Healthcare and education problems of Georgia in terms of human capital development

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Abstract

The human factor acquires a more essential role and importance in the aspects of management, monitoring and activation of socio-economic processes day by day. This is possible to achieve the effectiveness of the socio-economic development of the country, according to a number of indicators: by increasing the specific share of specialists with a high level of professionalism in all spheres of government, by increasing the specific share of highly qualified labor of workers, by raising their level of education and by making the most of the potential of those persons who are involved in the formation of human capital. They participate in the accumulation-use system. The purpose of the study is to analyze the human capital development opportunities in the health and education sectors of Georgia, the level of knowledge of the human resources in the sector, thus this is and will be a decisive factor in the development of the sector. **Since 2016, we have been studying and analyzing investment and management issues in both areas using the main elements of human capital as an example.**

In the era of globalization, the demand for human capital is increasing. Innovative development of the country and industries is a long process. Healthcare and education are key elements of human capital and the backbone of innovative development. Therefore, the formation and development of competitive human capital, as the main factor for the activation of innovative processes in the country and sectors, its strengthening for achieving an effective level of economic growth and competitiveness should be a priority.

Keywords

global innovation index, global competitiveness index, human capital.

Introduction

The research problem is the existing problems in the healthcare and education systems of Georgia in **terms of human capital development**.

In the globalization era, the topic is relevant, since the country's ranking, situation and development strategy, including in terms of sectors, are determined according to international global indices.

The **target** of our research is to study the dynamics of the health and education systems of Georgia according to international, global competitiveness and human development indices. A number of scientific publications, doctoral theses, materials of international conferences, since 2016, have been devoted to the research of the given problem by the authors, namely the state of the country's human capital and innovative development and existing problems based on the analysis of international, global competitiveness, innovative development and human development indices. [6]

The efficiency of the country's socio-economic development can be achieved according to a number of indicators by increasing the specific share of specialists with a high level of professionalism in all aspects of management, by increasing the specific share of highly qualified workers, by raising their level of education and maximizing the potential of those persons, using those who participate in the human capital formation-accumulation-use system.

Our goal is to assess the level of human capital development in the health and education sectors of Georgia, because this is a decisive factor in the development of the sector.

Also, learn and understand investment and management problems in both fields, on the example of basic elements of human capital, health capital and knowledge capital. One of the essential features of the globalization process should be considered to be the realization of the "knowledge-oriented" economy and the promotion of the role of human capital as a special resource of competitiveness in modern economic systems. Due to the possession of a large resource of creativity and innovation, the demand for human capital is increasing.

Innovative development is a long process. But there are fields that represent the backbone of innovative development - medicine and education.

The formation of competitive human capital contributes to intensive economic growth, increases the employment of the population and its well-being, leads to large-scale development of innovative industries, etc.

Therefore, the development of human capital as the main factor for the activation of innovative processes and its strengthening in order to achieve an effective level of economic growth and competitiveness requires the following directions:

- to determine the essence of such economic categories as: "human capital" and "competitiveness", "competitive human capital", "innovative policy and strategy";
- To study the state of health capital and knowledge capital of basic structural elements at the stage of human capital formation-accumulation and use in Georgia;
- to study the quality level of human capital elements in the conditions of the development of the innovative economy based on international indices and search for ways to improve them;
- Determination of the role of human capital management at the state level.

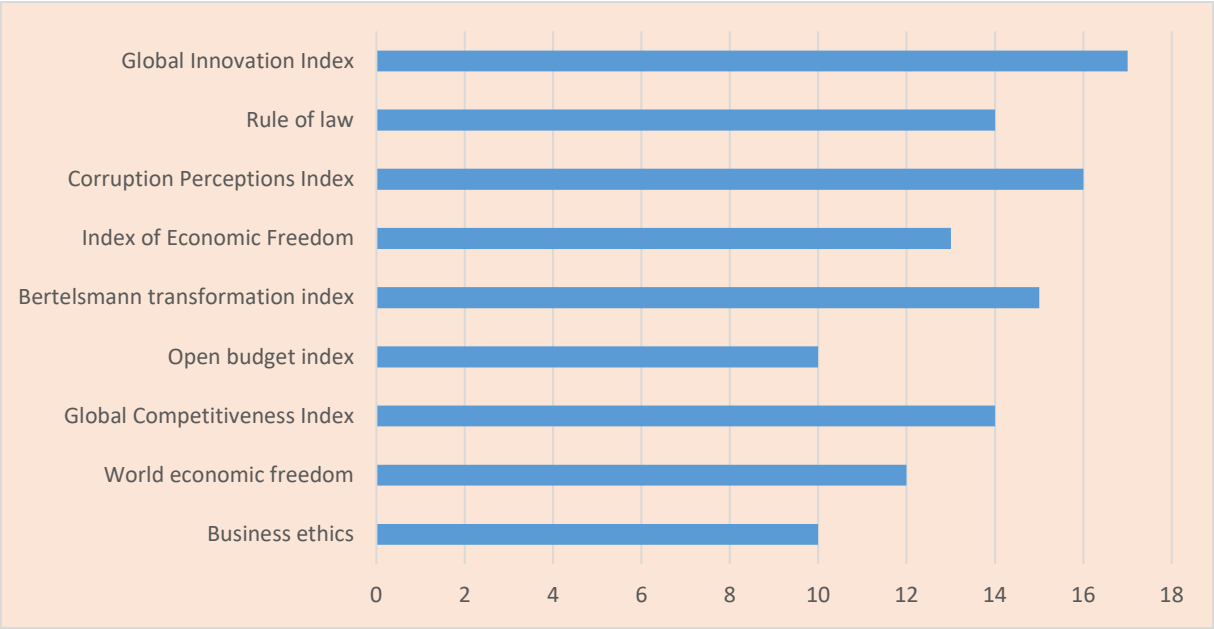
In 2020, due to the pandemic, the Economic Forum did not publish a new rating. Accordingly, Georgia remained in 74th place (among 141 countries). According to the 2019 report, according to the Global Competitiveness Index, Georgia's position worsened by eight levels compared to last year. According to the 2019 report published by the World Economic Forum, Georgia ranks 74th among 141 countries. In the 2018 report, Georgia was in the 66th position. [10]

World Bank (WB) "Human Capital Index" In 2020, Georgia ranked 85th among 174 countries in the World Bank's Human Capital Index with a score of 0.57. [16]
Georgia is in 74th place among 141 countries with 60.6 points (maximum 100 points) in the rating.
During the years 2010-2021, the dynamics and analysis of the financing of the two main components of human capital - education (knowledge capital) and health capital are interesting.

Methodology

For the research, we used the regression model, which is a very common method for reflecting the dependence of data on each other. Building a model allows us to make predictions and plans based on the results. Also, based on the regression analysis, management decisions can be made, which will be aimed at identifying the priority cause affecting the result.
The existing system of higher education financing cannot ensure the continuous institutional development of higher education institutions.[1] The main burden falls on households, which leads to the problem of access to higher education, especially for socially vulnerable groups. [2]
Science is an integral part of the sphere of education. The existing model of science funding does not create opportunities for the implementation of long-term research priorities, formation of clusters, strengthening and permanent institutional development.

Figure 1. 2021 report published by the World Economic Forum [10]
Georgia's positions in the world rankings



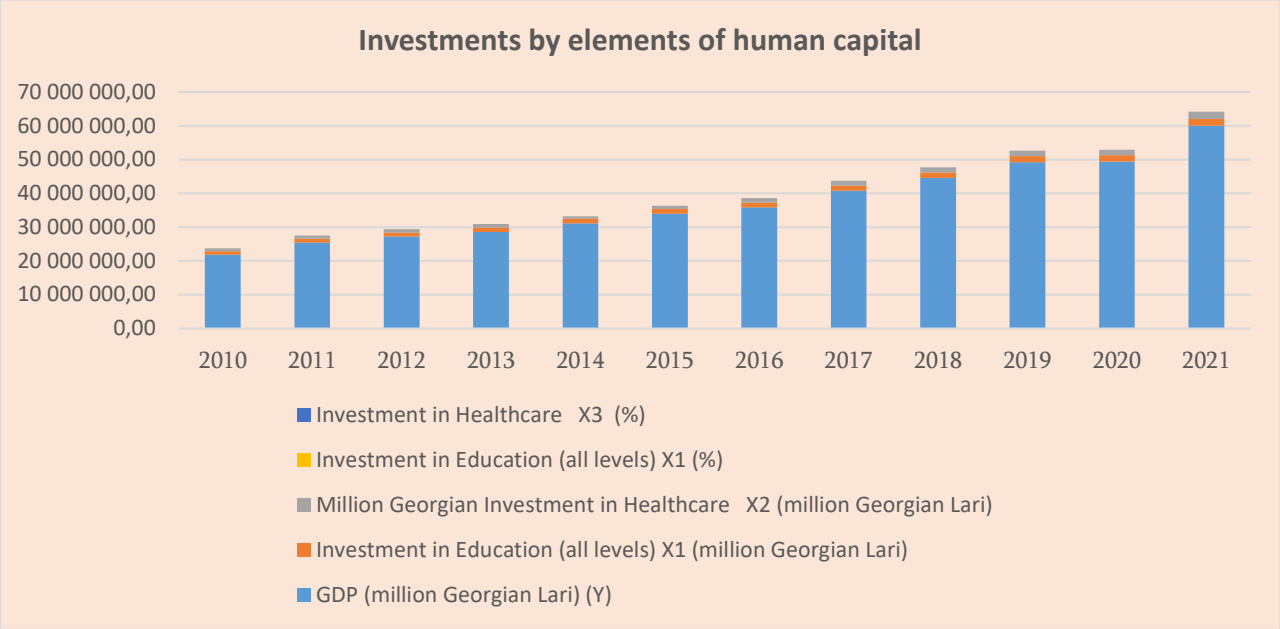
For this, let's analyze the level of investment in human capital with the following elements: health capital (state spending on healthcare, all levels) and education capital (state spending on education, all levels), the years 2010-2021 are taken for the research, the costs are given as the ratio of investments in the relevant sphere to GDP, by percent.

According to the data of 2010-2021, we can see that the dynamics of the GDP is increasing, logically, the investments in the fields of healthcare and education are increasing. We received forecast data according to the research conducted by us in 2016 and in accordance with the data obtained on the basis of the created regression model.

Table 1. Investments by elements of human capital [14]

Years	GDP (million Georgian Lari) (Y)	Investment in Education (all levels) X1 (million Georgian Lari)	Million Georgian Investment in Healthcare X2 (million Georgian Lari)	Investment in Education (all levels) X1 (%)	Investment in Healthcare X3 (%)
2010	21,822,400.00	1,057,000.00	850,100.00	4.84%	3.90%
2011	25,479,000.00	1,134,500.00	942,300.00	4.45%	3.70%
2012	27,227,300.00	1,188,900.00	1,013,200.00	4.37%	3.72%
2013	28,593,400.00	1,332,500.00	1,013,000.20	4.66%	3.54%
2014	31,124,000.00	1,434,500.00	649,160.00	4.61%	2.09%
2015	33,935,000.00	1,459,100.00	910,940.00	4.30%	2.68%
2016	35,836,000.00	1,459,500.00	1,349,100.00	4.07%	3.76%
2017	40,762,000.00	1,523,300.00	1,460,600.00	3.74%	3.58%
2018	44,599,000.00	1,622,100.00	1,497,500.00	3.64%	3.36%
2019	49,263,000.00	1,764,800.00	1,641,900.00	3.58%	3.33%
2020	49,407,000.00	1,847,121.00	1,643,599.00	3.74%	3.33%
2021	60,000,000.00	2,017,922.00	2,125,042.00	3.36%	3.54%

Figure 2. Investments by elements of human capital



In our example, we consider the investments made by the state in the elements affecting the development of human capital (healthcare and education). The inclusion of each variable used in the model needs a theoretical justification.

Table 2. Data obtained on the basis of the regression model created in 2016 [15]

Predictive					
Years	GDP (million Georgian Lari) (Y)	Investment in Education (all levels) X1 (million Georgian Lari)	Investment in Healthcare X3 (million Georgian Lari)	Investment in Education (all levels) X1 (%)	Investment in Healthcare X3 (%)
2016	33,900,000.00	993,086.40	1,660,858.20	2.93%	4.90%
2017	34,917,000.00	1,145,658.50	1,725,082.40	3.28%	4.94%
2018	35,964,510.00	1,322,018.70	1,791,786.90	3.68%	4.98%
2019	37,043,445.30	1,525,960.79	1,861,095.72	4.12%	5.02%
2020	38,154,748.66	1,761,904.01	1,933,139.06	4.62%	5.07%

2021	40,444,033.58	2,035,000.98	2,008,053.66	5.03%	4.97%
2022	41,657,354.59	2,329,236.91	2,085,983.09	5.59%	5.01%
2023	44,156,795.86	2,667,057.51	2,167,078.07	6.04%	4.91%
2024	45,481,499.74	3,054,972.96	2,251,496.89	6.72%	4.95%
2025	48,210,389.72	3,500,468.57	2,339,405.75	7.26%	4.85%
2026	49,656,701.41	3,675,492.00	2,430,979.14	7.40%	4.90%
2027	52,636,103.50	3,859,266.60	2,526,400.28	7.33%	4.80%
2028	54,215,186.60	4,052,229.93	2,625,861.58	7.47%	4.84%
2029	57,468,097.80	4,254,841.42	2,729,565.03	7.40%	4.75%
2030	59,192,140.73	4,467,583.49	2,837,722.74	7.55%	4.79%

The results of the regression model proved that: the actual investments made by the state in 2016-2021 and, accordingly, the dynamics are sufficient, as indicated by the coefficient of determination R2 (in the case of a reliable model, it should be 0.8-1): in the case of investment in education - R2 = 0, 59. On health care - R2 = 0.67, on social care R2 = 0.14, on cultural events R2 =0.58, on scientific researches, innovations, inventions R2 = 0.52.

In 2016, the analysis of the forecast model prepared by us showed us that the economic progress of the country depends on the investments made in human capital elements, as a result of which growth (determination coefficient R2 = 0.8-1) it is possible to make a forecast of the growth rate and development.

It should be noted here that according to the results of PISA, Georgia ranks 70th out of 78 countries according to the total score of reading comprehension, mathematics and science. And the World Bank's "Human Capital Index" shows that the expected productivity of Georgian schoolchildren is the lowest compared to the region and developed countries. [16]

Results

As for the problems and challenges of the healthcare system, according to forecast data, in relation to the gross domestic product, 4.98% should have been implemented in healthcare in 2016-2021, but 3.94% was actually implemented, which is a significantly lower rate.

The new coronavirus has radically transformed the perceptions of people, society and state institutions, approaches to the importance of health policy. The pandemic has brought the issues of healthcare and its effective management back into the public and political sphere with a new intensity. In parallel with this and in response to the challenges, various types of reform were announced at the state level, which include strengthening primary care, increasing funding for the medical field, and upgrading infrastructure. The 21st century is the century of global epidemics. The modern globalized world has brought a lot of good things, human migration and travel have increased. If in the past, epidemics involved only individual countries, in the modern, globalized world, the challenges posed by infectious, communicable diseases transcend national borders. Given that the fight against infectious diseases is primarily a public good rather than a

private, individual service, the era of infectious disease epidemics increases the regulatory role of the state in the health sector, the importance of cooperation between the state and the private sector, and the priority of public health. The best way to solve these problems is transnational actions and solutions based on coordinated cooperation between different countries of the world. For the development of healthcare in Georgia, this is necessary to:

1. Development of existing human resources in the healthcare system, taking into account the challenges of pandemics;
2. Transfer of international experience in health system management and monitoring;
3. Equipping and improving the physical infrastructure of primary care and modern innovative medical equipment;
4. Development/improvement of the information system of the healthcare sphere.

As for the field of education, according to forecast data, 3.94% of the GDP should have been spent on education in 2016-2021, but 3.69% was actually spent.

If we compare the forecast data obtained for 2016-2021 with the real data available today, the following conclusions can be drawn:

1. To analyze the investments made in the field of education, the forecast and actual data are not significantly different from each other, but the actual result differs from the expected result. The quality of education has not improved in the education system. And in 2020, as a result of the pandemic, the introduced online learning mode has definitely worsened the quality of education at all levels;
2. As we mentioned, the financing of education and healthcare systems increases every year, and the mentioned indicators of the state budget have increased this year as well. But, despite the trend of increasing investments from the budget in the education and healthcare systems, we do not receive the appropriate quality of education and quality services of the healthcare system in these systems. Therefore, Georgia's place in the international rankings is relevant;
3. According to the 2019-2021 international rankings, Georgia's slow positional decline and the high regression experienced in some areas threaten both the country's international investment image and the country's long-term economic development perspective. According to international assessments, the main challenge for Georgia is less stability of the macroeconomic environment, high inflation in the country, low level of rule of law, lack of a fair court, high level of corruption, infrastructural challenges and low indicators of innovative development;
4. Since the effective work of the education and healthcare systems, the country's innovative development and high ranking in international indices are determined by the high level of human capital, investments in the elements of human capital development, in particular in the fields of healthcare and education, should be a priority for the country.

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