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INTELLECTUAL POTENTIAL OF A UNIVERSITY: EFFICIENCY ANALYSIS AND EVALUATION METHODOLOGY

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Abstract: The article discusses various foreign methodological approaches to assessing intellectual capacity. The author recommends the scheme for the formation of indicators of intellectual capacity based on the analysis that can be used as a basic one. This scheme has the possibility of correcting and clarifying the indicators according to the tasks set for the study of intellectual capacity. The author also proposed a technique for the integral assessment of intellectual capacity based on the aggregate approach that makes it possible according to the interaction of various conditions and factors that form each separately taken component and their summary characteristics.

Key words: intellectual capacity, education, indicators, growth reserves, integral assessment.

Introduction.

World development trends indicate that humanity is consistently entering in qualitatively new stage in its development. The characteristic feature of this stage is comprehensive intellectualization of society based on the lifelong education systems development and the deep penetration of educational systems by the results of their labor into the sphere of science and production.

On the importance of further intellectualization of society, the formation of a new intellectual space and intellectual environment, the President of Uzbekistan Sh.M. Mirziyoyev noted: "... continuation of the course of further improvement of the continuous education system, increasing the availability of quality educational services, training highly qualified personnel in accordance with the modern needs of the labor market"[1]

Thus, the objective processes and trends of the consistent intellectualization of society in Uzbekistan, the development of intellectual space and intellectual environment, an increase in their role in ensuring economic growth, the need for further development of intellectual capital [2], constant attention to these issues on the part of the President of the Republic of Uzbekistan determine the relevance of the study problems of implementation of the strategy of formation, use and assessment of intellectual capacity.

In the context of globalization, international competition is increasing in all areas, including education. In these conditions, education becomes not only a full-fledged branch of business, but also one of the advanced industries, on which the international competitiveness of the entire economic system largely depends. [4]

Due to the dynamic changes taking place in the external environment, universities are losing the stability of their functioning and development, the requirements for the quality of training of

graduates and the effectiveness of scientific research on the part of employers and consumers of services are increasing. Therefore, the transition to an innovative economy requires transformations in the activities of educational institutions. In the context of the globalization of the market and the development of the knowledge economy, requiring a quick response and improving the quality of training, universities have to look for new forms and ways to improve the efficiency of their activities. [5]

In the context of increasing competition in the educational services market, one of the main tasks of the university management is the effective management of its intellectual capacity. This is what will increase the competitiveness of universities in Uzbekistan.

For effective management of the intellectual capacity of an educational institution, its objective assessment is necessary. Assessment of the intellectual capacity level of an educational institution will allow efficiently managing the activities of the university and determining those areas of innovative development that will ensure its competitiveness, stability and flexibility in changing external conditions.

There is a wide variety of methods for assessing the intellectual capacity but the methods that are directly used to analyze and assess the intellectual capacity of a higher educational institution have not been developed enough. Therefore, the problem of developing a unified, universal methodology for assessing the intellectual capacity, which would allow the most accurate and objective assessment of the intellectual capacity of the university, remains relevant. This is due to the fact that the very concept of intellectual capacity is relatively new and there are contradictions on the issue of determining its content and structure. The correct choice of the system of indicators, allowing to comprehensively characterize the capacity on various grounds, and the choice of the most reliable method for its assessment will ensure the objectivity of the assessment of the intellectual capacity of the university [6].

There is no unified approach to determining the composition and structure of intellectual capacity in modern economic science.

Without delving into various points of view regarding the composition and grouping of indicators of intellectual capacity, we recommend a scheme for their formation, which will be used as a basic one, with the possibility of correcting and clarifying them, taking into account the tasks set for the study of intellectual capacity (Figure 1.1).

The most important indicators of intellectual capacity are considered separately below. The most important indicator of the structure is human resources. The following indicators (indicators) can be used: the total number of research workers (excluding external part-time workers and working under contracts); the proportion of research workers with a Ph.D. degree in the total number of research workers; the proportion of research workers with a doctorate degree in of the total number of teaching staff; the proportion of the number of teaching staff without a scientific degree - up to 30 years, candidates of science - up to 35 years, doctors of science - up to 40 years, in the total number of teaching staff, etc.

Scientific and technical capacity reflects the ability to develop. It based on the latest achievements of innovative development.

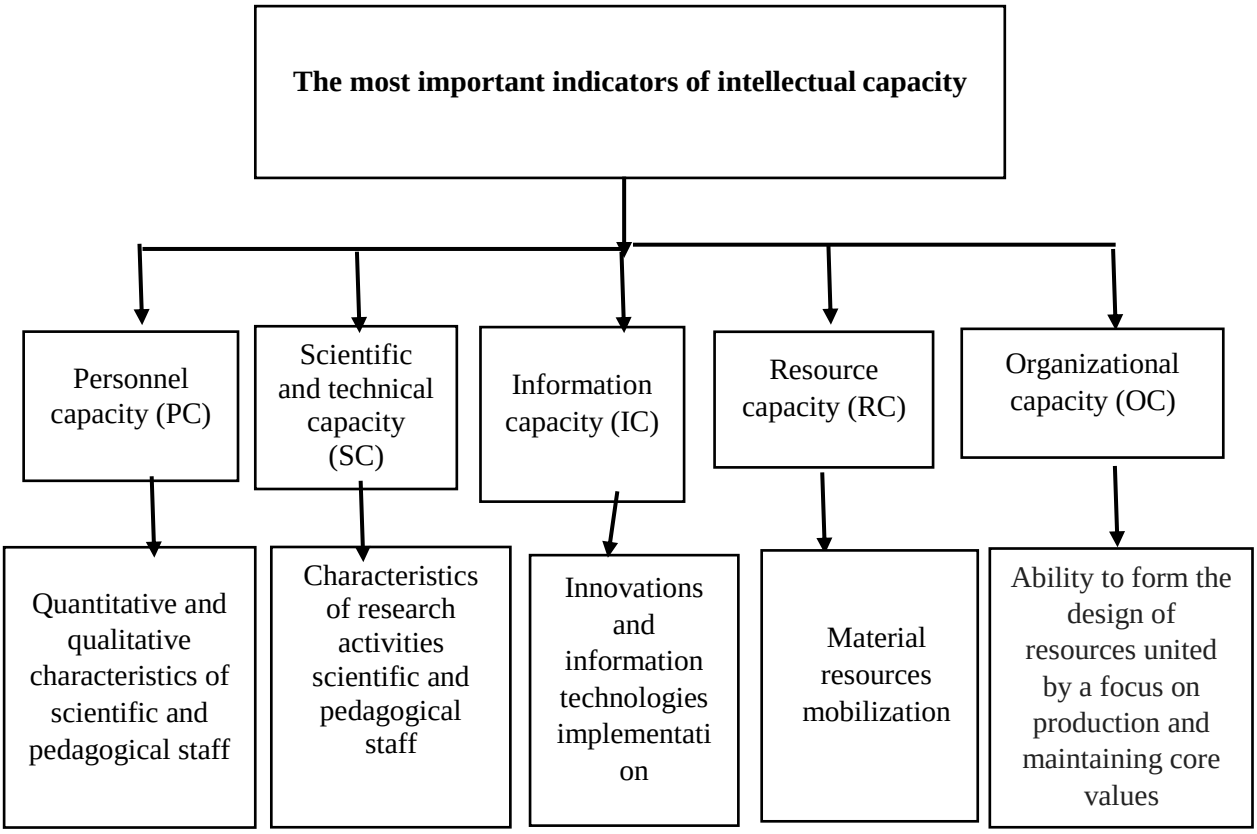

Figure 1.1. Schematic diagram of the most important indicators of the intellectual capacity of the university formation

(Source: Developed by the author)

Innovativeness can be measured through the number of publications of the organization indexed in the information and analytical system of scientific citation Web of Science and Scopus, per 100 academic staff, the total volume of research and development work, the number of created results of intellectual activity that are legally protected outside Uzbekistan.

Information capacity is one of the main links of intellectual capacity, characterized by the number of scientific journals, including electronic, published by an educational organization, the presence of an electronic library system, the presence of a distance learning system, the share of personal computers with access to the Internet, the presence of network programs, etc.

Resource capacity includes the income of an educational organization from funds from income-generating activities per one academic staff, the total area of buildings (premises), the area intended for research units, the number of personal computers, the share of the cost of machinery and equipment (not older than 5 years) in total cost of machinery and equipment.

Organizational capacity is measured through the number of dissertation councils, the average salary of the teaching staff (without external part-time workers and working under contracts), the average salary of researchers (without external part-time workers and working under contracts), the number of licensing agreements, the number of business incubators, the number of small enterprises.

Nowadays there is no generally accepted methodology for assessing intellectual capacity and its indicators. We have examined and analyzed the most common methodological approaches to assessing intellectual capacity in world practice (table 1.1).

Table 1.1

Methodological approaches to assessing intellectual capacity

The method name	The essence of the method
D. Tobin coefficient	The ratio of the object market value to the cost of its replacement. It is also called the Cost Approach.
C.E.Sweibi's method	Intellectual capital is assessed according to a system of indicators, ordered in a matrix. Personnel competencies, internal structural characteristics of the organization and customers are highlighted along one axis; growth (renewal), efficiency and stability on the other axis
Market Capitalization Methods	It is defined as the difference between market and book value. The difference between the market and book value of assets is the price of intellectual capital
Direct Intellectual Capital methods	Based on the assessment of individual components of intellectual capital. The integral assessment of the intellectual capital of the company as well as of its employees is derived after the individual parts of the capital have been assessed.
Norton and Kaplan scorecard	There are 4 blocks of indicators: financial; client; internal processes (innovative); learning.
Intellectual Capital Index	A technique aimed at building a picture of value creation in a company. The approach integrates strategy, non-financial characteristics, finance and added value.
Return on Assets methods	The return on assets ratio compares to that of the industry as a whole. The company's tangible assets to calculate the average additional income from intellectual capital multiply the resulting difference. Further, you can estimate the value of intellectual capital by discounting the received cash flow.
Ante Pulika's Intellectual Value Added Method (VAIC).	Determines the efficiency of using three types of firm resources: indicator of asset value efficiency (CEE), human capital efficiency (HCE) and structural capital efficiency (SCE).

The recommended by us methodology for the intellectual capacity integral assessment is based on the aggregate approach which makes it possible to take into account the interaction of various conditions and factors that form each separately taken component and their summary characteristics (Figure 1.2).

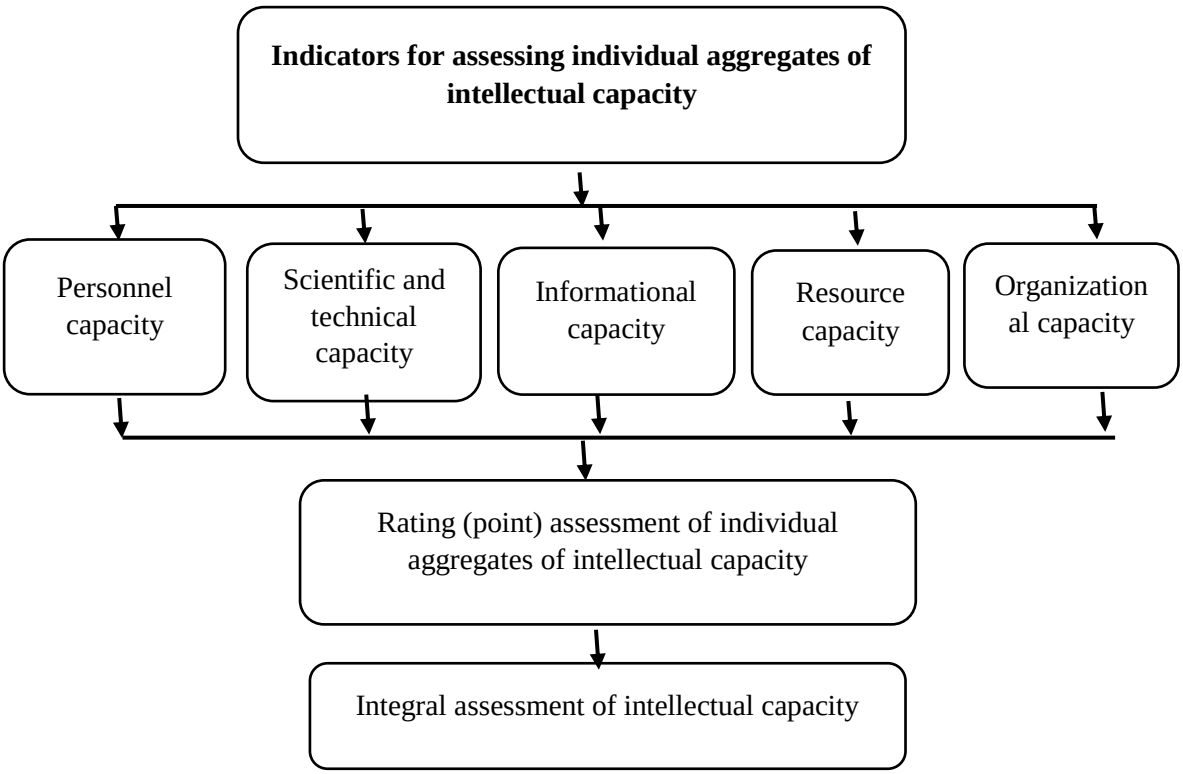

Figure 1.2. The integrated assessment of intellectual capacity scheme (Source: developed by the author)

The essence of our proposed assessment methodology is to calculate the integral indicator of intellectual capacity as the arithmetic mean of the sums of potentials for each structural element. The novelty of our proposed assessment methodology lies precisely in the new system of indicators for assessing the intellectual capacity of universities, built in accordance with the proposed structure of the capacity. This system of indicators, on the one hand, allows you to assess the current the intellectual capacity of the organization, on the other hand, includes the most important indicators for each of the components of the intellectual capacity, which ensures the completeness and complexity of its assessment.

The presented common scheme of the intellectual capacity integrated assessment can be refined based on the task at hand by expanding (reducing) the number of selected indicators that characterize each component of the aggregates. Along with the assessment of the intellectual capacity state, it is important to determine the effectiveness of its use according to the results.

In the context of the growing demands of an innovative economy associated with both external and internal factors, the relevance of using the available reserves and opportunities increases based on the efficiency of using each component of the intellectual capacity.

One of the most important areas of modeling the sustainable growth of intellectual capacity is the development of a methodology for calculating reserves for the growth of intellectual capacity, the purpose of which is to identify missed opportunities to involve additional volumes of generation of intellectual capacity [7].

The calculation of these reserves is based on the use of actually achieved results of intellectual activity in comparison with the threshold values of growth indicators. The calculation method provides that the intellectual capacity integral assessment of is carried out in five units:

H– human resources;

S - scientific and technical capacity;

I - information capacity;

R - resource capacity;

O - organizational capacity.

Each of these units is subdivided into several micro-units characterized by the corresponding indicators (Tables 1.3-1.7).

Algorithmic calculation matrices have been developed for each unit including calculation formulas and their algorithmic sequence. (Tables 1.8 - 1.12).

The final indicator is the aggregate integral result of reserves of intellectual capacity that is calculated by summing up the local results obtained in the course of calculations for each unit using algorithmic matrices:

$$C = \Sigma CH_{1.j} + \Sigma C\, S_{2.j} + \Sigma C\, I_{3.j} + \Sigma C\, R_{4.j} + \Sigma C\, O_{5.j},$$

where, C is an integral indicator of reserves for the growth of intellectual capacity;

$\Sigma CH_{1.j}$ - an integral indicator of reserves for the growth of human resources;

$\Sigma C\, S_{2.j}$ - integral indicator of growth reserves - scientific and technical capacity;

$\Sigma C\, I_{3.j}$ - integral indicator of information capacity growth reserves;

$\Sigma C\, R_{4.j}$ - integral indicator of reserves for the growth of resource capacity;

$\Sigma C\, Or_{5.j}$ - is an integral indicator of the reserves for the growth of organizational capacity.

Table 1.3

HR indicators of intellectual capacity

	Indicators	B – score	K – coefficient of importance	$Об$ – overall score
$H_{1.1}$	The total number of employees of the educational organization (without external part-time workers and working under contracts)	$B\,H_{1.1}$	$K\,H_{1.1}$	$Об\,H_{1.1} = B\,H_{1.1} * K\,H_{1.1}$
$H_{1.2}$	The total number of scientific workers (excluding external part-time workers and working under contracts)	$B\,H_{1.2}$	$K\,H_{1.2}$	$Об\,H_{1.2} = B\,H_{1.1} * K\,H_{1.2}$
$H_{1.3}$	The proportion of scientific and pedagogical workers (SPD) with a PhD in the total number of teaching staff	$B\,H_{1.3}$	$K\,H_{1.3}$	$Об\,H_{1.3} = B\,H_{1.1} * K\,H_{1.3}$
$H_{1.4}$	The proportion of scientific and pedagogical workers (SPD) with a DcS degree in the total number of teaching staff	$B\,H_{1.4}$	$K\,H_{1.4}$	$Об\,H_{1.4} = B\,H_{1.1} * K\,H_{1.4}$
$H_{1.5}$	The proportion of scientific and pedagogical workers (SPD) without an academic degree - up to 30 years old, PhD - up to 35 years old, DcS -	$B\,H_{1.5}$	$K\,H_{1.5}$	$Об\,H_{1.5} = B\,H_{1.1} * K\,H_{1.5}$

	up to 40 years old, in the total number of teaching staff			
$H_{1.6}$	The proportion of scientific and pedagogical workers (SPD) who defended their PhD and DcS dissertations in the reporting period in the total number of academic staff	$B\ H_{1.6}$	$K\ H_{1.6}$	$Об\ H_{1.6} = B\ H_{1.1} * K\ H_{1.6}$
			$\Sigma\ K\ H_{i.j}$	$\bar{Об}\ H_{i.j} = \Sigma\ Об\ H_{i.j} / 6$

Table 1.4

Scientific and technical indicators of intellectual capacity

Indicators		B – score	K –coefficient of importance	$Об$ – overall score
$S_{2.1}$	The number of publications of the organization, indexed in the information and analytical system of scientific citation Web of Science, per 100 academic staff	$B\ S_{2.1}$	$K\ S_{2.1}$	$Об\ S_{2.1} = B\ S_{2.1} * K\ S_{2.1}$
$S_{2.2}$	The number of publications of the organization, indexed in the information and analytical system of scientific citation Scopus, per 100 academic staff	$B\ S_{2.2}$	$K\ S_{2.2}$	$Об\ S_{2.2} = B\ S_{2.2} * K\ S_{2\,2}$
$S_{2.3}$	The number of publications of the organization indexed in the information and analytical system of scientific citation of the RSCI, per 100 academic staff	$B\ S_{2.3}$	$K\ S_{2.3}$	$Об\ S_{2.3} = B\ S_{2.3} * K\ S_{2.3}$
$S_{2.4}$	The total volume of research and development work (hereinafter R&D)	$B\ S_{2.4}$	$K\ S_{2.4}$	$Об\ S_{2.4} = B\ S_{2.4}\ K\ S_{2.4}$
$S_{2.5}$	The number of created results of intellectual activity that have legal protection outside of Uzbekistan	$B\ S_{2\,2.5}$	$K\ S_{2.5}$	$Об\ S_{2.5} = B\ S_{2.5} * K\ S_{2.5}$
			$\Sigma\ K\ S_{2.j}$	$\bar{Об}\ S_{2\,i.j} = \Sigma\ Об\ S_{2\,i.j} / 5$

Table 1.5

Information indicators of intellectual capacity

Indicators	B – score	K –coefficient of importance	$Об$ – overall score

$I_{3.1}$	Number of scientific journals, including electronic ones, published by the educational organization	$BI_{3.1}$	$KI_{3.1}$	$ОбI_{3.1} = BI_{3.1} * KI_{3.1}$
$I_{3.2}$	Availability of an electronic library system	$BI_{3.2}$	$KI_{3.2}$	$ОбI_{3.2} = BI_{3.2} * KI_{3.2}$
$I_{3.3}$	Distance learning system	$BI_{3.3}$	$KI_{3.3}$	$ОбI_{3.3} = BI_{3.3} * KI_{3.3}$
$I_{3.4}$	Availability of network programs	$BI_{3.4}$	$KI_{3.4}$	$ОбI_{3.4} = BI_{3.4} * KI_{3.4}$
$I_{3.5}$	Share of personal computers with Internet access	$BI_{3.5}$	$KI_{3.5}$	$ОбI_{3.5} = BI_{3.5} * KI_{3.5}$
$I_{3.6}$	Total number of publications per 100 academic staff	$BI_{3.6}$	$KI_{3.6}$	$ОбI_{3.6} = BI_{3.6} * KI_{3.6}$
			$\Sigma KI_{i.j}$	$\bar{О}бI_{i.j} = \Sigma ОбI_{3.j} / 6$

Table 1.6

Resource indicators of intellectual capacity

Indicators		B – score	K –coefficient of importance	$Об$ – overall score
$R_{4.1}$	Income of an educational organization from funds from income-generating activities per one teaching staff	$B\ R_{4.1}$	$K\ R_{4.1}$	$Об\ R_{4.1} = B\ R_{4.1} * K\ R_{4.1}$
$R_{4.2}$	Total area of buildings (premises)	$B\ R_{4.2}$	$K\ R_{4.2}$	$Об\ R_{4.2} = B\ R_{4.2} * K\ R_{4.1}$
$R_{4.3}$	Area of educational and laboratory buildings	$B\ R_{4.3}$	$K\ R_{4.3}$	$Об\ R_{4.3} = B\ R_{4.3} * K\ R_{4.3}$
$R_{4.4}$	Area dedicated to research units	$B\ R_{4.4}$	$K\ R_{4.4}$	$Об\ R_{4.4} = B\ R_{4.4} * K\ R_{4.4}$
$R_{4.5}$	Number of personal computers	$B\ R_{4.5}$	$K\ R_{4.5}$	$Об\ R_{4.5} = B\ R_{4.5} * K\ R_{4.5}$
$R_{4.6}$	Share of the cost of machinery and equipment (not older than 5 years) in the total cost of machinery and equipment	$B\ R_{4.6}$	$K\ R_{4.6}$	$Об\ R_{4.6} = B\ R_{4.6} * K\ R_{4.6}$
				$\bar{Об}\ R_{i.j} = \Sigma Об\ R_{4.j} / 6$

Table 1.7

Organizational indicators of intellectual capacity

Indicators	B – score	K –coefficient of importance	$Об$ – overall score

$Or_{5.1}$	Income of an educational organization from funds from income-generating activities per one teaching staff	$B\ Or_{5.1}$	$K\ Or_{5.1}$	$Об\ Or_{5.1} = B\ Or_{5.1} * K\ Or_{5.1}$
$Or_{5.2}$	Total area of buildings (premises)	$B\ Or_{5.2}$	$K\ Or_{5.2}$	$Об\ Or_{5.2} = B\ Or_{5.2} * KOr_{5.1}$
$Or_{5.3}$	Area of teaching and laboratory buildings	$B\ Or_{5.3}$	$K\ Or_{5.3}$	$Об\ Or_{5.3} = B\ Or_{5.3} * KOr_{5.3}$
$Or_{5.4}$	Area dedicated to research units	$B\ Or_{5.4}$	$K\ Or_{5.4}$	$Об\ Or_{5.4} = B\ Or_{5.4} * KOr_{5.4}$
$Or_{5.5}$	Number of personal computers	$B\ Or_{5.5}$	$K\ Or_{5.5}$	$Об\ Or_{5.5} = B\ Or_{5.5} * KOr_{5.5}$
$Or_{5.6}$	Share of the cost of machinery and equipment (not older than 5 years) in the total cost of machinery and equipment	$B\ Or_{5.6}$	$K\ Or_{5.6}$	$Об\ Or_{5.6} = B\ Or_{5.6} * KOr_{5.6}$
				$\bar{Об}\ Or_{i.j} = \Sigma\ Об\ Or_{5.j} / 6$

Table 1.8

Algorithmic matrix for calculating reserves for the growth of intellectual capacity (personnel unit)

	V – Actual volumes of intellectual capacity by micro-aggregates	***P*** – Sizes of micro-aggregates according to the maximum threshold value (***NH***)	***C*** – Reserves to reach the maximum threshold
$H_{1.1}$	$V_{1.1} = KH_{1.1} * \Sigma V_{i.j}$	$P_{1.1} = K\ H_{1.1} * \Sigma P_{i.j}$	$C_{1.1} = P_{1.1} - V_{1.1}$
$H_{1.2}$	$V_{1.2} = K\ H_{1.2} * \Sigma V_{i.j}$	$P_{1.2} = K\ H_{1.2} * \Sigma P_{i.j}$	$C_{1.2} = P_{1.2} - V_{1.2}$
$H_{1.3}$	$V_{1.3} = KH_{1.3} * \Sigma V_{i.j}$	$P_{1.3} = K\ H_{1.3} * \Sigma P_{i.j}$	$C_{1.3} = P_{1.3} - V_{1.3}$
$H_{1.4}$	$V_{1.4} = KH_{1.4} * \Sigma V_{i.j}$	$P_{1.4} = K\ H_{1.4} * \Sigma P_{i.j}$	$C_{1.4} = P_{1.4} - V_{1.4}$
$H_{1.5}$	$V_{1.5} = KH_{1.5} * \Sigma V_{i.j}$	$P_{1.5} = K\ H_{1.5} * \Sigma P_{i.j}$	$C_{1.5} = P_{1.5} - V_{1.5}$
$H_{1.6}$	$V_{1.6} = KH_{1.6} * \Sigma V_{i.j}$	$P_{1.6} = K\ H_{1.6} * \Sigma P_{i.j}$	$C_{1.6} = P_{1.6} - V_{1.6}$
	$\Sigma V_{1.j} = \bar{Об}H_{i.j} / (\bar{Об}H_{i.j} + \bar{Об}S_{i.j} + \bar{Об}I_{i.j} + \bar{Об}R + \bar{Об}H_{i.j})$	$\Sigma P_{1.j} = NH / (NH + NS + NI + NR + NOr)$	$\Sigma C_{1.j}$

Table 1.9

Algorithmic matrix for calculating reserves for the growth of intellectual capacity (scientific and technical unit)

	V – Actual volumes of intellectual capacity by micro-aggregates	***P*** – Sizes of micro-aggregates according to the maximum threshold value (***NS***)	***C*** – Reserves for reaching the maximum threshold value
$S_{2.1}$	$V_{2.1} = K\ S_{2.1} * \Sigma V_{i.j}$	$P_{2.1} = K\ S_{2.1} * \Sigma P_{i.j}$	$C_{2.1} = P_{2.1} - V_{2.1}$
$S_{2.2}$	$V_{2.2} = K\ S_{2.2} * \Sigma V_{i.j}$	$P_{2.2} = K\ S_{2.2} * \Sigma P_{i.j}$	$C_{2.2} = P_{2.2} - V_{2.2}$

$S_{2.3}$	$V_{2.3} = K S_{2.3} * \Sigma V_{i.j}$	$P_{2.3} = K S_{2.3} * \Sigma P_{i.j}$	$C_{2.3} = P_{2.3} - V_{2.3}$
$S_{2.4}$	$V_{2.4} = K S_{2.4} * \Sigma V_{i.j}$	$P_{2.4} = K S_{2.4} * \Sigma P_{i.j}$	$C_{2.4} = P_{2.4} - V_{2.4}$
$S_{2.5}$	$V_{2.5} = K S_{2.5} * \Sigma V_{i.j}$	$P_{2.5} = K S M_{2.5} * \Sigma P_{i.j}$	$C_{2.5} = P_{2.5} - V_{2.5}$
	$\Sigma V_{2.j} = \bar{O}\acute{o} S_{i.j} / (\bar{O}\acute{o}H_{i.j} + \bar{O}\acute{o}S_{i.j} + \bar{O}\acute{o}I_{i.j} + \bar{O}\acute{o}R_{i.j} + \bar{O}\acute{o}Or_{i.j})$	$\Sigma P_{2.j} = NS / (NH + NS + NI + NR + NOr)$	$\Sigma C_{2.j}$

Table 1.10

Algorithmic matrix for calculating reserves for the growth of intellectual capacity (information aggregate)

	V– Actual volumes of intellectual capacity by micro-aggregates	***P***– Sizes of micro-aggregates according to the maximum threshold value (***NI***)	***C***– Reserves to reach the maximum threshold
$I_{3.1}$	$V_{3.1} = KI_{3.1} * \Sigma V_{i.j}$	$P_{3.1} = KI_{3.1} * \Sigma P_{i.j}$	$C_{3.1} = P_{3.1} - V_{3.1}$
$I_{3.2}$	$V_{3.2} = KI_{3.2} * \Sigma V_{i.j}$	$P_{3.2} = KI_{3.2} * \Sigma P_{i.j}$	$C_{3.2} = P_{3.2} - V_{3.2}$
$I_{3.3}$	$V_{3.3} = KI_{3.3} * \Sigma V_{i.j}$	$P_{3.3} = KI_{3.3} * \Sigma P_{i.j}$	$C_{3.3} = P_{3.3} - V_{3.3}$
$I_{3.4}$	$V_{3.4} = KI_{3.4} * \Sigma V_{i.j}$	$P_{3.4} = KI_{3.4} * \Sigma P_{i.j}$	$C_{3.4} = P_{3.4} - V_{3.4}$
$I_{3.5}$	$V_{3.5} = KI_{3.5} * \Sigma V_{i.j}$	$P_{3.5} = KI_{3.5} * \Sigma P_{i.j}$	$C_{3.5} = P_{3.5} - V_{3.5}$
$I_{3.6}$	$V_{3.6} = KI_{3.6} * \Sigma V_{i.j}$	$P_{3.6} = KI_{3.6} * \Sigma P_{i.j}$	$C_{3.6} = P_{3.6} - V_{3.6}$
	$\Sigma V_{3.j} = \bar{O}\acute{o}I_{i.j} / (\bar{O}\acute{o}H_{i.j} + \bar{O}\acute{o}S_{i.j} + \bar{O}\acute{o}I_{i.j} + \bar{O}\acute{o}R_{i.j} + \bar{O}\acute{o}Or_{i.j})$	$\Sigma P_{3.j} = NI / (NH + NS + NI + NR + NOr)$	$\Sigma C_{3.j}$

Table 1.11

Algorithmic matrix for calculating reserves for the growth of intellectual capacity (resource aggregate)

	V – Actual volumes of intellectual capacity by micro-aggregates	***P***– Sizes of micro-aggregates according to the maximum threshold value (***NF***)	***C*** – Reserves to reach the maximum threshold
$R_{4.1}$	$V_{4.1} = K R_{4.1} * \Sigma V_{i.j}$	$P_{4.1} = K R_{4.1} * \Sigma P_{i.j}$	$C_{4.1} = P_{4.1} - V_{4.1}$
$R_{4.2}$	$V_{4.2} = K R_{4.2} * \Sigma V_{i.j}$	$P_{4.2} = K R_{4.2} * \Sigma P_{i.j}$	$C_{4.2} = P_{4.2} - V_{4.2}$
$R_{4.3}$	$V_{4.3} = K R_{4.3} * \Sigma V_{i.j}$	$P_{4.3} = K R_{4.3} * \Sigma P_{i.j}$	$C_{4.3} = P_{4.3} - V_{4.3}$
$R_{4.4}$	$V_{4.4} = K R_{4.4} * \Sigma V_{i.j}$	$P_{4.4} = K R_{4.4} * \Sigma P_{i.j}$	$C_{4.4} = P_{4.4} - V_{4.4}$
$R_{4.5}$	$V_{4.5} = K R_{4.5} * V_{i.j}$	$P_{4.5} = K R_{4.5} * \Sigma P_{i.j}$	$C_{4.5} = P_{4.5} - V_{4.5}$
$R_{4.6}$	$V_{4.6} = K R_{4.6} * V_{i.j}$	$P_{4.6} = K R_{4.6} * \Sigma P_{i.j}$	$C_{4.6} = P_{4.6} - V_{4.6}$
	$\Sigma V_{4.j} = \bar{O}\acute{o} R_{i.j} / (\bar{O}\acute{o}H_{i.j} + \bar{O}\acute{o}S_{i.j} + \bar{O}\acute{o}I_{i.j} + \bar{O}\acute{o}R_{i.j} + \bar{O}\acute{o}Or_{i.j})$	$\Sigma P_{4.j} = N R / (NH + NS + NI + NR + NOr)$	$\Sigma C_{4.j}$

Table 1.12

Algorithmic matrix for calculating reserves for the growth of intellectual capacity (organizational unit)

	V – Actual volumes of intellectual capacity by micro-aggregates	***P***– Sizes of micro-aggregates according to the maximum threshold value (***NF***)	***C*** – Reserves to reach the maximum threshold
$Or_{5.1}$	$V_{5.1} = K\,Or_{5.1} * \Sigma V_{i.j}$	$P_{5.1} = K\,Or_{5.1} * \Sigma P_{i.j}$	$C_{5.1} = P_{5.1} - V_{5.1}$
$Or_{5.2}$	$V_{5.2} = K\,Or_{5.2} * \Sigma V_{i.j}$	$P_{5.2} = K\,Or_{5.2} * \Sigma P_{i.j}$	$C_{5.2} = P_{5.2} - V_{5.2}$
$Or_{5.3}$	$V_{5.3} = K\,Or_{5.3} * \Sigma V_{i.j}$	$P_{5.3} = K\,Or_{5.3} * \Sigma P_{i.j}$	$C_{5.3} = P_{5.3} - V_{5.3}$
$Or_{5.4}$	$V_{5.4} = K\,Or_{5.4} * \Sigma V_{i.j}$	$P_{5.4} = K\,Or_{5.4} * \Sigma P_{i.j}$	$C_{5.4} = P_{5.4} - V_{5.4}$
$Or_{5.5}$	$V_{5.5} = K\,Or_{5.5} * V_{i.j}$	$P_{5.5} = K\,Or_{55} * \Sigma P_{i.j}$	$C_{5.5} = P_{5.5} - V_{5.5}$
$Or_{5.6}$	$V_{5.6} = K\,Or_{5.6} * V_{i.j}$	$P_{5.6} = K\,Or_{5.6} * \Sigma P_{i.j}$	$C_{5.6} = P_{5.6} - V_{5.6}$
	$\Sigma V_{5.j} = \bar{O}\acute{o}Or_{i.j} / (\bar{O}\acute{o}H_{i.j} + \bar{O}\acute{o}S_{i.j} + \bar{O}\acute{o}I_{i.j} + \bar{O}\acute{o}R_{i.j} + \bar{O}\acute{o}Or_{i.j})$	$\Sigma P_{5.j} = NOr / (NH + NS + NI + NR + NOr)$	$\Sigma C_{5.j}$

It is easy to calculate the cumulative integral result of the reserves for the growth of intellectual potential upon reaching the maximum threshold value at a given time based on the calculations presented in local matrices.

The novelty of our proposed assessment methodology lies precisely in the new system of indicators for assessing the intellectual capacity of universities, built in accordance with the proposed structure of capacity. This system of indicators, on the one hand, allows you to assess the current intellectual capacity of the organization, and on the other hand, it includes the most important indicators for each of the components of the intellectual capacity, which ensures the completeness and complexity of its assessment.

Thus, the integrated assessment of the intellectual capacity of universities according to the proposed methodology makes it possible to conduct a comparative analysis and obtain appropriate conclusions. The formed database allows you to consider the relationship of all characteristics of the activity universities, develop recommendations and identify trends in their development. This technique allows you to assess the intellectual capacity of an institution in many components, shows the relationship of all factors of intellectual capacity, which is its undoubted dignity.

Measuring elements of intellectual capacity that have not been quantified in the past will provide a clearer picture of the institution's ability to achieve its goals and innovate. The creation of a certain system for assessing intellectual capacity will provide not only measurement, but also subsequent strategic and operational management of capacity within the university. A quantitative assessment of the intellectual capacity will make it possible to form a long-term strategy of the organization in the ever-changing needs of the educational services market and can be used as a tool for rating assessment of the activities of universities in Uzbekistan.

The presented methodology makes it possible to assess universities by the amount of intellectual capacity, as well as by the components that determine it (personnel, scientific, resource, information, organizational potentials) and determine the strategy for the development of intellectual capacity in terms of growth reserves. In our opinion, the proposed model can find practical application in a comprehensive assessment of the intellectual capacity of a university, which is one of the rating indicators of its activities.

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