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FACTORS FOR INCREASING THE EFFICIENCY OF EDUCATIONAL SERVICES AND ENTREPRENEURIAL ACTIVITIES AND METHODOLOGICAL FOUNDATIONS OF THEIR CLASSIFICATION

Abstract: This article analyzes the factors that contribute to improving the efficiency of educational services and entrepreneurial activity and their methodological foundations. Economic, demographic and socio-economic factors affecting the development of the higher education system are considered, and their impact on the quality of education and the labor market is assessed. Also, the relationship between education and the economy is analyzed using a cognitive modeling approach, and strategies for adapting higher education institutions to the external environment are considered. The article analyzes the relationship between the quality of education, public investments and the labor market, and puts forward proposals for the modernization of the higher education system.

Keywords: Educational service, entrepreneurial activity, economic efficiency, higher education system, demographic factors, socio-economic factors, macro environment, labor market, inflation rate, economic growth, cognitive model, personnel training, government spending, external environmental factors, development of higher education institution, supply and demand, investments, modeling, unemployment, quality of education.

Educational institutions, including higher education institutions, have broader, more solid, and stronger feedback loops with their macro environment than other entities of the socio-economic system, as they form several generations of specialists, and these specialists begin to determine the changes in this environment during their future activities. In short, educational activity, unlike other areas, is subject to external influences from economic, social, political and other components of the macro environment. In this regard, the task of analyzing the state of interaction between the socio-economic system of the state and the higher education system as a subject of the economy arises. The purpose of such an analysis is to make informed and effective management decisions and model the consequences of the decisions made. We consider it appropriate to distinguish and group the external environmental factors that affect the development of the higher education system into the following components: economic factors; demographic factors and socio-economic factors.

Socioeconomic indicators reflect the needs of the socio-economic system of the state and the relationship between the population's opportunities and preferences for obtaining education of a certain level and type.

Economic factors reflect the economy's need for qualified personnel. To determine the laws and characteristics of complex interconnected systems such as economics and education, it is necessary not only to classify factors and organize them according to their content, but also to study the degree and quantity of their influence. The economic interests of the higher education system in market relations depend to a significant extent on the intensity of the influence of external factors, therefore, in solving its management tasks, modeling based on economic criteria forms the methodological basis

of the decision-making support system.

The proposed cognitive statistical structuring method for analyzing the interactions of systems combines elements of perceptual-visual (cognitive map), formal (theoretical-blind learning model), and statistical (correlation-regression analysis) modeling. This method is distinguished by its dependence on the technology of analysis and allows taking into account the influence of social, economic, demographic factors on the ability of students to pay for educational services, as well as calculating the volume of social needs for higher education.

The cognitive model (Figure 2.1) provides a descriptive structure of factors, establishes the role of influence, and underlies the content of the economic analysis. Using the developed cognitive model, an analysis of the characteristics of the interaction between the educational system and the socio-economic environment of the network was carried out in order to identify the patterns of development of the educational system. A list of factors important for management was compiled, the influence of factors on the quality of the subject of economics on the quality of higher education was determined. As elements of the cognitive model, situation analysis and factors important for management are selected, cause-effect relationships are established, and an expert assessment of the influence is carried out.

However, only the cognitive model could not analyze the quantitative assessment of the laws of socio-economic processes of the relationship between the higher education system and economic sectors. To solve this problem, a theoretical network model was proposed that forms the personal networks of the analyzed indicators and establishes the procedure for their calculation, that is, provides the basis for the quantitative description of the laws. We present their general state in the table below (Figure 2.1).

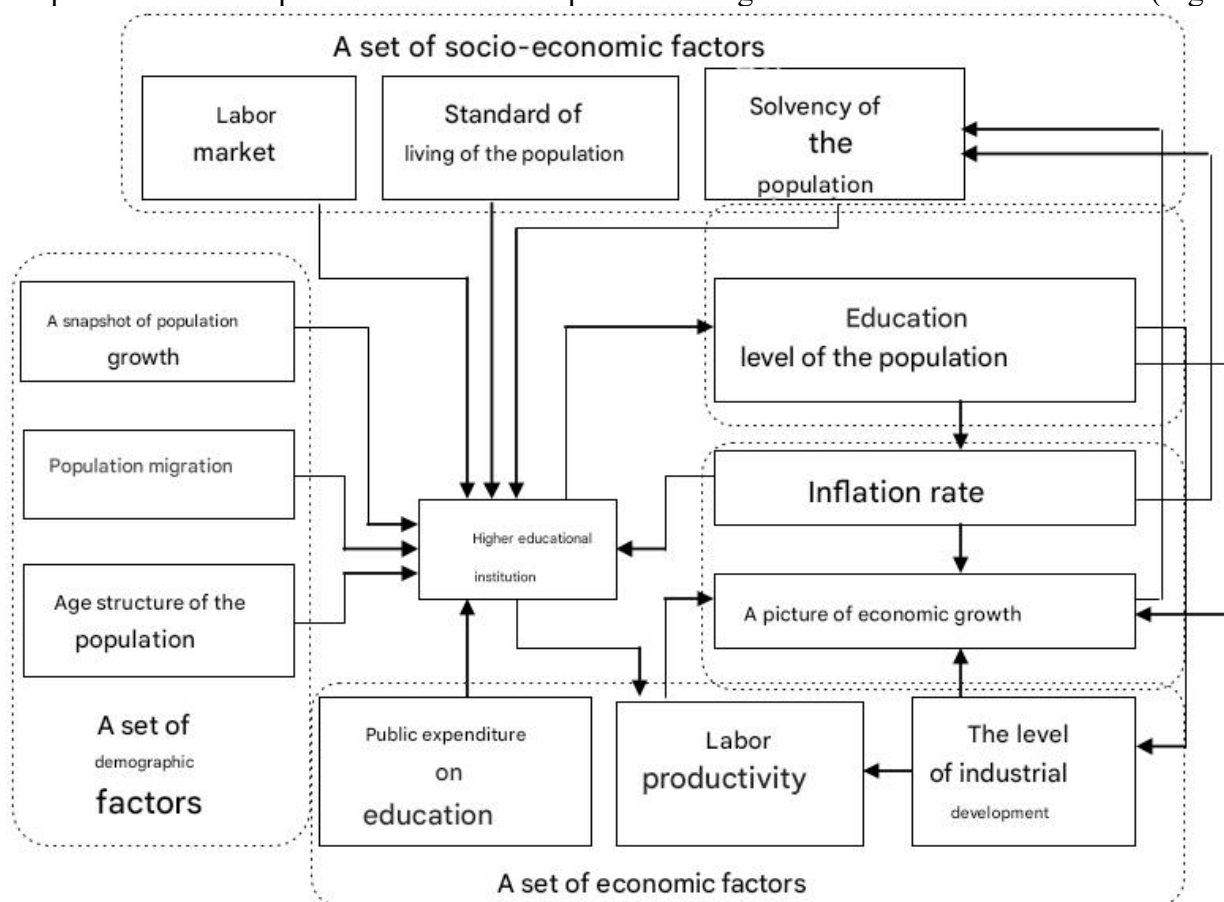


Figure 2.1. Cognitive model of the impact of the socio-economic environment on the development of higher education¹

In this case, within the framework of known statistical indicators, those that have a significant impact on the development of higher education are highlighted in a comprehensive manner. When describing economic factors, indicators reflecting the number of qualified personnel included in the needs of the economy to ensure economic growth are taken as a basis.

Table 2.1

Analysis of the content of the theoretical network model changes under the influence of external environmental factors²

No.	Environmental factor	Index	Brief description of the indicator
Demographics of the country $\{D_i\}, i = 1, 3; D = \{D_1, D_2, D_3\}$			
1.	Population	Population Survey (D_1)	Describes the demographic situation in the republic.
2.	Population migration	Migration growth rate (population growth) (D_2)	The state of the republic and the neighbor d a v l a t l a r for attractiveness evaluation possible Give it .
3.	The population oh sh composition	16 of the cases and and small clay pots s o n i (D_3)	Education services for the rate of maybe you can do it he/she / it (desiqb o l for).
The network of socio-economic factors $\{S_i\}, q = 1.5; S = \{S_1, S_2, S_3, S_4, S_5\}$			
1.	Population growth level	Standard of living of the population (S_1)	Case A marriage degree t a vsifl a shg a imk o n u a r a t a d i .
2.	Level of awareness of the population	16 of the cases of the savior of the degree of information (S_2)	Education system of efficiency indirect indicator It feels like .
3.	The population's wealth ability	The people of the village education services t o' l o v i for x a r a j a t l a r i , iste ' m o l x a r a j a t l a r i g a n i s b a t a n % l a r d a (S_3)	In case of education services t o' l o v i for m o l i u a v i u imk o n i u a t l a r n i Price is the basis for pricing policy .

¹ Kudj S.A., Solovyov I.V., Tsvetkov V.Ya. Cognitive model and method. Kratkiy slovar spravochnik. - MGTU MIREA, 2014. - 95 p. Electronic search. State registration number 0321400338 on January 30, 2014.

² Lapusta M.G. Predprinimatelstvo: uchebnik. -M.: «INFRA-M», 2017. - 384 s.

4.		The growth rate of the number of unemployed (S_4)	Assessing trends in the development of the republic's labor market.
5.	Labor market	Labor market tightening (S_5)	The republican labor in the market status b a h o l a u d i .
The economy is a thousand years old . t o'r l a m i { E_{she is} }, u = 1.5 ; E = { E₁, E₂, E₃, E₄, E₅ }			
1.	Level of industrial development	Industry work to come out economy o di u f a o l i u a t types b o u i c h a index (E_1)	Industry development degree b a h o l a b Give it .
2.	Economic growth photos	UAI growth rate (E_2)	Assessing the pace of economic growth.
3.	Inflation	Inflation rate indicator (E_3)	It reflects the rate of growth of the consumer price index .
4.	Labor productivity	Processing (E_4)	Economy o di u o t d a b a n d Bulgarian one someone's work exit size
5.	Public spending on education	Production volume (E_5)	State to m o n i d a n Investments are made of funds relative share

As a result of the conducted cognitive-structural and statistical analysis, a two-level system of management of the functioning and development of the educational system was formed by organizing the system of branches of the educational system. Having analyzed the influence and significance of indicators that characterize the level of development of the socio-economic system, the development of higher education institutions in the regions can be managed by organizing a system of regional branches based on the economy. When making management decisions on the organization of the activities of the higher education institution, when it is necessary to determine the admission plan, the cost of training, and the costs of ensuring the quality of education on the basis of the contract, taking into account the influence of external environmental factors identified in cognitive modeling makes it possible to increase the economic efficiency of the educational activities of the higher education institution.

Based on the contradictory realities of ensuring the economic interests of higher education, it is necessary to increase the income of the higher education budget, study the market demand for educational services and the trends of the economic interests of higher education.

The educational activity of the state higher education system is developing in a rapidly changing socio-economic environment. The goal of management is to align the economic efficiency of the educational process, which is associated with the level of profitability, with the changing trends of

market demand for educational services by the population and the stringent requirements imposed on the quality of education by the developing economy.

The situational analysis and management of the functioning and development of the higher education system (Figure 2.2) reflects the interrelationships in the system and allows us to take into account the influence of socio-economic environmental factors identified during cognitive-statistical structuring. The fact that applicants have a high level of academic achievement in higher education seriously affects the organization of the educational process, while increasing the costs associated with the recruitment of specialists who are at the required level. Students with an average academic achievement level who are being admitted to the first year can be managed by introducing changes to the admission plan.

Today, the economic development of any country directly depends on the financial capabilities of its citizens. The financial capabilities of citizens determine the scope of a country's development, growth dynamics, and the level of its competitiveness in the world market. Countries with a high level of income (capability: material opportunity) of their citizens can provide quality and demanding educational services due to the availability of personnel with appropriate professional qualifications.

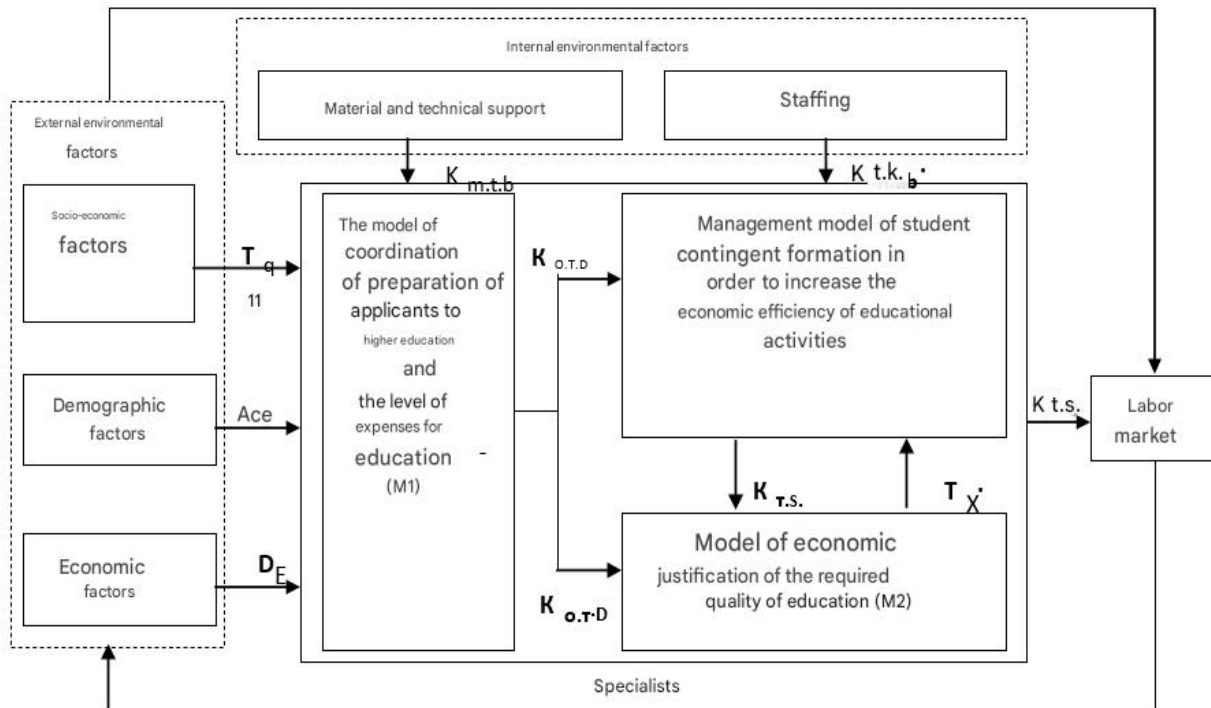


Figure 2.2. Schema of the operational management of higher education activities

Note. The following symbols were used: T_q - the earning capacity of the population; A_s - the number of applicants wishing to enter higher education; D_b - state order for the training of specialists; $K_{m.t.b}$ - material and technical base of the educational institution; $K_{t.k.b.}$ - coefficients for the formation of the student contingent; $K_{o.t.d.}$ - coefficient of the level of students' readiness for higher education, $K_{t.s.}$ - coefficient reflecting the level of education quality; $T_{x'}$ - costs of organizing the educational process.

The problem of increasing citizens' incomes in the economy is constantly linked to the issues of reforming the education sector in the country. When shaping the main directions of reforming

higher education in our republic, it is necessary to pay special attention to the effectiveness of this system. Zero, in practice, the application of the usual criteria (cost minimization or output maximization) in determining the criterion of efficiency in the field of education did not give the expected result. Therefore, we consider the problem from the point of view of the quality of education and its implementation on the basis of free, affordable and equal rights for students.

Organizational factors include trust in the educational system, the equal availability of educational services for all, the intensity (effectiveness) of advertising, and price discounts. If the educational system has a strong trust (image), this indicates that its educational service has strong business characteristics. These characteristics allow consumers to increase the value of the goods and services offered.

In economics, the provision of educational services to members of society is understood as a positive externality. In this case, the providers and consumers of education are people, and its benefits reflect not only the citizens themselves, but also the efficiency of the activities of economic entities, enterprises, and government bodies.

Education can have not only positive externalities, but also negative ones. This hypothesis is that under adverse conditions, the labor market becomes oversaturated with labor resources, that is, the supply exceeds the demand for labor resources, while the number of educated people exceeds the number of specialists needed in the labor market. Also, the prolonged unemployment in the labor market, in which the demand for new specialties is constantly increasing, will require additional costs, as the educational services market will respond more slowly than expected to changes in demand, creating temporary stagnation and bottlenecks. The reasons for the imbalance in the educational services market of Uzbekistan are:

- currently, the labor market requires personnel with secondary vocational education and higher technical knowledge;
- Employers of the republic do not currently have the opportunity to allocate funds for the training of highly qualified personnel, since the state does this for them;
- the weakness of the production base negatively affects the training of specialists and their attitude to their future profession.

Looking at the history of the development of higher education in Uzbekistan, we can see that the development of the educational services market is directly related to changes in the economic and political structure of the country. For example, the transformation of the state structure in the 1990s can be cited as an example. During that period, there was a strong demand for personnel with legal and economic knowledge. This was due to the increase in the number and size of private sector enterprises within all economic entities.

Today, we have a market economy with its own characteristics in the higher education system: the demand for specialists is set by the labor market, but this demand can only be satisfied after 4-6 years, because the temporary barrier to independent employment still exists.

The relationship of education with the labor market: the consumer of higher education institutions provides clearly defined educational services and, being an intermediary in the labor market, provides graduates as the result of their activities. The provision of two types of interrelated goods (Table 2.2):

- educational programs (in the educational services market);
- graduates (in the labor market).

Table 2.2

Two types of higher education activities

Consumers	Goods (applicant)		Developer (performer) higher education institution	Product
Enterprise, organization	Student	High school student	Curriculum	Specialist

At the same time, it can be said that production and the system of vocational education are inextricably linked and inseparable. The development of production must necessarily lead to the development of a system for increasing the professional qualification of qualified personnel.

Today, the level of professional qualifications of citizens offering their labor force cannot fully meet the growing demands of employers. This is due to a number of demographic and socio-economic factors, including the inability of the vocational education system to adapt to the realities of a market economy.

Table 2.4 presents the “Demand forecast for graduates at all levels of higher education.” Based on this need, it is appropriate to implement entrepreneurial activities in the education system. The experts explain that the current solution to the problem of financing higher education is:

- cooperation with the private sector and active participation of business in fundamental and applied research;

- inviting industry experts to the state higher education system for training;

- financing specific research projects through the exchange of patents and copyrights;

- To accelerate the process of implementing R&D (commercialization of innovative developments), the development of collaborative infrastructure and others are being defined.

Table 2.3

Forecast of demand for graduates at all levels of higher education %

No	Names of trades and specialties	Wheels							
		2018	2019	2020	2021	2022	2022	2024	2025
1.	Physics and mathematics	6.43	6.40	6.39	6.36	6.35	6.33	6.32	6.30
2.	Natural sciences	5.43	5.45	5.51	5.54	5.57	5.59	5.62	5.64
3.	Humanities	9.98	9.98	9.97	9.97	9.97	9.97	9.97	9.97
4.	Social	3.14	3.15	3.17	3.18	3.19	3.19	3.21	3.21
5.	Education and pedagogy	11.0	11.0	11.1	11.2	11.2	11.3	11.3	11.4
		2	6	6	2	7	2	7	1
6.	Health care	5.50	5.54	5.60	5.63	5.67	5.70	5.73	5.76
7.	Culture and art	4.28	4.26	4.25	4.23	4.22	4.21	4.19	4.18
8.	Economics and Management	13.1	13.1	13.1	13.1	13.2	13.2	13.2	13.2
		3	7	6	9	2	5	7	9
9.	Information security	4.44	4.35	4.20	4.11	4.02	3.93	3.85	3.78
10.	Service area	2.21	2.19	2.15	2.13	2.11	2.09	2.06	2.05
11.	Agriculture and fisheries	3.52	3.53	3.57	3.58	3.59	3.60	3.62	3.62
12.	Geodesy and land improvement	0.74	0.74	0.74	0.74	0.75	0.75	0.75	0.75
13.	Ge o l o g i u a, f o u d a l i excavations search and	0.65	0.65	0.64	0.64	0.64	0.64	0.64	0.63

	work								
14.	Energy , electrical engineering and mechanical engineering	1.44	1.45	1.46	1.47	1.47	1.47	1.47	1.48
15.	Met a llurgi ua, m a shin a s o zlik and metal rework	3.49	3.52	3.56	3.58	3.60	3.62	3.64	3.66
16.	Air and space rocket technology	1.59	1.61	1.64	1.66	1.67	1.69	1.70	1.72
17.	Weapons and weapons systems	0.20	0.20	0.21	0.21	0.21	0.21	0.21	0.21
18.	Marine equipment	0.50	0.50	0.51	0.52	0.53	0.53	0.54	0.55
19.	Means of transport	1.01	1.02	1.03	1.03	1.04	1.04	1.05	1.05
20.	Construction and technology of the U s kuna	0.47	0.47	0.47	0.47	0.46	0.46	0.46	0.46
21.	Electrical engineering, radio engineering and communications	1.90	1.89	1.89	1.89	1.88	1.88	1.87	1.87
22.	Automation and management	2.25	2.23	2.21	2.19	2.17	2.16	2.14	2.13
23.	Information and computing technology	7.55	7.48	7.36	7.29	7.22	7.15	7.08	7.02
24.	Biotechnology and chemical engineering	1.11	1.12	1.13	1.14	1.15	1.15	1.16	1.16
25.	Oh my god resources rework and work hard release	0.95	0.95	0.97	0.97	0.97	0.98	0.98	0.98
26.	Consumption products and goods technology	1.62	1.63	1.64	1.65	1.66	1.68	1.69	1.70
27.	Construction and architecture	3.97	3.98	3.98	3.98	3.99	3.99	3.98	3.98
28.	A tr o f - environment him oh my and the nature of life safety	1.45	1.45	1.44	1.44	1.44	1.44	1.43	1.43

In our opinion, developing relations between higher education institutions and business partners requires taking into account mutually beneficial partnerships. There is entrepreneurship in higher education, and it is required that higher education institutions pay close attention to cooperation in the field of scientific research, innovation, and development, in addition to the implementation of daily plans and analysis of market demands, and that they fully adapt their educational and scientific programs to the needs of the labor market.

It is also necessary to modernize higher education, establish a new type of cooperation between the state and higher education institutions, namely, the state must fully realize its responsibility for the purposeful use of its labor, material and financial resources for the development of the personnel training system in order to identify strategic directions for the development of higher education.

Based on the above, directions for modeling the educational services market in Uzbekistan based on international experience in shaping a model of higher education in the interests of the development of higher education in science and technology are proposed.