



ASSESSMENT MODEL OF QUALITY AND DEMAND FOR EDUCATIONAL SERVICES CONSIDERING THE CONSUMERS' OPINION

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Abstract

Purpose: The purpose of the article is to develop an integrative, structural and functional, indicative, aggregating, algorithmic, the multi-criteria model for assessing the quality and demand for educational services of higher education considering the consumers' opinion.

Methodology: The leading research method of the indicated problem was the assessment of various aspects of educational relations in the process of complex diagnostics of the studied phenomena, which includes: preliminary system model of research, interpretation and operationalization of the basic concepts included in it; relevant means of fixation of primary characteristics; the order of data collection; algorithm of analysis and data processing in order to obtain a rating assessment proposed as a mechanism for assessing the quality and demand for educational services with the participation of consumers.

Result: The authors substantiate the inclusion in the system of indicators of both objective characteristics: the professional status of graduates of higher educational institutions (the share of employed, the level of wages, the area of employment), the status of educational programs (social and professional accreditation), and their subjective characteristics, expressed in: the formation of professional competencies of graduates (including hard skills and soft skills), which together characterize their professional subjectivity. The materials of the article are of practical value for government agencies, heads of educational institutions, rating agencies, representatives of organizations-employers, applicants, their parents, and students.

Applications: This research can be used for universities, teachers, and students.

Novelty/Originality: In this research, the model of Assessment model of quality and demand for educational services considering the consumers' opinion is presented in a comprehensive and complete manner.

Keywords: *quality of educational services, demand for educational services, consumers, rating of universities, quality assessment, demand assessment, hard skills, soft skills.*

INTRODUCTION

One of the most important criteria characterizing the effectiveness of the higher education system in any country is the quality and demand for educational services provided by higher education institutions.

The Russian system of assessment of the quality of educational services is currently in the process of modernization and its vector is aimed at improving efficiency through the development of mechanisms for the independent assessment of their quality, the use of modern information technology tools to determine demand with the participation of consumers. The problem of insufficiency in the existing mechanisms for assessing the quality and demand for higher education services is clearly traced, taking into account the opinions of various groups participating in educational relations ([Ermakova and Nikulina, 2017](#); [Bahremand, 2015](#)). So far, this has not been given proper attention.

The importance of this aspect is confirmed by the following trends. Due to the fact that the educational sphere is becoming increasingly market-oriented in Russia, the introduction of additional requirements for professional education got by University graduates from both employers and, accordingly, direct consumers of educational services – students, their legal representatives and subjects of labor relations regulation – is inevitable. There is a transformation of the entire organizational and technological chain of the order for the educational service – “customer - developer - contractor - expert – customer”. Objectively, classical education does not fully meet the needs of the market in the request for the presence of a number of new competencies at the University graduate (employee).

The solution to these problems is complicated by the inertia of the mechanisms of evaluation of the education system, the difficulties of combining technologies used by the methods of state and non-state, internal and external quality control and the demand for educational services provided by higher education organizations.

MATERIALS AND METHODS

The method of evaluation of various aspects of educational relations is carried out within the framework of the process of complex diagnostics of the studied phenomena, which includes: a preliminary system model of research, as well as the interpretation and operationalization of the basic concepts included in it; the relevant means of fixing the primary characteristics; the order of data collection; the algorithm of analysis and data processing in order to obtain a rating.

The methodology is based on an indicative model and reflects the structural and procedural aspects of the evaluation mechanism and is presented in the form of interrelated components of the evaluation mechanism; analysis of existing

approaches to this assessment; development of its methodology and model; testing and justification of ways to use this methodology in the formation of the evaluation mechanism ([Fitriani & Suryadi, 2019](#)).

The methodology includes the use of modern concepts of educational services provision, determining their quality on the basis of scientific theoretical and experimental methods. [Athiyaman, A. \(1997\)](#).

One of the oldest tools for assessing the quality of services provided by higher education institutions is the publicly recognized world and national rankings. In Russia, in the light of the latest trends in the reform of the system of state quality control of universities, the universities that will be in the top 500 “global institutional, sectoral and subject rankings” will be exempt from assessing the quality of their educational programs. This indicates that the rating system is already recognized at the state level as an effective and viable tool for quality control.

The formation of ratings is based on the appropriate explanatory model developed and presented in accordance with the scientific methodology of the study of phenomena and processes in the educational sphere. [Minghetti, V., & Celotto, E. \(2014\)](#).

Despite the fact that due to the imperfection of the methodology of foreign and Russian ratings, the differences in their goals, objectives and, consequently, in the criteria, estimates, weighting factors, methods of collecting and processing information, ratings may not always give a fully objective picture (different methods – different results) at the moment they:

- Form a social reality, including through feedback from consumers – national and foreign experts, applicants, students, graduates, teachers, employers;
- Allow universities to obtain information about their reputation in the opinion of the main users of educational institutions, emerging through the prism of quality and demand for services and achieved activity indicators by higher education in comparison with other universities in the Russian and world space;
- Allow making a significant contribution to the formation of the world educational image of the country in the context of the formation of the international integration educational space, the positions of Russian educational institutions in foreign rankings.

The purpose of the ranking of universities based on the assessment of demand and quality of educational services considering the consumer’s opinion is the need to assess the ability of universities to meet the requirements of the main consumers to the quality of educational services. “Employment is one of the most important indicators of the demand for a particular university, and we will take this indicator into account when monitoring the system of higher education in Russia” D.V. Livanov ([Ministry of education and science, 2018](#)).

Comparative analysis showed that the quality and demand for educational services provided by higher education institutions in national and world rankings are mainly assessed by a set of indicators with different weight coefficients from rating to rating, association by areas and sources of getting. Four groups of indicators are mainly used for ranking:

- Expert evaluation;
- Bibliometric;
- Financial;
- Webometrics.

The offered model of the rating of the organizations of higher education on the basis of demand and quality of the provided educational services considering the consumers’ opinion represents:

1. Quantitative assessment of the university relative to other similar educational institutions;
2. Schematic description of the ordering of higher education institutions by the level of this assessment;
3. The methodology of this ordering (rating process).

According to its characteristics, this model is integrative, structural-functional, indicative, aggregating, algorithmic, and multi-criteria.

The integration of the developed model is determined by the inclusion of specific models in it in accordance with the definition of the rating of higher education institutions based on the assessment of the demand and quality of educational services, considering the consumers’ opinion in accordance with figure 1.

The demand for educational services on the part of people who have the installation for training, or are trained in universities, is a basic component of the evaluation of educational services of the university. The main indicator of this parameter is the assessment by students of the formation of professional competencies necessary for the market. This indicator is determined during the survey of students.

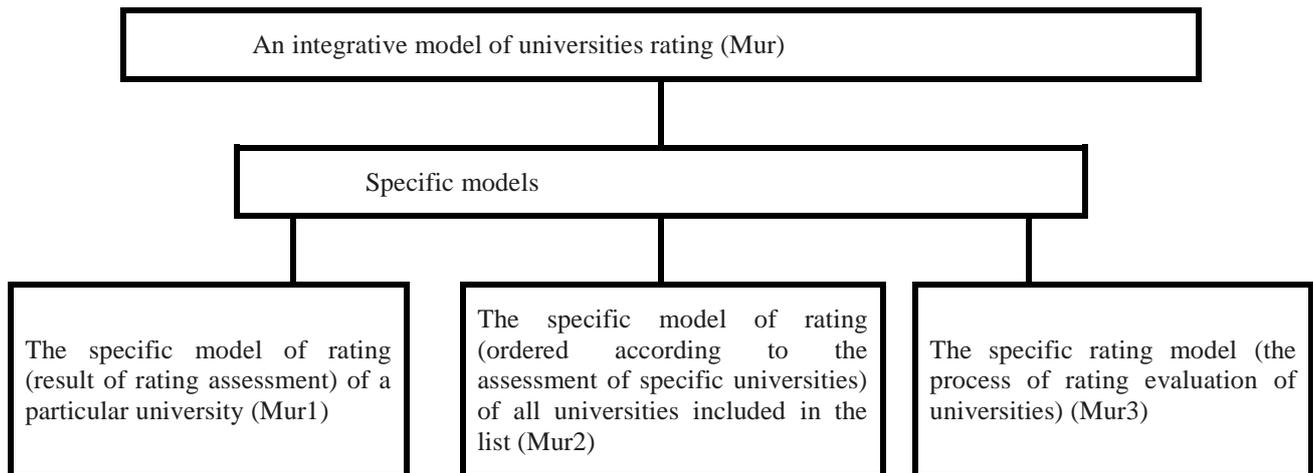


Figure 1: Integrative rating model of universities in accordance with the demand and quality of educational services

In accordance with the model, the rating of educational services provided by universities can be formed both by individual parameters of demand and quality and by their combination.

Additional indicators are statistical and rating groups of indicators. The first – the statistical group of characteristics – includes statistical data on the employment of university graduates:

- Salaries of graduates according to the Ministry of Science and Higher Education of Russia;
- Share of employment of graduates according to the Ministry of Science and Higher Education of Russia;
- The number of regions in which graduates are employed according to the Ministry of Science and Higher Education of Russia.

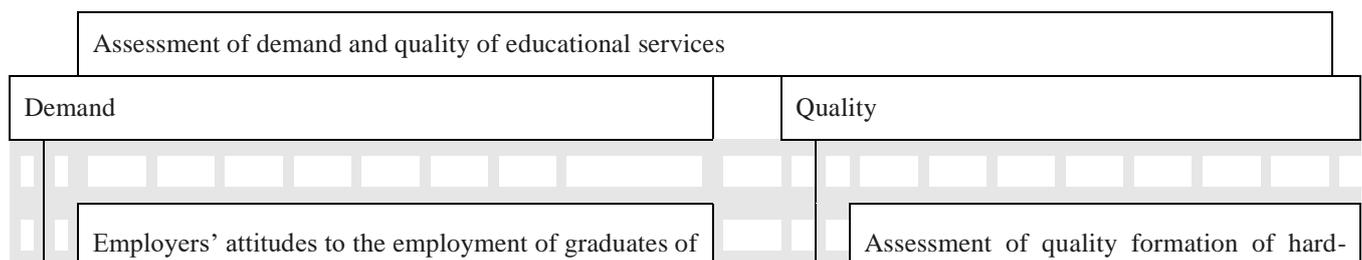
Analysis of world rankings includes data on the criterion of “employer assessment”:

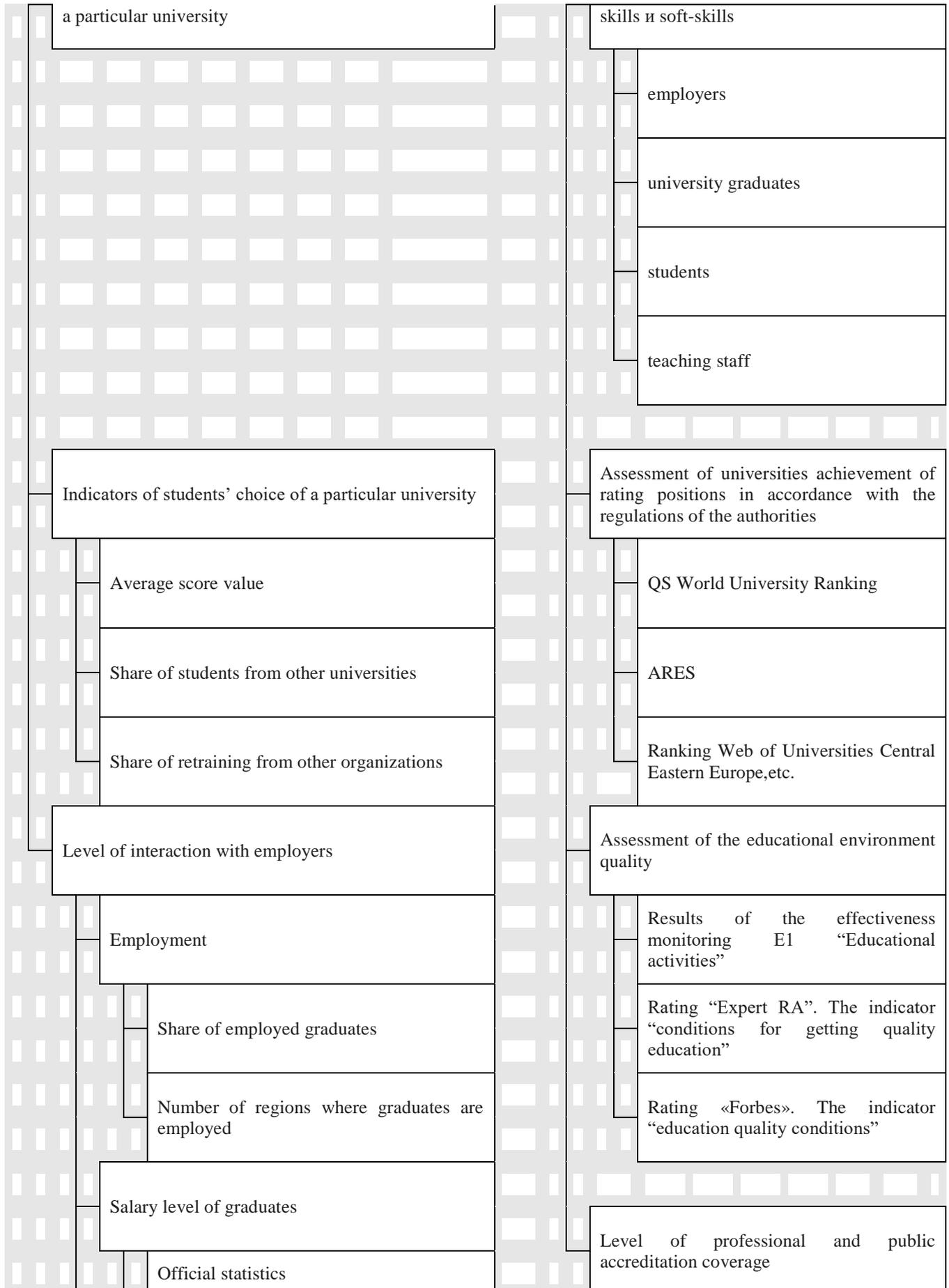
- QS World University Ranking;
- QS WUR by Subject Ranking - Economics and Econometrics;
- QS EECA University Rankings;
- QS BRICS Ranking;
- QS Stars;
- ARES;
- Ranking Web of Universities Central Eastern Europe.

Analysis of Russian rankings of higher education institutions:

- Rating Expert RA (indicator “level of demand by employers”);
- Rating Forbes. Section “Quality of graduates”;
- Rating “Superjob for students”;
- The level of salaries of young professionals who graduated the university 1-5 years ago.

Based on the study of the possibilities of obtaining the necessary information from the described sources, an indicative model for assessing the demand and quality of educational services in accordance with figure 2 is constructed.





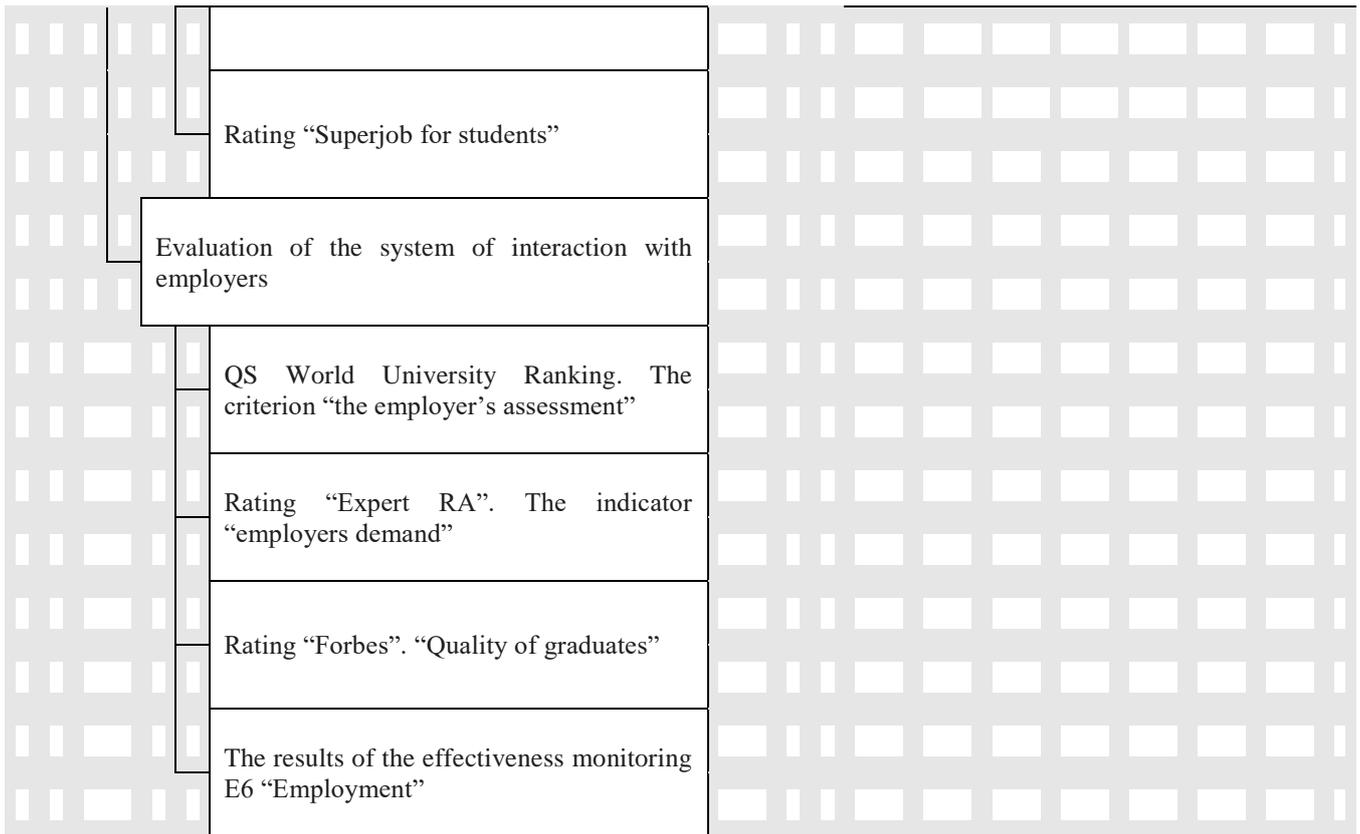
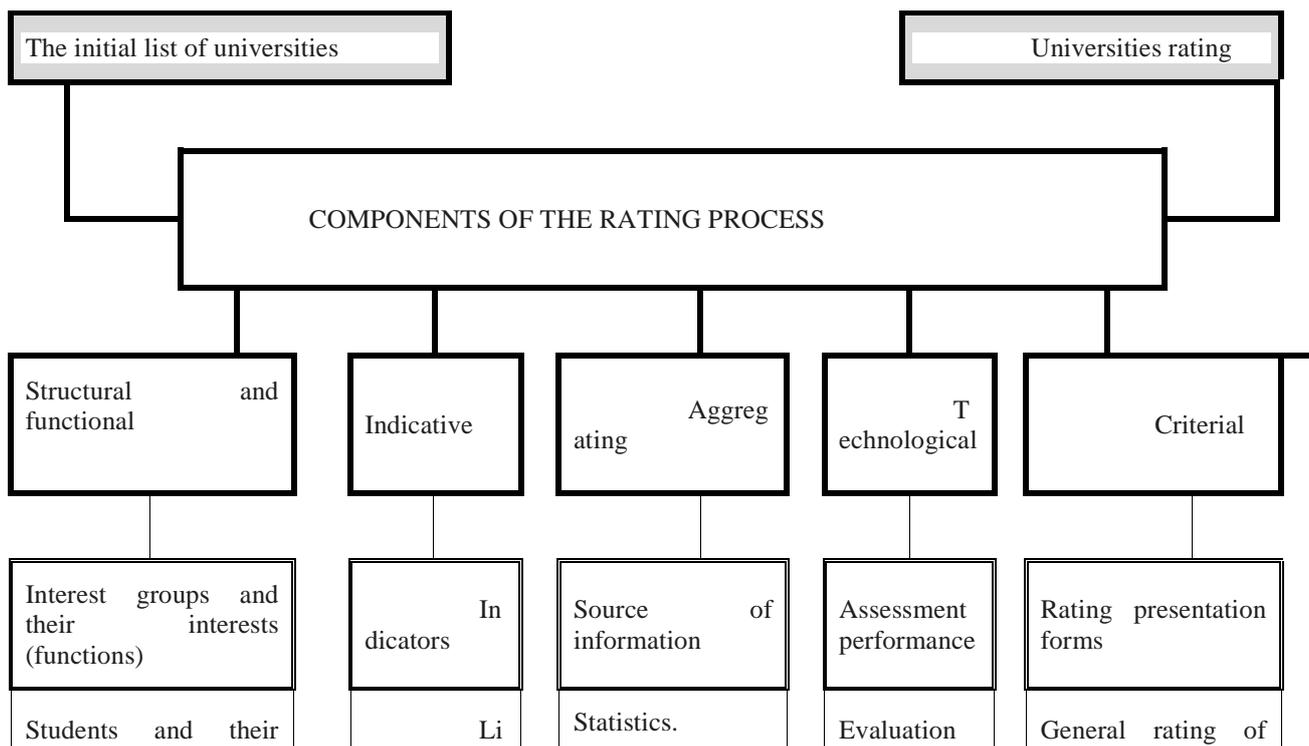


Figure 2: Indicative model of educational services evaluation

At the same time, the content of the model structurally reflects the different groups of stakeholders in educational relations, which allows determining the quantitative assessment of the demand and quality of educational services both according to the direct consumers (students, graduates, as well as their legal representatives) and employers. The specific rating model (Mur3) reflects the different components of the process of determining the university place in the ordered list of other universities in accordance with the assessment of the quality and demand for educational services (figure 3).



teachers	st №1	Results of the self-examination of universities. Ratings. Expert study. Interest group surveys.	algorithm (procedure)	demand and quality
Employers	Li st №2			
Subjects of professional and public regulation	Li st №3			
Public administration bodies	Li st №4			

Figure 3: Rating model of universities considering the consumers' opinion about the demand and quality of educational services

Thus, the developed model of the rating of demand and quality of educational services provided by universities, considering the consumers' opinion, which has integrative, structural and functional, indicative, aggregating, algorithmic, multi-criteria nature, allows carrying out a real study of the modern characteristics of educational organizations in order to determine their position relative to each other in the framework of a reasonable list of indicators of demand and quality.

RESULTS

The proposed rating based on the assessment of the demand and quality of educational services, considering the consumers' opinion, is an assessment of the quality of universities (on the example of universities of financial and economic orientation), calculated by 7 main indicators. The assessment is based on the results of the analysis of statistical indicators and the results of the sociological survey.

The main sources of statistical information (objective indicators of the rating) are the data of Employment Monitoring of the Ministry of Science and Higher Education of Russia ([Monitoring system of professional and public accreditation, 2018](#)), Monitoring of social and professional accreditation of the Ministry of Science and Higher Education of Russia, as well as the results of a study of economic universities conducted annually by the portal Superjob ([Superjob for students, 2018](#)). Subjective rating indicators are calculated based on the results of a sociological survey of experts-employers' representatives conducted by the Educational and sociological laboratory of the Financial University. The survey consisted of two questions to experts-employers' representatives, who were business owners, heads of organizations, deputy chairmen of boards, directors, heads of directions (budgeting, control and internal audit; controlling, marketing, taxation, sales, HR), heads of offices, divisions, departments, financial controllers with experience in managerial positions for more than 5 years (30%), more than 10 years (15%), more than 20 years (7%). Experts represented companies operating in various fields: banking, information technology, audit, consulting, finance, investment, public sector, insurance, aircraft construction, auto business, military-industrial complex, medicine, law, taxation, sales, and media.

The indicators used in the proposed rating are shown in table 1.

Table 1: Rating of indicators

№	Name of the indicator	Measure unit	Source of information
1	Share of graduates' (2015) employment in 2016	percent	Portal of monitoring of employment of graduates of the Ministry of Education and Science of Russia
2	The average amount of payments in 2016 to the 2015 graduates	RUB	
3	Number of regions where graduates are employed	unit	Superjob
4	Salary, which graduate, who graduated this university can have in Moscow (2017-2018)	RUB	
5	Number of accredited educational programs	unit	The monitoring system of social and professional accreditation of the Ministry of Education and Science
6	Graduates of which universities employers prefer to units of the votes		Survey data

hire
The share of experts among employers who hired a graduate of the university and gave him a positive percent assessment (“good”, “high”)

In order to combine all indicators into one rating, the procedure of linear normalization of all used numerical values was carried out. This method is the most common for the normalization of input and output variables (1) and is the most relevant for the proposed rating.

Calculation of each rating indicator is carried out according to the linear normalization formula:

$$x_i = \frac{V_i - V_{\min i}}{V_{\max i} - V_{\min i}} \quad (1)$$

Where x_i – score of the i indicator from the sample of universities of financial and economic orientation;

$V_{\min i}$ – minimum value of the i indicator;

$V_{\max i}$ – maximum value of the i indicator.

$$x_i = \frac{V_i - V_{\min i}}{V_{\max i} - V_{\min i}} \quad (2)$$

Where x_i – score of the i indicator from the sample of universities of financial and economic orientation;

V_i – value of the i indicator;

$V_{\min i}, V_{\max i}$ – minimum and maximum value of the i indicator.

According to the results of the calculations in accordance with the formula (1), the received scores are summed up for each university of financial and economic orientation according to the formula (2).

$$x_j = \sum_{i=1,2,3,4,5,6} x_i \quad (3)$$

Where x_j – the sum of scores of the j university of financial and economic orientation on all indicators of the rating; i – rating indicator.

The final calculation, showing the specific position (place) of the university of financial and economic orientation, is carried out in the ranking after the final normalization of the results by the sum of scores calculated by the formula (3), each of the 7 indicators. The calculation was made by the formula (4), the results of which formed the final score (maximum (max) - 100, minimum (min) - 0) and is assigned a place in the ranking.

$$x_{ij} = \frac{V_{ij} - V_{\min ij}}{V_{\max ij} - V_{\min ij}} \times 100 \quad (4)$$

Where x_{ij} – the final normalized score of the i indicators of the j university of financial and economic orientation;

V_{ij} – the value of the sum of scores of the i indicators of the j university of financial and economic orientation;

$V_{\min ij}, V_{\max ij}$ – the minimum and maximum value of the sum of scores of the i indicators of the j university of financial and economic orientation.

CONCLUSION

Based on the results of the study, an improved model of independent internal and external evaluation of the quality and demand for educational services of higher educational institutions is proposed and a rating of universities of economic orientation is built taking into account the consumers’ opinion. The system of indicators of this technique includes both objective characteristics of the professional status of graduates of higher educational institutions (the share of employed, the level of wages, the area of employment), the status of educational programs (social and professional accreditation), and their subjective characteristics, expressed in the formation of professional competencies of graduates (including hard skills and soft skills), which together characterize their professional subjectivity.

Subjective indicators of formation of professional competencies, the use of which is appropriate to assess the quality and demand for educational services provided by higher education institutions, at the present stage of development of the evaluation system helps to correct the existing contradictions between the various subjects of educational relations in determining the priority characteristics of education for them.

As the results of the proposed rating showed, the assessment of universities based on the analysis of the demand and quality of educational services, taking into account the consumers' opinion through the prism of employment indicators, wages, the number of professionally-public accredited educational programs and employers' preferences is caused not only by the possibility of applicants, students, their parents to assess the future prospects and the validity of salary expectations, but also contributes through certain categories of interested users of the rating of the implementation of important national economy and state task to increase the number of employable population with high income in all regions of our country.

The results of the study of the demand for competencies in the labor market (in the preparation of the rating) also showed that among the unified professional skills and personal qualities groups of competencies were the most popular that reflect the character traits and attitude to work. The first group of competencies (soft skills) includes a number of individual characteristics such as responsibility, initiative, stress resistance, diligence, independence, accuracy, etc. Module attitude to work contains the following qualities: focus on results, the ability to work with a large amount of information, the ability to work in multitasking, fast learning, commitment to professional growth, customer focus, etc. Among the blocks of competencies that form the basis of hard skills, the greatest demand among employers causes professional knowledge, skills, knowledge of PCs and programs, job experience.

RECOMMENDATIONS

This article can be of practical value for public authorities in order to clarify the position of the legislation in terms of the introduction or clarification of existing definitions of the concepts of "educational service", "quality of educational services", "demand for educational services", "mechanism for assessing the quality of educational services", etc., as well as to expand the range of indicators for monitoring the education system in order to establish causal relationships between the actual quality of educational services and their demand by interested groups – participants of educational relations, consumers of educational services. Also, this article can be useful for heads of educational institutions, rating agencies, employers, applicants, parents, students.

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