

EFFECTIVE EMPLOYMENT MANAGEMENT MODEL OF UNIVERSITY GRADUATES

Art. teacher, Kuchimov Maruf Kuchimovich,

Department of Information Technologies,

(Toshkent institute of architecture and civil engineering.)

Abstract:

The paper proposes a model of a university from the point of view of meeting the demand of the population for educational services and providing the regional economy with specialists with higher education, formalizing the task of employment of a university graduate in a specialty, identifying the nature of the functional dependence of the university's throughput on the student's professional self-determination, using real data to obtain a system production rules, which makes it possible to formulate recommendations for adjusting the professional self-determination of prospective employment of future graduates.

Key words:

Employment of graduates, data mining.

Today, one of the serious social problems is the threat of unemployment for young specialists who graduated from universities.

Employment of university graduates is not only a problem for graduates, employers, but also a problem for higher educational institutions. Each university is the subject of two markets: the market for educational services and the labor market for specialists, whose work is closely interrelated. Therefore, increasing the guarantee of employment after receiving education is an important competitive advantage of the university in the educational services market [2].

Monitoring of the effectiveness of the activities of universities is determined by the indicator of employment of graduates [3]. Consider the issues of employment of graduates in a particular university taken. The Tashkent Institute of Architecture and Construction (TIAC) is the largest university in Uzbekistan, an educational, research and cultural center, consistently implementing a multi-level education system.

The results of monitoring according to TIAC indicate that according to five criteria the university meets the specified threshold values [4].

In this regard, the search for factors influencing the employment of university graduates and methods for solving the problem are an urgent task for a university.

The main innovation of the monitoring was the calculation of threshold values - these are the median values of the indicator for a group of universities [6].

In this regard, TIAC needs to strengthen its work on the employment of graduates in order to fulfill one of the criteria of the university's activity.

The issues of competitiveness of graduates were investigated by J. Beilerot, I.V. Virina, N.V. Volkova, T.G. Gesuke. S.R. Demidov, M.V. Seibert, O.M. Kirilyuk, N.V. Korneichenko, T.G. Ozernikova, O.V. Saginova, etc.

The analysis of factors affecting the competitiveness of graduates was reflected in the works of N.A. Kontareva, N.Sh. Nikitina, Ya.M. Roshchina, L.G. Milyaeva, Borisova O.V. S.V. Shishkina and others.

The external TIAC model (Fig. 1) forms the supply of educational services and the offer of graduates for a set of educational programs, therefore, a generalized criterion for the effectiveness of the university's functioning can be formulated: coordination, satisfaction and advanced formation of spatially localized demand for educational services and graduates within the specified institutional constraints and resource provision. [6]

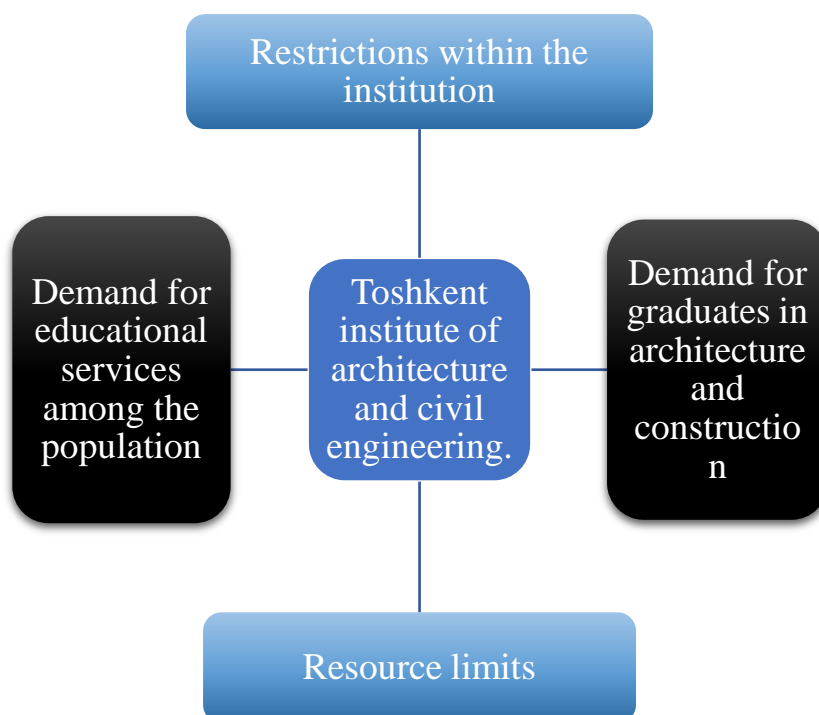


Figure 1. External model of TIAC functioning

The internal model of TASI as a controllable system includes the number of students enrolled in each educational program, the provision of study areas, personnel, documentation, and finance at each moment of time. Controlling influences consist of the choice of educational programs, according to which specialists are trained, and restrictions - the resources that the institute possesses.

Combining the external and internal models of the university, we get a general model of the university in terms of meeting the demand of the population for educational services and providing the regional economy with specialists in the field of architecture and construction with higher education.

As a result, the defining parameters predicting the functioning of the university are:

- forecast of demand for educational services;
- reception forecast;
- actual reception;
- forecast of demand for graduates;
- release forecast; - actual release.

The general model of the functioning of the university can be simplified as a stream model, where applicants are "given" as input, and graduates are at the output after "transformation".

Let's consider in more detail the input of the stream model of the institute.

Applicants can be:

- persons wishing to obtain higher education under the bachelor's or specialist's degree programs. They have documents confirming the development of a general education program, as a rule, graduates of schools and colleges;
- Persons wishing to obtain higher education in Master's programs. They have diplomas confirming the development of a bachelor's or specialist's program, university graduates;
- persons wishing to receive higher education in postgraduate programs. They have diplomas confirming the development of a specialty or master's program, university graduates;
- persons wishing to get a second higher education. They have diplomas confirming the development of a higher education program, university graduates;
- persons wishing to receive additional education (course participants). As a rule, there are no restrictions on the requirement of previous education.

After graduating from the university, possible places of employment for graduates are organizations, enterprises, institutions, continuing education at the next stage of education, serving in the ranks of the army of Uzbekistan.

Let us denote by S the throughput of the university - the number of students studying at TASI at time t for each educational program S_1, S_2, \dots, S_n . According to the external model of the university, there is a population demand for educational services DE for each educational program dE_1, dE_2, \dots, dE_n , a demand for university graduates from the economics of the DL region for each educational program dL_1, dL_2, \dots, dL_n .

The activity of a university is considered successful when the demand for educational services is balanced by the demand for university graduates, i.e. the balance equation is fulfilled [5]:

$$D_E = S = D_L \quad (1)$$

If the balance equation (1) is not satisfied, then the following cases are possible. With $S > DE$, the capacity of the university is greater than the demand for educational services, which can be predicted based on the data on the students in the schools of the region. Consequently, the university will need to develop activities that are not related to the provision of educational services for school graduates, for example, scientific, or optimize the structure in such a way as to reduce the cost of maintaining the available capacity.

With $S < DE$, the university's throughput is less than the demand for educational services on the part of school graduates. In this case, on the one hand, more gifted applicants will come to the university, but the demand from the population will remain unmet, or the university will need to expand its capacity, which is associated with an increase in costs. In this regard, it will be necessary to assess which of the options will be most favorable for the development of the institution.

If the balance equation (1) does not hold in terms of meeting the demand for graduates, then for $S > DL$, the throughput of the university is greater than the demand for graduates. Consequently, university graduates join the ranks of the unemployed, are forced to leave the region or take up their own retraining.

With $S > DL$, the throughput of the university is less than the demand for graduates, the regional economy in this case experiences a shortage of personnel, and all university graduates are employed.

With $DE > DL$, the region experiences a shortage of jobs and no educational institution will solve this problem, this is the prerogative of the regional authorities. If $DE < DL$, the university can help the region by increasing information accessibility and inviting applicants from other regions.

The university cannot influence either the demand from the population or the demand from the economy; the university can only manage its bandwidth. To provide educational services, the university must have the resources and comply with legal requirements. Consequently, resource

constraints $R = (r_1, r_2, \dots, r_m)$, where r_1, r_2, \dots, r_m are specific resources corresponding to the internal model. Also, the throughput depends on the set of educational programs $O = (O_1, O_2, \dots, O_n)$, where O_1, O_2, \dots, O_n are the corresponding educational programs of the internal model. To fulfill the balance equation (1), it is necessary that the professional self-determination of the graduate coincides with the need of the regional economy for professional personnel.

Professional self-determination is understood as the process of forming a person's attitude to professional activity and the way of its implementation through the coordination of personal and social and professional needs. Therefore, professional self-determination is a kind of creative process of personality development.

Thus, we can assume that the capacity of the university is dependent on educational programs O , available resources R and professional self-determination P , i.e.

$$S = S(O, R, P).$$

From the point of view of the management of any university, it is important to know the minimum number of resources required for conducting educational activities, therefore, we introduce an inverse relationship $R(S)$, which characterizes the minimum number of resources required for a given bandwidth.

The quality of the models was assessed on the basis of contingency matrices, according to which positive outcomes are better classified in all models.

The research carried out made it possible to form a system of production rules that form the basis of the developed information system, which forms recommendations for adjusting the professional self-determination of prospective employment of future graduates.

The proposed model of the university, from the point of view of meeting the population's demand for educational services and providing the regional economy with specialists with higher education, makes it possible to determine the nature of the functional dependence of the university's throughput on the student's professional self-determination and contributes to the management of employment of the future graduate of the institute.

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