



Methodology for Assessing the Innovative Activity of Higher Education Institutions

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ABSTRACT

This article discusses the mechanism that developed by the authors for the interaction of technical universities, economic universities with enterprises in the real sector of the economy with the participation of private investors, tax, financial and legislative support from the state on the issue of production and transfer of high technologies and training for innovative activities.

Keywords:

Educational services, mechanism, evaluation, higher education system, innovative activity, competitiveness

Introduction

Today, increasing the social and economic efficiency of the development of the higher education system depends, on the one hand, on the methods of managing this system that are widely used in international experience, and on the other hand, it is necessary to change the conjuncture of the market of educational services and provide higher education institutions with qualified personnel with high scientific potential.

Today, at all stages of socio-economic development, the main goal of human development is to increase the intellectual potential of the society, the well-being of the population, and to create a socio-economic, cultural and ecological environment that provides the opportunity for sustainable development.

In the concept of human development, education is the main component and plays a key role in solving important issues of society.

At various stages of socio-economic development, high development of science and education were considered an important

factors and driving force of socio-economic and technical-technological development. Therefore, it is particular importance to research the methodology of evaluation of innovative activity in higher education institutions.

Literature Review

In the concept of human development, education is considered one of the main components, and it also plays a key role in solving important problems of society. High level development of education and science in human civilization is considered an important driving force of social, technical and economic development. Based on the classification of commodity markets, the market of educational services, in turn, is a component of the market of morally produced goods as a type of commodity market. Based on the essence of the commodity market, this market manifests the system of economic relations.

In the works of Yu.A. Shevchenko from the CIS, the formation of the price in higher education institutions and its marketing

strategy, the general algorithm for setting the price for educational services, the cost method for determining the price of paid educational services, the financing of higher education institutions, the stages of setting the price for educational services, setting the price in state higher education institutions issues such as policy objectives are explored.

Also, in the work of V.S. Bajenova, the implementation of marketing research in the higher education system, the matching of demand and supply for educational services, the regulation of the employment of graduates, the main directions of the policy of the implementation of continuous education in the conditions of the transformation of the economy, the mechanisms of the regulation of the employment of graduates, in higher educational institutions researches related to the process of diversification of financial resources, innovative development of the market of educational services were carried out.

In M.A. Lukashenko's work, the role of higher education institutions in the market of educational services, the management system of higher education institutions, the formation of demand and supply in educational services, the interdependence of the labor market and the market of educational services, the process of employment of graduates, the goals and objectives of the higher education development policy, higher methods of evaluating the effectiveness of educational services in the educational system have been researched.

The work of the Uzbek scientist G.Akhunova researches the problems of marketing of educational services in Uzbekistan, in which the characteristics of the development of the market of educational services, the essence and content of the concept of educational services, the characteristics of the formation of the market of educational services and the labor market, conducting marketing research in the market of educational services, the marketing strategy of higher education institutions, issues of development, management and marketing of educational services and specialist labor market in our country are covered.

Research Methodology

In the process of research, a dialectical and systematic approach to the study of economic systems and ratios for the evaluation of innovative activity in higher education institutions, comprehensive evaluation, comparative analysis, statistical and dynamic approach and grouping methods were used, and the level of competitiveness in the market of educational services was evaluated

Analysis And Results

The positive changes taking place in the Republic of Uzbekistan and the socio-economic reforms being carried out make it necessary to create a higher education system that allows for the reconstruction of society and sustainable development in the future. As a result of the reforms implemented in the development of the education system of our republic, the expected duration of education was 13.7 years in the first years of independence, and this indicator was extended to 21 years by 2020. Educational services define a person's place in society and form it as a member with intellectual potential.

In developed countries, 60% of national income growth is determined by the growth of education and knowledge in society. Economically, investments in education pay off in a very short period of time, and experts estimate that \$1 spent on education provides \$3-6 in return. In addition, according to some estimates, it is known that a 1% increase in education costs leads to an increase in the country's GDP by 0.35%, or an increase in the duration of education by 1 year in developed countries leads to an increase in GDP by 5-15%.

The experience of developed countries shows that in order to ensure sustainable economic growth, 40-50% of the population should have a higher education, and in the knowledge economy, the contribution of the highly educated reaches 60%.

As stated in Article 4 of the Law of the Republic of Uzbekistan "On Education": gender, language, age, race, nationality, faith, religion, social origin, type of service, social status, residence, regardless of how long they have

lived in the territory of the Republic of Uzbekistan, everyone is guaranteed equal rights to education. In this case, attention to education in our country is considered within the framework of state policy, it is a proof that it is considered as an important social task of socio-economic development of our republic

In the process of research, we focus on the scientific-theoretical, methodological and practical aspects of improving the methodology of evaluating the innovative activity of higher education institutions.

The characteristic aspects of higher education institutions in providing educational services are as follows:

- educational services have an intangible nature and are not accumulated, but their results aimed at the formation of intellectual potential are accumulated and generalized;
- educational services are provided for a long time, which determines the standard period of training;
- it is necessary for the consumer of educational services of higher education institutions to have a certain level of basic knowledge;
- educational services are produced and consumed simultaneously without intermediaries;
- the state's high level of interest in the results of service provision, therefore, educational services have a positive effect on the development of society and the formation of its intellectual potential.

Innovations in modern society are rightfully considered as a key factor in building a knowledge-based economy. Over the past ten years, quite intensive efforts are expected to create various organizational structures, whose activities were focused on supporting and developing innovations in the country's universities.

The modern economy, which is in dire need of additional sources of growth, reserves that can lead it to an innovative path of stable and long-term development, makes qualitatively new demands on existing educational structures. The growing need for new ideas, the ability to bring ideas and developments to the stage of a finished product

or product requires a change in approach to the positioning and role of higher education institutions in the regions.

A modern university today is becoming not just an educational institution, a place of concentration of scientific developments and fundamental knowledge, but plays the role of an important subject that determines the pace of development, structure and processes of formation of an innovative market field. Universities can not only be part of the innovation ecosystems being created in the regions - they have every opportunity to become an integrating link in such a system.

Today, there are a large number of approaches to evaluating universities, including the highly publicized methodology for evaluating the effectiveness of the Ministry of Education and Science. However, in our opinion, the key is the need to consider the objects of higher education as elements of the regional innovation environment and approach the assessment taking into account these parameters. It is especially important to realize the role of universities not only as centers for the training of qualified personnel, but also as a basic link in the generation of new knowledge and the creation of new jobs.

Given these circumstances, the key indicators should be indicators that determine the level of development of the innovative environment of the university, with the exception, of course, of universities exclusively specializing in the humanities and institutions of culture and art, where there should be other criteria.

The existing methods for assessing the activities of universities in terms of their innovative component have a sufficient number of shortcomings and are mainly aimed at assessing the innovative potential of the university, i.e. its capabilities in the field of innovation generation and technology commercialization. But as practice shows, the presence of opportunities does not mean their further full and successful implementation, so it is necessary to move from assessing opportunities to assessing results, i.e. the level of the created innovation environment, its impact both on the university itself and on the

economy of the entire region as a whole. To improve the methodology for assessing the level of the innovation environment of the university, it is necessary to study and highlight the main shortcomings in the existing systems for assessing the level of innovation activity of higher educational institutions.

The methodology developed by the authors for a comprehensive assessment of the innovative activity of a university combines four interrelated stages:

Stage I - systematization and grouping of indicators for assessing the innovative activity of the university;

Stage II - a comparative analysis of the indicators of the university's innovative activity;

Stage III - determining the nature of the development of directions for assessing the innovative activities of the university;

Stage IV - an integral assessment of the innovative activities of the university.

At the first stage of the evaluation of innovative activity of universities, the

systematization and grouping of indicators for evaluating innovative activity is carried out in three areas: statistical research of innovative activity, training in innovative activity and educational activity that stimulates the development of innovative activity.

At the second stage, using the methodology of T.L.Saaty and the desirability scale of E.Harrington, a comparative indicator of the innovative activity of universities is carried out. Using the method of analysis of hierarchies by T.L.Saaty, the indicators of innovative activity of universities are ranked, and using E. Harrington's desirability scales, we establish a correspondence between the physical and psychological parameters of the innovative activity of the university. To rank the indicators in the selected areas of research, each indicator is rated (in the range from 0 to 1) according to the rating scales presented for each indicator of innovation activity (Table 1).



Table 1
Standard marks on the E. Harrington desirability scale

Desirability	Marks on the scale of desirability
Very well	1,00 – 0,80
Good	0,80 – 0,63
Satisfactorily	0,63 – 0,37
Badly	0,37 – 0,20
Very bad	0,20 – 0,00

At the third stage, the indicators of innovative activity are evaluated, according to the formula:

$$E_i = b_i * A_i \tag{1}$$

where E_i is the assessment of the i -th indicator of the university's innovative activity;

b_i is the priority of the i -th indicator according to T.L.Saati;

A_i is the score of the i -th indicator on the E.Harrington desirability scale.

The developed method simplifies the process of assessing the innovation activities of the university and provides an objective vision of the situation, since this assessment involves

the determination of a fairly large number of quantitative and qualitative indicators.

Then, an integral indicator of the university's innovative activity is calculated, taking into account the importance of each direction according to the formula:

$$I_E = \sum_{j=1}^n E_i * b_j \tag{2}$$

where I_E is an integral indicator of the university's innovative activity;

E_i - estimates of the i -th indicator of the university's innovation activity within the framework of the innovation project;

b_j is the priority of the j -th direction of the innovation activity of the university.

In accordance with the obtained value of the integral assessment, the innovative activity of the university is planned. The proposed methodology makes it possible to determine the current state of the university's innovative activities according to Table. 2.

The unsatisfactory state of the innovation activity of the university (0–0.37) is characterized by the following indicators: low performance indicators for the creation of innovations determine the inability of the university to participate in the innovation cycle; training in innovative activity is conducted at a low level; educational activity

does not stimulate the development of innovations.

When developing a strategy for the development of innovative activities of such a university, attention should be paid to the educational component of its work, which includes: training, retraining and advanced training of scientific and pedagogical personnel; creation of postgraduate education centers, research laboratories, conducting classes on the innovation activities of the scientific industry on the basis of innovative enterprises; increasing the degree of the teaching staff of the university.

The satisfactory state of innovation activity (0.37–0.63) is characterized as follows:

- activities to create innovations are carried out at an average level; training in innovative activity is carried out according to average statistical indicators;
- educational activities that stimulate the development of innovations are quite possibly carried out at a very high level, since they do not have a significant impact on the level of assessment. When planning the innovative activities of such a university, it is advisable to redistribute efforts to the process of creating innovations, since it will most effectively strengthen the innovative component of the university's activities

A good and very good state of innovation activity (0.63–1.0) is characterized as follows: a high level of activity to create innovation, respectively, the processes of teaching innovation activity are intensively conducted and, as a result, a consistently high level of educational activity, which stimulates the development of innovation. The strategic task of such universities is to maintain the position of leaders in the industry, in the country and, possibly, in the world. Perhaps these universities should be classified as leading ones and made them centers for the development of innovative activities of sectors of the national economy.

To increase the value of the integral indicator, the university needs to evenly improve the low scores in certain areas, such as, for example, the level of educational activities that stimulate the development of

Table 2
The state of innovation activity of the university¹

Integral assessment innovative university activities	0,20 - 0,00	0,37 - 0,20	0,63 - 0,37	0,80 - 0,63	1,00 - 0,80
State of innovation activities	Absolutely unsatisfactory rhetorical	Unsatisfactory rhetorical	Satisfactory rhetorical	Good	Highly good

To improve the indicators of innovation activity, it is necessary to plan a new cycle of improving other indicators. At the same time, it should be taken into account that the university should set goals that can be realistically achieved, i.e. at the beginning, it is better for him to focus not on the best indicators of the university's innovative activity, but on its average level.

¹ Compiled by the author

innovation. This will allow it to outline the main development trends and increase its competitiveness by innovative activity.

Thus, the first direction - activities to create innovations at the university - includes those types of work that are directly related to the process of creating, mastering and disseminating innovations.

The second direction - training in innovative activity - is a special type of university work that stimulates its development both in the university itself and in the industry, which is essential in the context of the formation of a knowledge-based economy.

The third direction is traditional for universities, but modern market relations give it a new meaning. At a time when information is becoming a way to attract investment, higher education institutions are in great demand for advanced training courses, training seminars and round tables on the development of the industry.

Conclusion/Recommendations

Studies have shown that:

1. The need for a unified system for assessing the innovative activity of a university is due to the control over the efficiency of using budgetary funds in the implementation of state programs to support the development of an innovative environment and infrastructure in universities.
2. It is very important to constantly monitor the level of the innovation environment and the efficiency of all its elements. However, using the existing methods for assessing the innovative activity of universities, it is extremely difficult to draw a correct conclusion about the level of the innovative environment of the university, its activity and compliance with the external business environment. Evaluation criteria do not reveal the essence of the concept of the innovation process in the university, do not allow to draw a conclusion about its effectiveness, results and adaptation to the needs of business and industry in the region.
3. To increase the value of the integral indicator, the university needs to evenly improve the low scores in certain areas, such

as, for example, the level of educational activity that stimulates the development of innovation. This will allow it to outline the main development trends and increase its competitiveness by innovative activity. Thus, the first direction - activities to create innovations at the university - includes those types of work that are directly related to the process of creating, mastering and disseminating innovations.

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