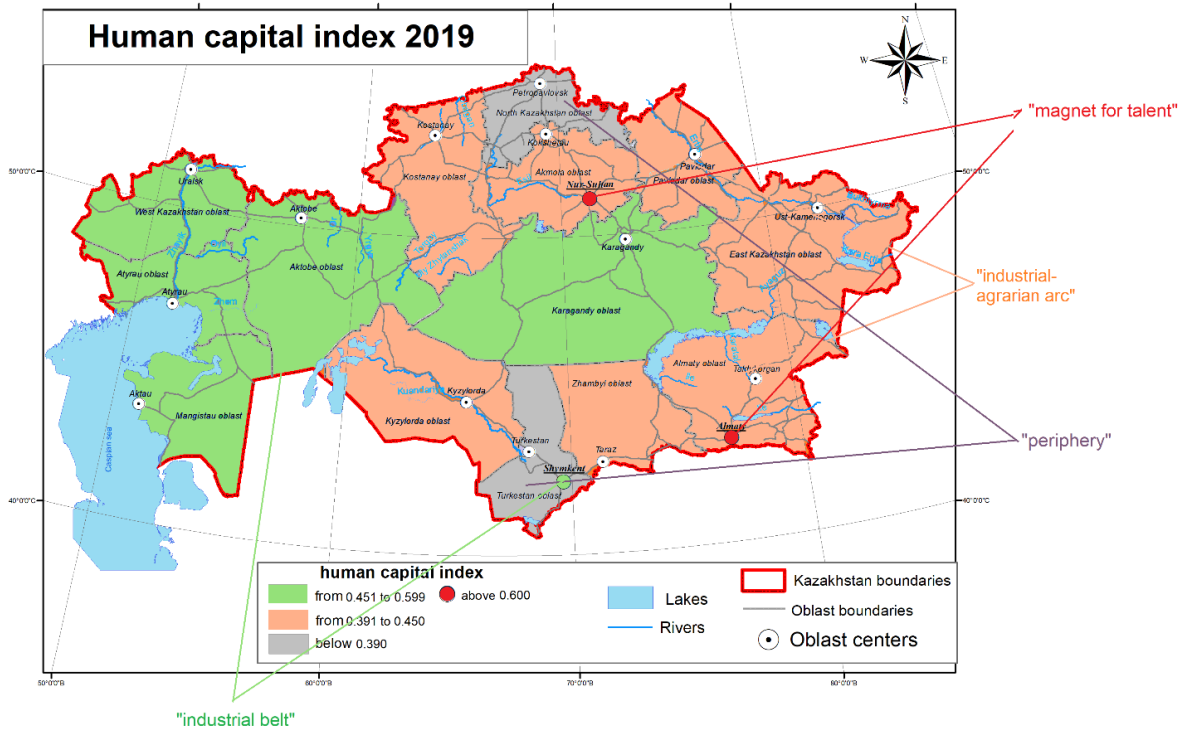
Figure 4: Typology of the Republic of Kazakhstan regions by the level of accumulated human capital in 2019
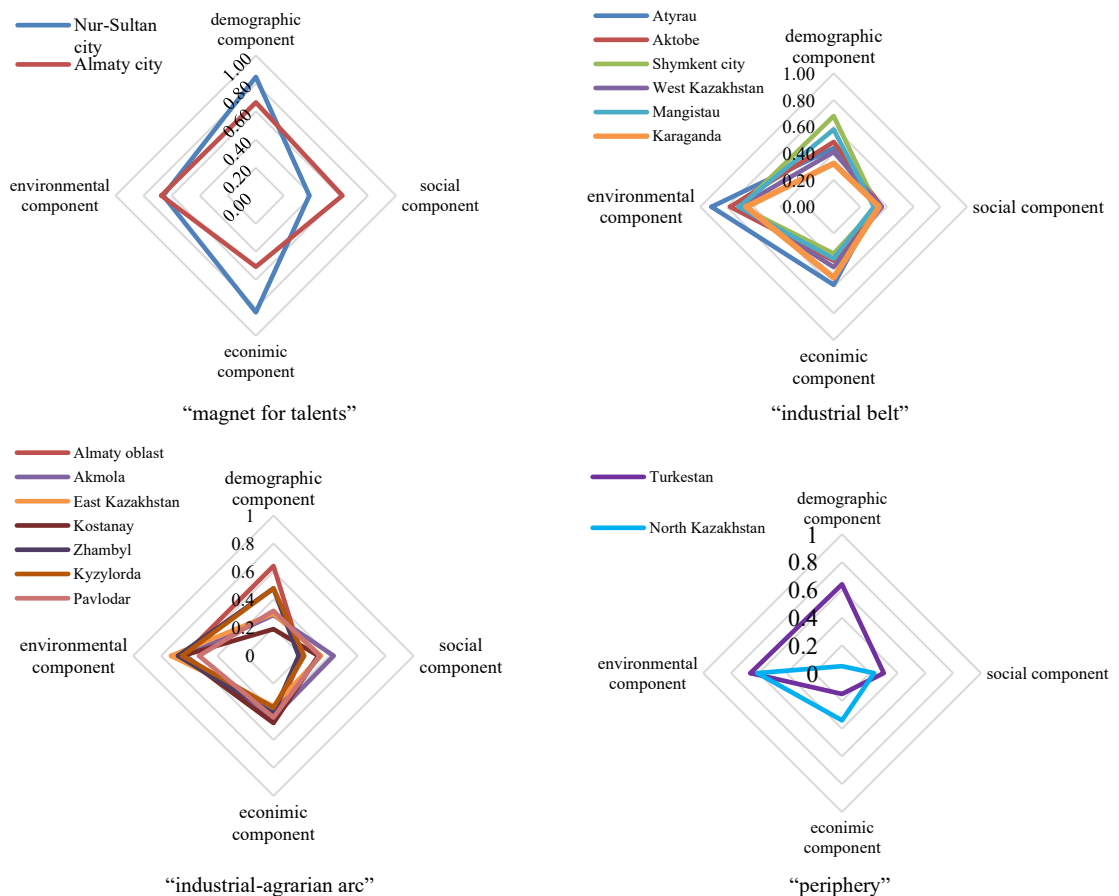

Figure 5: The structure of the Republic of Kazakhstan regions' human capital in 2019

Atyrau, Aktobe, West Kazakhstan, Mangystau, Karaganda oblasts united in the category of "industrial belt" are distinguished by the raw material specialization of the economy, high income level, average life expectancy and high birth rate (Figure 5). Also in this category is the city of national significance Shymkent, which received its status of a megalopolis in 2018 (Decree of the President, 2018). The change in status had a positive effect on the development of the metropolis. The local budget has grown, and socially significant objects are being built. Previously, Shymkent was the center of an agricultural region - South Kazakhstan region. In two years, the metropolis has moved into the "industrial belt" category. The regions of the "industrial belt" category are characterized by high environmental indicators. This fact is explained by the fact that these industrial regions have the highest expenditures for environmental protection in the republic due to their environmental vulnerability.

For the regions of the "industrial-agrarian arc" (Almaty, Akmola, East Kazakhstan, Kostanay, Zhambyl, Kyzylorda and Pavlodar oblasts), as the name suggests, the industrial-agrarian type of economy is characteristic, the average level of income of the population, low life expectancy, high morbidity due to environmental conditions and low fertility. In these regions, both large industrial facilities and agriculture are developed. The "periphery" regions, which include the North Kazakhstan and Turkestan oblasts, are characterized by an agricultural type of employment, low income, and average life expectancy. Against the background of the ethnic composition, mentality and national characteristics, the southern region - the Turkestan oblast is characterized by a high birth rate, while the northern region - the North Kazakhstan oblast is characterized by a migration outflow of the population, a low birth rate (Figure 5).

Based on the indicators of the economic, social, demographic and environmental components of the indicators of the Kazakhstan regions' human capital for 2010-2019 integral indices of human capital were calculated through synthesis of different methods (World Development Report, 2019, Mincer and Polachek 1974, Kraay, 2018 and Zubarevich, 2003), a typology of regions is carried out according to the level of accumulated human capital.

4. Conclusion

The calculations made it possible to determine territorial disproportions and identify groups of regions with different levels of human capital. The analysis showed that the category of "magnet for talent" includes Nur-Sultan and Almaty cities with a steady increase in demographic and economic

indicators, which is quite natural, since these cities are key scientific, cultural, industrial and financial centers of a country with a high population of both due to natural and migration. These regions also have relatively high social indicators. The regions of the "industrial belt" are characterized by high and medium demographic indicators. Economic indicators show growth in these regions due to the development of oil and gas, mining and metallurgical industries. A high level of social indicators is typical only for the Almaty city. For the rest of the regions, most of the socio-economic indicators are insufficient at a high level.

Regions of the category "industrial-agrarian arc" include Almaty, Akmola, East Kazakhstan, Ksotanay, Kyzylorda, Zhambyl, Pavlodar oblasts. There are average demographic and average economic indicators, as well as low social indicators. The next category in terms of the level of human capital is "periphery". Two regions fall into this category: North Kazakhstan and Turkestan oblast. Both regions are located on the northern and southern outskirts of the republic and are characterized by low socio-economic indicators. Against the background of the ethnic composition, mentality and national characteristics, the southern region - the Turkestan oblast is characterized by a high birth rate, while the northern region - the North Kazakhstan oblast is characterized by a migration outflow of the population and a low birth rate.

Analysis of demographic, economic, social and environmental indicators revealed that different human capital has formed in different parts of the country. In the 4 regions of the country identified by the level of human capital, there is a large gap in indicators, so the difference in the level of income of the population between the post-industrial "magnet for talents" and the agricultural "periphery" is 4 times. In fact, we have two extrema, i.e. Kazakhstan which is in 30 developed countries and Kazakhstan which is in 70-80 positions.

The effective development of the economy of any state determines the level of development of its human capital. And this necessitates constant monitoring and implementation of activities to improve the quality of life of the population and the level of human capital.

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