



ANALYSIS OF HIGHER EDUCATION DEVELOPMENT INDICATORS IN THE REPUBLIC OF UZBEKISTAN

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ABSTRACT

This article argues that as higher education institutions seek to incorporate sustainable development principles into their education systems, it becomes increasingly important to identify indicators that can measure their institutional contributions in a meaningful and internationally comparable manner. Examines the use of performance indicators, quality assessment and influencing factors in higher education institutions. Scientific research into improving the efficiency of the educational process using economic and statistical methods, econometric modeling of the process and the development of multifactor forecasting options, as well as multifactor econometric models for assessing factors influencing the increase in the efficiency of the educational process in the higher education system. the system has been developed.

Key words: higher education system, education, performance indicators, education for sustainable development, indicators, determinant, indicators of development of higher education, econometric modeling, assessment, model, forecast.

INTRODUCTION

Increasing the scope and efficiency of higher education is one of the urgent issues of our day to ensure the socio-economic development of our country and the stable living conditions of the population. At the initiative of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev implemented fundamental and meaningful reforms in the education system that should meet the requirements of the global education process. The legal framework created in the field of radical change of the education system was defined as a priority direction for the development of human capital, increasing the share of investments directed to the education of a competent generation, which is the main force in the implementation of democratic reforms in our country. The research shows that many studies up to now have been devoted to the calculation of "cost", that is, to the quantitative or monetary expression of the participation of higher education in the development of the individual and the state as a whole.

ANALYSIS OF LITERATURE ON THE TOPIC

Well-known foreign scientists, including G.S. Becker, Capital. A Human [1], N.V. Varghese, L. Buchert [2], O.O. Gokun [3], P. Klaus [4], J.Z. Sonmez [5], O. Shlikova [6] and others conducted theoretical research.

O.L. Chulanova [7], L.I. Galkiv [8], Ye. N. Jilsov [9], A.I. Kovalev [10], G.V. Prisenko [11], O. Abashkina [12], D.S. Cherneyko [13], M.V. Korotkaya, Ye.D. Popova, G.K. It is possible to learn from the scientific works of Selevko[14].

A. Vakhobov, E. Imamov [15], Z.B. from the local economic scientists on the problems of increasing the efficiency of education with the help of services and innovative technologies in the

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educational system. Koziyev [16], R.J. Ishmuhamedov [17], Kh. Abdukarimov [18], N. Zaripova [19], A.Kh. Eshboev [20], A.S. Kucharov [21], B.D. Kalmetov [22], M. Tojiev, B. Ziyomukhamedov, B.Sh. Researched in the scientific works of Usmanov[23] and others.

RESEARCH METHODOLOGY

Scientific approach, comparative analysis, analysis and synthesis, sampling, economic-statistical analysis, econometric modeling and forecasting methods using the specified model were used in the research process.

ANALYSIS AND RESULTS

The global education services market was valued at \$590.74 billion in 2022, from \$2,882.52 billion in 2021, and is expected to reach \$613.88 billion in 2023, at a compound annual growth rate (CAGR) of 3, is 9%. The educational buildings market is expected to reach \$679.80 billion in 2027 at a CAGR of 2.6% [24]. From these statistics, it can be seen that the demand for educational services is increasing worldwide. This, in turn, requires an in-depth analysis of current and future scenarios for the study of the educational services market.

In addition, global education spending grew by 2.6 percent annually in real terms from 2009 to 2019[25]. This growth rate is slower than global economic growth and hides two different trends. High-income countries, which account for about two-thirds of global education expenditure, are the only 5. Global education expenditure refers to the expenditure on education services by governments, households and donors and follows the definitions of the UNESCO Institute for Statistics.

According to the results of the conducted analysis, during the last 10 years, their costs increased slightly. The trend of "more expensive" education costs is more noticeable in countries with a low level of income - 10.9% of economic income, average level - 10.7%, high level - 7.4%. The study of the impact of education at the macro level showed that, according to experts' calculations, the increase in the level of knowledge and education in the most developed countries can lead to an increase in national income of up to 60%. That is, education for individuals helps to reduce employment, income, health and poverty. For society, it stimulates long-term economic growth, encourages innovation, strengthens institutions and promotes social cohesion[26].

From the results of this research, it can be seen that in addition to the social effect in the form of increasing the general education level of the population, education and higher education also have an economic effect on the development of the state in the form of an increase in the gross domestic product. Given that education is a special type of economic activity, the assessment of its effectiveness in comparison with other sectors and the optimal ratio of resources involved in the organization of the educational process acquire personal relevance.

In the world economy, at any point of time, in the development of the regional system, reforming the education system, defining its perspective and ensuring its competitiveness remain an urgent issue. Also, the main providers of educational services in the higher education system are state and non-state higher education institutions that create an offer in the education market. People who receive education and pay for education services create demand. The government remains the main element of this chain[27]. Educational institutions around the world are adopting educational marketing services. This is because educational institutions are facing challenges in attracting and recruiting international students, along with quality improvement initiatives. Most institutions have

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budget constraints that limit the choice of technical solutions[28]. Therefore, it is necessary to study the factors affecting the development of the educational market, to foresee the processes that cause problems, to develop models regulated by appropriate management decisions aimed at increasing the efficiency of educational processes in the higher education system.

Increasing the scope and efficiency of higher education is one of the urgent issues of our day to ensure the socio-economic development of our country and the stable living conditions of the population. The research shows that many studies up to now have been devoted to the calculation of "cost", that is, to the quantitative or monetary expression of the participation of higher education in the development of the individual and the state as a whole. In terms of micro-level or individual benefits to learners, analysis shows that each additional year of academic education increases individual learning gains by 10%.

We analyze the dynamics of educational efficiency using the data of the State Statistics Committee of the Republic of Uzbekistan for the period of 2010-2022. we draw a conclusion about

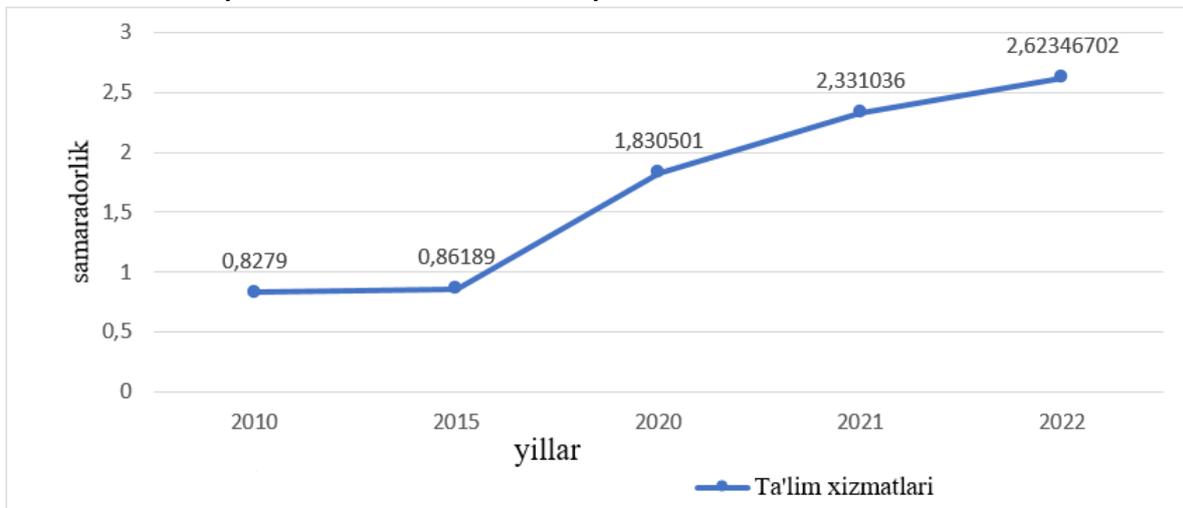


Fig 1. Dynamics of educational efficiency during 2010-2022

In particular, in 2015-2020, there was a sharp increase in the indicator by 2.2 times, in 2020-2021, it increased to 0.500535, and in the next three years until 2022, it increased to 0.792966. sd. It is worth noting that the coefficient of educational efficiency remained almost unchanged for 7 years, averaging 0.84286 between 2010 and 2016, and increased from 0.87049 in 2016 to 1.752974 in 2022. reached 2.62346702. That is, education is an important factor in the formation of the gross domestic product, and the efficiency indicators have one of the highest indicators compared to some types of economic activity.

According to the results of the analysis, efficiency indicators are a component of the higher education system. It serves the development of scientific and technical development by training highly qualified specialists. The effectiveness of higher education is measured externally (return of human capital) and internally (as a type of economic activity). Internal efficiency criteria are efficiency (the rate of growth of the population's level of education) and optimality (a rational ratio of resources involved in the type of economic activity).

In this regard, in order to create a healthy competitive environment among higher education institutions of the Republic of Uzbekistan, to raise the quality of education to a higher level and to comprehensively support their entry into international ratings, the National rating of higher education institutions we can quote the results on This has been carried out by the State Inspectorate for Quality Control of Education every year since 2017. Of course, the provision of the rating indicators presented in the table has helped many higher education institutions to activate their activities to achieve high indicators, and this as a result, according to the analysis of the main performance indicators of higher education institutions: the scientific potential increased by an average of 6.1% in the last five years: 2017 – 30.3%, 2018 – 34.0%, 2019 – 34.1%; 2020 – 34.5%; 2021 - reached 36.4%. The activity of commercialization of the results of education, science, innovation and scientific research has been revived and the income of higher education institutions from scientific research activity has reached 49.7 billion in 2017. increased by 5 times from soums to 236.1 billion in 2021. reached soums (Table 2).

Table 2

Rating results of higher educational institutions					
	The name of the higher education institution	As a percentage of the total score	IF* (40%)	O'S* (30%)	TB* (30%)
1	National University of Uzbekistan	69.02	31.38	16.54	21.1
2	Tashkent Institute of Irrigation and Agricultural Mechanization Engineers	68.96	24.12	18.5	26.34
3	Samarkand State University	52.89	19.07	8.65	25.18
4	Tashkent University of Information Technologies	52.68	16.31	11.64	24.74
5	Tashkent Institute of Railway Transport Engineers	51.63	12.01	15.04	24.58
6	Tashkent State Agrarian University	51.58	15.85	11.74	23.98
7	Tashkent State University of Economics	51.57	17.93	11.24	22.41
8	Tashkent State Dental Institute	50.6	17.07	13.03	20.49
9	Tashkent Financial Institute	50.43	14.22	14.8	21.41
10	Tashkent State Institute of Oriental Studies	49.11	13.57	16.23	19.3

Of course, such positive growth indicators also affect the place of our national higher education institutions in the international ranking. Their results are getting better every year. In particular, the National University of Uzbekistan was ranked among the top 500 universities in the world according to the results achieved in the field of "Mathematics" by QS. However, it should be noted that the results of the National rating of these higher education institutions cannot fully reflect the indicator of economic efficiency of higher education institutions.

In the world economy, at any point of time, in the development of the regional system, reforming the education system, defining its perspective and ensuring its competitiveness remain an urgent issue.

Also, the main providers of educational services in the higher education system are state and non-state higher education institutions that create an offer in the education market. People who receive education and pay for education services create demand. The government remains the main element of this chain. Educational institutions around the world are adopting educational marketing services.

This is because educational institutions are facing challenges in attracting and recruiting international students, along with quality improvement initiatives. Most institutions have budget constraints that limit their choice of technical solutions. Therefore, it is necessary to study the factors affecting the development of the educational market, to foresee the processes that cause problems, to develop models regulated by appropriate management decisions aimed at increasing the efficiency of educational processes in the higher education system. In this sense, we evaluate the effectiveness of the higher education system in the research work based on the socio-economic standard method. Its essence is to compare the rates of change of the indicators describing the development of the higher education system and their interdependence. Accordingly, the higher education system develops effectively in the following cases:

- if the growth rate of the number of higher education institutions is not lower than the growth rate of the number of students;
- the growth rate of the number of teachers should not be lower than the growth rate of the number of higher education institutions at the same time as their qualification is improved;
- the growth rate of aggregate budget expenditures for higher education should not lag behind the growth rate of other components of the education system, which can be represented by inequality:

$$OT_{bx} \geq OT_{xs} \geq OT_{ms} \leq OT_{ts} \quad (1)$$

bx – total budget expenses for higher education;

xs – the number of full-time employees of the higher education system;

ms - the number of higher education institutions;

ts - the number of students of higher educational institutions. We analyze the development indicators of higher education from the point of view of fulfilling the conditions of inequality (Table 3).

Table 3

Indicators of higher education development in the Republic of Uzbekistan

Years	Budget expenses for higher education	Full-time employees of higher education institution soni	Number of higher education institutions	Number of students of higher education institutions
	Bln. soum.	unity	unity	unity
2010	5539,4	101,2	23021	274520
2011	6447,7	117,8	22394	253026
2012	8356,4	131,2	22769	258343

2013	9265,1	118,1	≥	23148	100,9	=	66	100,9	≥	259290	99,0
2014	10173,8	121,0	≥	23532	101,4	=	68	101,4	≥	261332	98,9
2015	12162,2	122,3	≥	24909	99,6	≥	69	86,7	≤	264291	86,9
2016	13831,7	107,5	≥	23961	85,8	≤	70	102,5	≥	268281	98,9
2017	15979,6	126,3	≥	25107	103,3	=	72	103,3	≤	297689	110,3
2018	20721,1	147,4	≥	26664	104,3	≤	98	137,6	≥	360204	113,7
2019	33536,1	178,4	≥	30559	110,9	≤	119	120,5	≥	440991	115,6
2020	29961,1	101,8	≥	32070	107,8	≥	127	101,7	≤	571512	120,7
2021	39640,8	153,6	≥	37364	115,2	≥	154	123,9	≥	808439	100,6
The number of mismatches	0				7					8	

The analysis of the indicators of the development of higher education in the Republic of Uzbekistan showed that during the years 2010-2021, almost all indicators, except for the financing of higher education, showed an uneven growth rate. In the analyzed period, satisfaction of the above inequality was observed only three times in 2012, 2015 and 2020. However, the growth rate of higher education spending has always been higher than the growth rate of the number of full-time employees of higher education institutions. In 2018-2019, the growth rate of the number of educational institutions was lower than the growth rate of the number of teachers, while in 2020-2021, the opposite situation was observed. This is due to the constant decrease in the number of full-time teachers in favor of part-time teachers.

CONCLUSIONS AND SUGGESTIONS

According to the goals and development strategies of increasing the effectiveness of educational processes in the higher education system, the main management methods are a set of techniques and procedures for the preparation and approval, organization, and control of management decisions. In the traditional sense, management of the educational process is carried out at the state level. However, in the conditions of today's globalization, the higher education system cannot fully rely on the support of the state, because it is forced to be more autonomous in order to prevent crises and develop practices to increase competitiveness in constantly changing conditions.

In short, the socio-economic efficiency of higher education as a type of economic activity is evaluated in the presented research. The conducted analyzes showed that education as a type of economic activity has a high efficiency index compared to other types of economic activity, ranging from 67.1 percent to 74.5 percent in 2010-2021. Analysis of the effectiveness of the higher education system based on the socio-economic normative method showed that there are imbalances in the ratio of resources to the amount of funding, the number of teachers, the number of higher education institutions and the number of students. All indicators of the development of higher education have a negative growth rate. The greatest impact on the change of the socio-economic norm of the higher education system falls on one student.

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