Support to strengthening the higher education system in Azerbaijan

Twinning project ENI/2018/395-401

MONITORING

THE HIGHER EDUCATION

SYSTEM DEVELOPMENT

in Azerbaijan

Report

Dr., prof. Tatjana Volkova
Dr. Rasa Pranskevičiūtė-Amoson

JUNE, 2020

Contents

Summary

The reference point for higher education system monitoring is the high level national and international policies and strategies related to the higher education and science and research development plans associated with it.

The main aim of monitoring higher education system development is to ensure that aims and targets set at national level and requirements set for the Bologna process are achieved and the higher education system itself is efficient and effective.

The Higher education development framework in Azerbaijan has been proposed as a basis for considering different elements of the system impacting HE development. The Framework is an open system and other elements could be added to it.

The samples mentioned in the Report are illustrative and could serve as a base for setting goals and requirements and associated KPIs based on the priorities of HE development of Azerbaijan for the next period to monitor the progress of HE system development.

Introduction

This report has been prepared as a part of the assigned activity:

COMPONENT 3: The quality assurance system is further developed to reflect the student-centeredness and competence-based approach of study programmes and related

Activity 3.2 Undertake capacity building activities for relevant stakeholders to enhance their accreditation-related capacities with the following benchmarks set for activity 3.2.2.:

1) Best practices from EU countries on the system of **monitoring the quality of higher education institutions** are shared, including **examples of KPI indicators**.

2) Best practices from EU countries on **collection of data, its analysis and visualization** (presentation through figures and graphics, in a reader-friendly format) are shared.

3) A **model** of monitoring quality of higher education institutions relying on a list of Key Performance Indicators **for Azerbaijanis** elaborated, considering best EU practices and the local context specificities.

The mission was performed during the period 3rd of June - 25th of June 2020.

The Mission report was prepared by:

Dr., prof. Tatjana Volkova, Latvia (BA School of Business and Finance)
Dr. Rasa Pranskevičiūtė-Amoson, Lithuania (The Government Strategic Analysis Center (STRATA))

1. Strategic priorities of national HE development in Republic of Azerbaijan

The monitoring of higher education system development is an overarching task as it must be delivered on different levels and for different objects and for different time periods.

The reference point for higher education monitoring is the high level national and international policies and strategies related to the higher education and development plans associated with it.

The Higher education system's strategic priorities in Azerbaijan are closely related to The National Strategy for the Development of Education in the Republic of Azerbaijan was approved on October 24, 2013.

According to the Ministry of Education of Republic of Azerbaijan "In accordance with the relevant provisions of the Law on Education and the Law on Civil Service of the Republic of Azerbaijan, the Development Concept "**Azerbaijan 2020: Vision of the Future**" and the "**National Strategy for the Development of Education in the Republic of Azerbaijan**", the main areas of activity of higher education and science are as follows:

- To participate in the process of formation of state policy on higher education.

- To participate in the preparation and implementation of the concept of development of the higher education system, to coordinate and control the implementation of these concepts by higher education institutions and their scientific structures within the scope of their authority.

The main tasks in the field of higher education:
- To create the necessary conditions required to meet the requirements of state and society for highly qualified specialists, to implement a unified state policy in the training process of personnel with higher education in higher education institutions of the Republic, regardless of their subordination and ownership form, and to provide control over the compliance of education with the legislation and state standards.
- To establish a legal and regulatory framework providing the activity and functions of the higher education system.
- To organize the preparation and approval of education programs in accordance with the requirements of state standards and programs.
- To provide control over the implementation of the credit system in higher education institutions.
- To participate in the preparation and implementation of state programs and projects in the field of higher education together with the relevant Ministries and other bodies.
- To determine the main directions of higher education and to take measures to improve the quality of training of specialists by considering modern demands of economy, science, technology, culture, and art.
- To predict a demand for higher education institutions in the country and to prepare proposals on rationalization of the network of education institutions.
- To provide control over the organization of teaching and the quality of education in higher education institutions by monitoring.

As a result of the implementation of the following functions, the regulation of activities in the field of higher education is provided:
- To prepare education programs in accordance with the "State standard and program" document and to submit them for approval
- To prepare proposals on the admission of students to higher education institutions
- To conduct analysis and monitoring in the field of higher education
- Learning, summarizing, and disseminating advanced experience in the field of higher education

- To identify the criteria for assessing the knowledge of students in higher education institutions and to provide control over the implementation of the credit system"[1].

As it follows from the World Bank Report (2018) "a clear division between education and science remains entrenched in Azerbaijan. Research is also carried out at HEIs, yet very few of them have sufficient capacity to pursue high-quality research". (see: "World Bank. 2018. *Azerbaijan: The Role of Higher Education in Innovation.* © World Bank", pp. 5-6). The World Bank highlights that "R&D in Azerbaijan is primarily carried by the public sector. Eighty-six percent of R&D is conducted by public research institutions, 9% by HEIs

---

1 Source: <https://edu.gov.az/en/page/60>.

and 5% by the private sector. Such distribution is in contrast with practice in developed economies in which the private sector is the main driver of R&D expenditures, followed by HEIs. Such R&D structure with a leading role for the public sector is common among less developed economies across the world. Structural change in this area requires active public policies promoting the cooperation between public research institutions, universities, and the private sector" (p. 8).

Therefore, the recognition of HEIs as main drivers of Research development and setting aims and KPIs for research development in HEIs are essential elements for ensuring higher education development. Within the institutional funding for R&D, most financing is channelled to fundamental (basic) research. At HEIs, 66% of R&D funds cover fundamental research compared to 34% of applied research. The percentage of applied research is even lower if all public R&D actors are considered—amounting to only 14%)". For example, the policy aim could be to increase the funding of applied research, the KPIs in this case could be by 20 % within 5 years. Another sample is based on the finding of World Bank that "Much of the knowledge produced in Azerbaijan does not get disseminated outside of the country" and setting the aim to increase dissemination of knowledge outside the country could be put in place followed by KPIs, e.g. by 15 % within 5 years. The other areas for development in the World Bank report mentioned is that "Applied research and technology transfer can be incentivized through the inclusion of the third mission's activities in researcher performance evaluations and career development. The criteria for recruitment, promotion, or performance evaluations of HEI staff should acknowledge industry and community engagement, commercialization of R&D results, and other knowledge exchanges" (p. 23). For these areas of development, the goals and KPIs could be elaborated on the system level.

These are underlying strategic priorities of Higher education sector development which set the stage for other elements of Higher education sector and also have to be monitored to ensure that progress is made in achievement of the aims set for Higher education sector development, including research development delivered by HEIs.

In the document, requirements and KPIs of Framework main elements are based on the experience of Latvia and Lithuania. The document as well contains Appendix 1 for better illustration of the aims.

2. The Higher Education Development Framework

For monitoring the progress of the higher education sector of the Republic of Azerbaijan the Higher Education Framework was developed by authors of the report (see below Figure 1). The Higher Education Framework consists of the following main elements: Strategic priorities set by National Strategy for the Development of Education in the Republic of Azerbaijan, National Science and Research policy and aims set, Bologna process implementation requirements, The action plan on the implementation of the National Strategy for the Development of Education in the Republic of Azerbaijan, State program on increasing international competitiveness of the HE system, HE institutions accreditation requirements and criteria, HE study programs licensing and accreditation requirements and criteria. The monitoring of achievements in all of those areas is an integral part of the Framework: monitoring the progress of Higher education system development includes monitoring of achievement of aims set in National Strategy for the Development of Education in the Republic of Azerbaijan, the achievement of Research performance aims, performance of HEIs, HE Quality monitoring, monitoring the performance of Graduates. The Higher Education Framework (further – Framework) is an open system and based on the system development new elements can be added (see Figure 1).

Figure 1 The Higher education development framework in Azerbaijan

Monitoring the HE system development in Azerbaijan, 2020
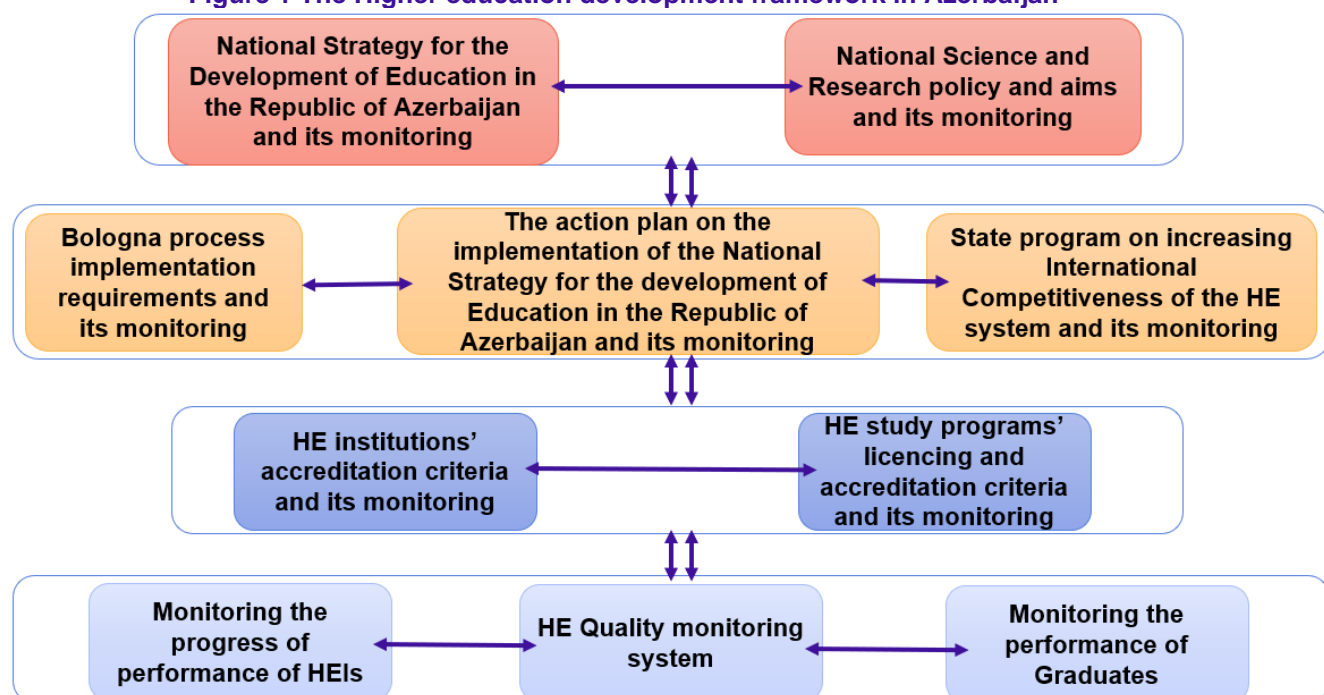
3. Performance Requirements and KPIs assigned

There are main requirements, aims of development are highlighted under each element of Framework. The illustrative samples of KPIs are provided whenever it is appropriate based on the experience of Latvia and Lithuania.

3.1. Bologna process implementation requirements

Azerbaijan has been an active member of **the Bologna Process** since 2005.

The main goals for the Bologna process set are to enhance International mobility, cooperation, and recognition, to ensure flexible learning paths/Inclusive and accessible HE, to increase Competitiveness of European HE.

One of the strategic target (3.5.) set by the Action Plan on the Implementation of the National Strategy for the Development of Education in the Republic of Azerbaijan is "Creation of new evaluation mechanisms covering all levels of stages in education based on advanced international experience and one of the measures under this target is 3.5.2. Ensuring the compliance of the evaluation mechanisms at higher education facilities with the Bologna process". Therefore, the development of the Quality monitoring system of the Bologna process would be beneficial.

The main activities have been introduced in Republic of Azerbaijan to meet the goals of Bologna process:
- The European Credit Transfer System (**ECTS**) – been implemented since 2005
- Diploma supplement (**DS**) – all HEIs awarded by unique DS since 2008
- **Three cycle HE system** by Education Law since 2009
- European Standards and Guidelines for **Quality Assurance** (**ESG**)
- **National Qualification Framework** (AzNQF) since 2018 (source Ministry of Education, Republic of Azerbaijan, 2019)[2].

The monitoring of implementation of the Bologna process, as well as other requirements could be further elaborated as a part of Higher education system development.

The Latvian case
In the Latvian case the following requirements and indicators have been set to monitor the progress of Bologna process implementation thus reflecting also the development of the Higher education system (see Table 1 below).

---

2 Source: <https://eu.daad.de/medien/eu.daad.de.2016/dokumente/service/veranstaltungen/2019/bologna-und-ehea/gurbanova_influence_of_bolognaprocess.pdf>

Table 1 Bologna process requirements and indicators in Latvia

Requirements	Indicators	Note: the case of Republic of Azerbaijan
Stage of implementation of the first and second cycle	**% of students studying in programs corresponding to the Bologna process:** At least 90% of students study in Bologna-compliant programs	n. a.
Next cycle access	**Percentage of first cycle programs providing access to at least one second cycle program:** A full first cycle qualification provides access to second cycle programs, and a full second cycle qualification provides access to at least one third cycle without significant transition issues.	n. a.
Implementation of the National Quality Framework	The framework has certified compliance with the European Higher Education Area (EHEA) Qualifications Framework	**National Qualification Framework** (AzNQF) since 2018 (source Ministry of Education, Republic of Azerbaijan, 2019)
Stage of implementation of the European Credit Transfer and Accumulation System (ECTS) Introduction of diploma supplements	All HE programs are awarded ECTS credits	The European Credit Transfer System (**ECTS**) – implemented since 2005
Introduction of diploma supplements	All graduates receive a diploma supplement in EU / CoE / UNESCO format free of charge and automatically	Diploma supplement (**DS**) – all HEIs awarded by unique DS since 2008
Openness to international quality assurance of agencies registered in the European Quality Assurance Register for Higher Education (EQAR)	All HEIs and HEI programs can choose to be evaluated by a foreign external quality assurance agency, according to national requirements.	n. a.
The external quality assurance system implementation stage	A fully functioning quality assurance system operates throughout the country. The Quality Assurance Agency has been successfully evaluated against the European Standards and Guidelines (ESG) by the EHEA. The quality system applies to all institutions and / or programs and covers the following key issues: 1. Teaching 2. Student support services 3. Internal quality assurance / management system.	n. a.
Involvement of students in the external quality assurance system	Students participate in quality assurance activities at five levels: 1. In the governance structures of national quality assurance agencies 2. As full members or observers of external evaluation teams 3. Preparation of self-assessment reports	n. a.

Monitoring the HE system development in Azerbaijan, 2020

	4. in the preparation of the external evaluation report 5. Follow-up procedures.	
International involvement in the external quality assurance system	The following four aspects are met: 1. Agencies are full members of ENQA and / or are included in the EQAR list 2. International experts participate in the management of national quality control organizations 3. International experts participate as participants / observers in the evaluation teams 4. International experts shall participate in the follow-up procedures.	n. a.
Measures to support the participation of disadvantaged students	Financial support for disadvantaged students or general education support with the necessary resources for more than 50% of students Quantitative policy objectives for the participation and / or education of disadvantaged students Monitoring the participation and educational attainment of disadvantaged students.	n. a.
Recognition of prior learning	The country has established procedures, guidelines or policies for the assessment and recognition of prior learning as a basis for: 1) access to higher education programs and 2) the award of credits to qualifications and / or exemptions from certain program requirements, and these procedures are widely used in practice.	n. a.
Portability of public grants or guaranteed loans	Full portability to the EHEA through all available national student support measures – grants and / or loans – in credit points and degree mobility. Equivalent requirements for government grants and / or loans if students study in their home country or abroad.	n. a.
Supporting the mobility of disadvantaged students	Financial mobility support for disadvantaged students or transferable grants for disadvantaged students or principal transferable grants awarded as required.	n. a.

Data source: Academic Information Center <http://www.aic.lv/portal/izglitiba-latvija/bolonas-process-latvija>.

3.2. The action plan on the implementation of the National Strategy for the development of Education in the Republic of Azerbaijan

The Action Plan on the Implementation of the National Strategy for the Development of Education in the Republic of Azerbaijan was approved by the Order of the President of the Republic of Azerbaijan, dated 19 January 2015. The Action Plan contains strategic targets and measures to be implemented.

The Action plan sets strategic targets and measures also for Lifelong learning (LLL) which are part of activities delivered by HEIs, therefore, the LLL activities delivered by HEIs are a part of higher education system development and the progress in this field has to be also monitored (see Table 2).

Table 2 The Action Plan on the Implementation of the National Strategy for the Development of Education in the Republic of Azerbaijan: strategic targets and measures set for HE

Specific target	Measures	KPIs (suggested)
3.3. Creation of a new system on ensuring quality of education	3.3.1. Preparation of quality standards and indexes for all stages and levels of education	Quality standards and associated KIPs cold be elaborated for all stages and levels of education
	3.3.2. Development of the draft National Qualification Framework on lifelong education	
	3.3.3. Approval of National Qualification Framework on lifelong education	
	3.3.4. Application of National Qualification Framework on lifelong education	
	3.3.5. Preparing proposals on creation of a legislative framework for organization of lifelong education and informal education and assessment of knowledge and skills of those who were educated this way	**Criteria and KPIs for** assessment of knowledge and skills for informal education could be elaborated
	3.3.6. Preparation and implementation of due mechanisms on recognition and application of international education programs	**Criteria and KPIs** on recognition and application of international education programs could be elaborated
	3.3.7. Creation of the rating system of an educational institution	Criteria and KPIs for the rating system of an educational institution could be elaborated.
	3.3.11. Creation and application of the stimulation mechanisms to improve quality and a grant system encouraging the innovative activity in education.	Criteria and KPIs of the stimulation mechanisms to improve quality and a grant system encouraging the innovative activity in education could be elaborated.
	3.3.12. Stimulation of sound competition among education programs, teaching resources, teaching methods, teachers, educational facilities and determination and application of competition elements.	Criteria and KPIs for Stimulation of sound competition among education programs, teaching resources, teaching methods, teachers, educational facilities and determination and application of competition elements could be elaborated.
3.4. Creation of information systems and a new reporting model for education management	3.4.1. Creation of the reporting, analysis and forecasting system based on the Information System and Student-Graduate system of Education Management for all stages of education and their regular updating.	Criteria and KPIs for Creation of the reporting, analysis and forecasting system of based on the Information System and Student-Graduate system of Education Management for all stages of education could be elaborated.
	3.4.2. Creation, updating and the use of databases and graduate coordination and information systems in the regulation process at education facilities.	Criteria and KPIs for creation, updating and the use of databases and graduate coordination and information systems in the regulation process at education facilities could be elaborated.

Monitoring the HE system development in Azerbaijan, 2020

	3.4.3. Creation and application of the regular labour market research system.	
3.5. Creation of new evaluation mechanisms covering all levels of stages in education based on advanced international experience	3.5.1. Creation and application of external and internal quality monitoring and evaluation mechanisms at educational institutions.	This measure could be integrated in the accreditation procedure of HEIs and at study programs levels.
	3.5.2. Ensuring the compliance of the evaluation mechanisms at higher education facilities with the Bologna process.	This measure could be integrated in the accreditation procedure of HEIs and at study programs level.
	3.5.3. Development of the students' progress monitoring and evaluation system, including internal school evaluation mechanisms in general education.	The criteria and KPIs for students' progress monitoring and evaluation could be elaborated.

Data source: The Action Plan on the Implementation of the National Strategy for the Development of Education in the Republic of Azerbaijan

3.3. State program on increasing International Competitiveness of the Higher education system

There is a State Program on Increasing the International Competitiveness of the Higher Education System in the Republic of Azerbaijan for 2019-2023 approved by the President of the Republic of Azerbaijan in 2018. The key target of the program is to train a new generation of specialists and modernize the content and quality indicators of Azerbaijani higher education system with an international double diploma program taking advantage of the cutting-edge scientific achievements and innovative teaching technologies.

The main goals set in the program are:

1. to study and to apply international practice in order to support the development of higher education institutions. Therefore, it is of special importance to apply for international double diploma programs in the Republic of Azerbaijan.
2. to engage with foreign teaching staff in the higher education institutions of the Republic of Azerbaijan through international double diploma programs.
3. to set up a system for improving the selection of the citizens of the Republic of Azerbaijan for doctoral studies and for getting them in direct contact with employers, as well as a monitoring system of educational achievements for the purpose of building academic capacity of local higher education institutions.
4. to expand opportunities for those who would like to do a PhD in prominent foreign higher education institutions with engaging employers on the basis of joint funding principle.

Monitoring the HE system development has also to include the monitoring of progress in these key areas.

The program highlights measures in 27 Key areas of the State Program.

For some of those areas KPIs are set. For example, establishment of initial 5 (five) international double diploma programs. For some areas in which the KPIS are not set, e.g., 3.2.4. Engagement of foreign teaching staff for renewal of curricula in higher education institutions of the Republic of Azerbaijan, where international dual diploma programs will be implemented. Therefore, to monitor the progress of HE system development, the relevant KPIs are necessary to be elaborated.

4. Accreditation criteria

4.1. Higher Education Institutions' accreditation criteria

The purpose of the external evaluation and accreditation is by referring to the conclusions of external evaluation to determine the quality of HEI activity, to create preconditions for improving HEI activity, to promote its quality culture, to inform the founders, the academic community and the public about the quality of HEI activities.

Table 3. Example: The evaluation areas and the indicators associated with them: the Lithuanian case

Evaluation areas	Indicators
Management area indicators	compliance of the HEI strategic plan with the mission, ensuring its implementation
	efficiency of HEI processes management
	publicity and the efficiency of management of information about the activity of the HEI
	efficiency of personnel management
	efficiency of financial and material resources management
Quality assurance area indicator	functionality and efficiency of the internal quality assurance system
Indicators of the area of study and science (art) activity	level of scientific (artistic) activity
	compatibility of study and science (art) activity and compliance with strategic activity goals
	internationality of studies, science (art)
Indicators for the impact on regional and national development	the effectiveness of the impact on regional and national development
	ensuring conditions for lifelong learning

Data source: (In Lithuanian) "Regarding the approval of the description of the procedure for external evaluation and accreditation of higher education institutions and branches of foreign higher education institutions, areas of evaluation and indicators" <https://www.e-tar.lt/portal/lt/legalAct/de28fb90224f11eabe008ea93139d588>.

When developing a methodological means for external evaluation of HEIs in Azerbaijan, it is important, that confirmed evaluation areas and indicators of HEIs are supplemented with evaluation criteria, where active organization of activity made by HEI itself is emphasized, as well as HEI's own self-monitoring and self-evaluation of results is being proceeded.

The Latvian case

The accreditation of a HEI/college aims at checking the quality of an institution's work organisation and resources because of which it is granted the status of a state-recognised higher education institution/college. A HEI/college may issue state-recognised diploma only if both the educational institution and the relevant study direction and the relevant study programme thereof are accredited (see Table 4).

Table 4. Example: The evaluation areas and the indicators associated with them: the Latvian case

Evaluation areas
The compliance of the qualification of the academic staff and visiting professors, associate visiting professors, visiting docents, guest lecturers and guest assistants with the requirements specified in the Law on Higher Education Institutions.
The compliance of the development policy and motivation system of the academic staff of the higher education institution or college with the objectives and tasks specified by the higher education institution or college.
The compliance of the study base, information base (including libraries), material and technical base and financial base with the conditions for the implementation of the study program.
Whether, in accordance with the Law on HEIs, HEIs or colleges, by implementing internal quality assurance systems, guarantee the continuous improvement, development and operational efficiency of the higher education institution or college, respect for the autonomy, funding and rights of students' self-government.
Whether the data accumulated in the education quality monitoring system of the higher education institution or college indicate the improvement and development of the activities of the higher education institution or college.
The compliance of the activities of the HEI or college with the requirements referred to in the regulatory enactments regulating higher education.
Whether the violations of regulatory enactments established by the competent authorities in the activities of the higher education institution or college during the previous year prior to the adoption of the decision have been eliminated within the term specified by these authorities.

Data source: State Regulations on accreditation of HEI and colleges, Cabinet of Ministers Rules No 794

4.2. Higher Education study programs licencing and accreditation criteria

The requirements and corresponding criteria study program licensing: the Latvian case (see Table 5) There are no specific KPIs elaborated for the study program licensing purposes, instead of that there are requirements for HEIs self-assessment report approved (see Table 5).

Table 5 The requirements and the corresponding criteria for study program licensing purposes: the Latvian case

Requirements	Criteria
The study program corresponds to the study direction in which it is planned to include it:	The development of the study program is justified and corresponds to the strategy of the university / college, the aim of the study program, tasks and planned study results are achievable and interrelated. External experts, lecturers, students, employers, etc. were involved in the study program development process.
	In the process of creating the study program, the performance indicators of the university / college, the dynamics of the number of students and tendencies, etc. have been analysed and considered.
	The study program corresponds to the trends of the industry in the countries of the European Union and in the world, the higher education institution / college has provided a justification for comparing the study program with the study programs of the respective higher education institutions / colleges, and the main conclusions are indicated.
	The development perspectives of the study program are analysed and substantiated.

Study base, information base (including library), financial base and material and technical base meet the conditions of study program implementation:	The study base, including the involved structural unit (department, group of professors, laboratory, institute, etc.) and the necessary support staff, is identified and complies with the conditions for the implementation of the study program.
	The informative and methodological base, databases, and literature available in the library comply with the conditions for the implementation of the study program.
	The financial base and costs of the study program are in accordance with the needs of the study program and the conditions of implementation, the sources of financing of the study program are identified and the financial resources ensure the implementation of the study program to achieve the study results.
	The material and technical base and its availability to students and teaching staff is in accordance with the specifics and implementation of the study program.
The content of the licensed study program and the implementation mechanism correspond to the aim of the study program, tasks and achievable study results:	The content of studies is topical and corresponds to the tendencies of the field and / or science, as well as complies with the requirements of the relevant regulatory enactments.
	The content of the study courses is mutually aligned and ensures the achievement of the results of the study courses and the study program.
	The study program implementation mechanism ensures the achievement of study results, including the principles of student-centred learning, the conditions for organizing student internships (if applicable) and the support provided to students is defined and integrated into the content of the study program (if applicable).
	The higher education institution / college has a quality assurance system, the principles of which are also observed in the licensed study program, as well as the standards of the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) Part 1 are observed.
	Students, graduates, employers and / or branch employers' organizations and other branch organizations are involved in the development of the study program and involvement is also planned in further improvement of the program (i.e. work with the results of student and employer surveys).
The qualification of the academic staff and visiting professors, associate visiting professors, guest docents, guest lecturers and guest assistants complies with the conditions for the implementation of the study program and the requirements of regulatory enactments:	The selection criteria of the teaching staff involved in the implementation of the study program are in accordance with the specifics of the study program and study courses.
	The qualification of the teaching staff ensures the achievement of the results of the study program.
	The higher education institution / college shall ensure the professional development of the teaching staff and the promotion of scientific research activities.
The study program complies with the requirements of the Law on Higher Education Institutions and other regulatory enactments.	
Violations of regulatory enactments identified by the competent authorities in the previous year before the date of the decision have been remedied within	

the time limit set by these authorities.	
Correspondence of facts.	The higher education institution / college provides a description of each criterion, preparing the information in accordance with the explanatory text in italics.

4.1.1. The external evaluation of study fields/study directions: Latvian and Lithuanian cases

The Latvian case

The **aim** of accreditation of a study direction is to determine the quality of the resources of a HEI or college and the ability to implement a study program corresponding to a certain study direction in accordance with the requirements of regulatory enactments. Accreditation of a study direction of a HEI or college entitles the HEI or college to issue a state recognized HE diploma for successful acquisition of a study program corresponding to the respective direction of study.

There are 29 study directions introduced in Latvia (see Table 6).

Table 6 List of study fields: the Latvian case

STUDY FIELDS
AGRICULTURE, FOREST MANAGEMENT, FISHING, VETERINARY MEDICINE AND FOOD HYGIENE
ARCHITECTURE AND CONSTRUCTION
ARTS
CHEMISTRY, CHEMICAL TECHNOLOGIES AND BIOTECHNOLOGY
ECONOMICS
EDUCATION, PEDAGOGY AND SPORTS
ENVIRONMENTAL PROTECTION
GEOGRAPHY AND EARTH SCIENCE
HEALTH CARE
HISTORY AND PHILOSOPHY
HOTEL AND RESTAURANT SERVICE, TOURISM AND RECREATION ORGANIZATION
INFORMATION AND COMMUNICATION SCIENCES
INFORMATION TECHNOLOGY, COMPUTER ENGINEERING, ELECTRONICS, TELECOMMUNICATIONS, COMPUTER MANAGEMENT AND COMPUTER SCIENCE
INTERNAL SECURITY AND DEFENCE
LANGUAGE AND CULTURAL STUDIES, NATIVE LANGUAGE STUDIES AND LANGUAGE PROGRAMMES
LAW SCIENCES
MANAGEMENT, ADMINISTRATION AND REAL ESTATE MANAGEMENT
MECHANICS AND METAL SCIENCE, HEAT POWER INDUSTRY, HEAT ENGINEERING AND MECHANICAL ENGINEERING
MILITARY DEFENCE
NATURAL SCIENCES
PHYSICS, MATERIAL SCIENCE, MATHEMATICS AND STATISTICS
POWER INDUSTRY, ELECTRICAL ENGINEERING AND ELECTRICAL TECHNOLOGIES
PRODUCTION AND PROCESSING
PSYCHOLOGY
RELIGION AND THEOLOGY
SOCIAL WELFARE
SOCIOLOGY, POLITICS AND ANTHROPOLOGY
TRANSLATION
TRANSPORT SERVICES

There are requirements and the corresponding criteria set for study direction accreditation in Latvia (see Table 7)

Table 7 The requirements and the corresponding criteria for study direction accreditation purposes: the Latvian case

Requirements	Criteria
Information about the higher education institution / college	
Description of the study field:	Management of the study field Effectiveness of the internal quality assurance system Resources and provision of the study field Scientific research and artistic creation Cooperation and internationalization Implementation of recommendations received in ex-ante evaluation procedures
Description of the study program "..."	Characteristics of the study program Content and implementation of studies Resources and provision of the study program Teaching staff Other documents at the discretion of the university / college

Data source: State Regulations for accreditation of higher education institutions, colleges, and fields of study <http://m.likumi.lv/doc.php?id=275560>.

The Lithuanian case

In Lithuania, the external evaluation of study fields, which shall be considered as the basis for accreditation of study fields, shall start to proceed in 2020. All study programmes of the same study field will be evaluated at the same time in all Lithuanian higher education institutions.

Until recently, starting from 1999-2000, external evaluation of study programmes has been carried out separately at the programme level.

External evaluation of study fields is carried out at least once every seven years.

During the evaluation and accreditation process, the first cycle, second cycle, integrated and professional studies of the study field shall be evaluated and accredited separately.

The quality of study field is assessed by points (in 5 point system) according to 7 areas of evaluation (see Table 8):

1. Study Objectives, Outcomes and Content
2. Links between science (art) and study activities
3. Student admission and support
4. Studying, academic achievement and graduate employment
5. Teaching staff
6. Study facilities and learning resources (material resources)
7. Study quality management and publicity.

Table 8. Areas of evaluation, objectives, indicators for study fields: the Lithuanian case

Areas and objectives for evaluation	Indicators
1. Study Objectives, Outcomes and Content	1.1.1. Evaluation of the correspondence of the goals and study results of the field and the cycle's study programs to the needs of the society and (or) labor market (does not apply to a HEI operating in exile conditions).

1.1. The studies of the field are based on the needs of the country's economy and society and the strategy of the institution. 1.2. The studies of the field comply with the requirements of legal acts, the structure, content, teaching / assessment methods of the programs enable students to achieve the study goals and results.	1.1.2. Evaluation of the correspondence of the goals of the field and the cycle's study programs, as well as, study outcomes to the mission, activity objectives and strategy of the institution. 1.2.1. Evaluation of the compliance of the field and the cycle's study programs to the requirements of legal acts. 1.2.2. Evaluation of the compatibility of study objectives, study outcomes, teaching (studying) of the field and the cycle's study programs to evaluation methods. 1.2.3. Evaluation of the totality of subjects (modules) of the field and the cycle's study programs, ensuring the student's consistent (self)development of competencies. 1.2.4. Evaluation of possibilities for students to individualize the structure of study programs of the field by taking into account personal learning objectives and intended study outcomes. 1.2.5. Evaluation of the compliance of the final theses with the requirements of the field and the cycle's study/the degree.
2. Links between science (art) and study activities 2.1. Studies in the field integrate the latest achievements of science (art) and (or) technology, there are created conditions for the development of students' abilities to carry out scientific (art) activities.	2.1.1. Evaluation of the adequacy of the level of scientific (applied science, art) activities carried out by the higher school in the field of science (art) related to the field of study. 2.1.2. Evaluation of linking study content with the latest scientific, artistic and technological achievements. 2.1.3. Evaluation of creating conditions for students to engage in scientific (applied science, art) activities corresponding to the study cycle.
3. Student admission and support 3.1. The process of student selection and admission is consistent with the study outcomes of the field. 3.2. There is an effective support system for students in the field of study, enabling them to achieve maximum learning progress.	3.1.1. Evaluation of the suitability and publicity of student selection and admission criteria and process. 3.1.2. Evaluation of the procedure for the recognition of foreign qualifications, part-time studies and previous non-formal and informal learning and its application. 3.2.1. Evaluation of conditions for ensuring academic mobility of students. 3.2.2. Evaluation of the suitability, adequacy and effectiveness of academic, financial, social, psychological and personal support provided to students in the field. 3.2.3. Evaluation of the adequacy of information about studies and student counseling.
4. Studying, academic achievement and graduate employment 4.1. The field of Study prepares students for independent professional activities. 4.2. There is an effective and transparent system of assessment of students'	4.1.1. Evaluation of the teaching and learning process that allows the needs of students to be taken into account and enables them to achieve the intended learning outcomes. 4.1.2. Evaluation of conditions ensuring opportunities to study for socially vulnerable groups and students with special needs. 4.2.1. Evaluation of the systematic monitoring of students' study progress and the feedback provided to students, which promotes self-assessment of the achieved results and further planning of study progress.

achievements, monitoring of progress and ensuring academic ethics in the field of study.	4.2.2. Evaluation of the feedback provided to students during the studies, which promotes self-assessment of the achieved results and further planning of study progress.
	4.2.3. Evaluation of proceeded monitoring in the field of study on graduates' employment and career.
	4.2.4. Evaluation of the implementation of the policy of ensuring academic ethics, tolerance and non-discrimination.
	4.2.5. Evaluation of the effectiveness of the provision of appeals, complaints regarding the study process and the application of examination procedures in the field of study.
5. Teaching staff 5.1. The academic staff of the field of study is suitable to ensure the achievement of the study outcomes of study programs in the field of study. 5.2. Lecturers of the study field are provided with conditions for the improvement of competencies, these conditions are periodically assessed.	5.1.1. Evaluation of adequacy of number, qualification and competence (scientific, didactic, professional) of lecturers working in the institution within the study programs(s) of the study field to achieve the study outcomes. 5.2.1. Evaluation of conditions for ensuring the academic mobility of lecturers, teaching subjects in the field of study (does not apply to the assessment of the studies of a higher education institution operating in exile conditions). 5.2.2. Evaluation of conditions for improving lecturers' competencies.
6. Study facilities and learning resources (material resources) 6.1. The physical, informational and financial resources of the field studies are sufficient and allow to achieve the expected study outcomes.	6.1.1. Evaluation of the suitability and sufficiency of the physical, informational and financial resources of the field studies that allow to ensure an effective learning process. 6.1.2. Evaluation of planning and renewal of resources required for the implementation of field studies.
7. Study quality management and publicity 7.1. The improvement of the field studies is based on an internal quality assurance system involving all stakeholders, as well as continuous monitoring and public dissemination.	7.1.1. Evaluation of the effectiveness of the studies internal quality assurance system. 7.1.2. Evaluating the effectiveness of involving social stakeholders (students and other stakeholders) in internal quality assurance. 7.1.3. Evaluation of the collection, use and public dissemination of information about studies, processes and results of their assessment and improvement. 7.1.4. Evaluation of students' feedback about the quality of studies in the higher school.

From January 1, 2025 it is planned to start the evaluation of the field by applying a threshold for the assessment indicator before commencing the external evaluation of studies. The purpose of this indicator is to determine whether sufficiently high level of research and experimental development or artistic activities is carried out at the University, which provides the prerequisites for the studies based on it.

Monitoring the HE system development in Azerbaijan, 2020

5. Monitoring of Higher education system development

The monitoring of higher education system development takes place on different levels and directions:

1. Monitoring the achievement of goals and targets set in national planning documents
2. Monitoring the progress of performance of HEI: the main aim is to systematically collect, analyse and prepare information on the activities of HEIs and their changes; to identify trends in the activities of higher education institution (the Lithuanian case)
3. Higher education quality monitoring system (the Latvian case)
4. Monitoring the performance of graduates
5. Other

Monitoring the progress of performance of HEI (the Lithuanian case), Higher education quality monitoring system (case of Latvia) and Monitoring of performance of graduates (the Latvian case) are presented below.

5.1. Monitoring the progress of performance of Higher education institutions

The main aim of Monitoring the progress of performance of HEI is to systematically collect, analyse and prepare information on the activities of HEIs and their changes; to identify trends in the activities of HEI (the Lithuanian case).

The **object** of monitoring the progress of HEIs consists of:
1. general characteristics of HEIs
2. characteristics of students and studies
3. characteristics and performance of the research staff of HEIs
4. characteristics of teaching and administrative staff
5. financial characteristics
6. characteristics of the process of graduates' transition from studies to the labour market.

The **aim** of monitoring the progress of HEIs is to systematically collect, analyse and prepare information on the activities of Azerbaijanian HEIs and their changes; to identify trends in the activities of higher education institutions.

The information can be used:
1. to identify the strengths and problem areas of HEIs
2. to identify the need for further research to propose public policy measures to ensure the progress of HEIs in their areas of strength
3. to identify the need for additional research that would allow proposing public policy measures to solve the problems of HEIs
4. to initiate the necessary systemic changes in HEIs.

According to the object of monitoring, the indicators can be divided into six groups (see Table 9), reflecting:

Table 9. Example: Indicators for monitoring the progress of HEIs (universities and colleges)

Groups of indicators	Data used
1. general characteristics of HEIs	number of students and doctoral students, number of positions held by lecturers, researchers, heads with administrative staff
2. characteristics of students and studies of HEIs	characteristics of the study program, change in the number of enrolments; scoring of enrolments in HEIs; share of dropouts; potential socio-economic role of institution in a region; internationalization of studies
3. characteristics of research staff of HEIs and results of performance	ratio of the number of positions occupied by researchers to the number of positions occupied by lecturers; number of doctoral students per researcher position; assessment of benchmarking; income of university from R&D
4. characteristics of teaching and administrative staff	data on participation of lecturers and administrative staff in the activities of the institution, qualification of lecturers, age profile, structure of staff
5. financial characteristics	financial data on salaries, studies, R&D
6. characteristics of the process of graduates' transition from studies to labour market	employment status of students and graduates (employed, continuing studies, unemployed, etc.), data on salaries of employed ones

Data source: A methodical means for monitoring the progress of activities of Higher Education institutions in Lithuania. STRATA project "Development and Implementation of a System for Monitoring and Evaluating the Progress of Science and Studies"

The indicators consist of indicators for monitoring the progress of universities (28 indicators) and indicators for monitoring the progress of colleges (22 indicators) (see Table 10).

Table 10. University indicators according to institutions, groups of study fields and science fields in Lithuania*

Groups of indicators	Description	Examples of indicators
General indicators	The group consists of general KPIs for monitoring the activities of HEI, which collect, analyse and provide information on the number of participants in the activities of the institution and their changes. These indicators include the total number of students and lecturers, administration and other staff, doctoral students and researchers, reflect the size of the institution, the profiles of study fields and science fields. Indicators according to institutions, groups of study fields.	1. Number of students 2. Number of full-time academic staff 3. Number of PhD students 4. Number of full-time research staff 5. Number of full-time non-academic staff (heads and administrative staff)
I. Students: preparation and participation in studies	The group of KPIs for monitoring the activities of HEIs, the indicators of which collect, analyse and provide information on the preparation and participation in the study process by students of a particular institution, as well as the change in these indicators. Indicators according to institutions and groups of study fields.	6. Change in the number of study entrants 7. Average grade score of study entrants enrolled in HEI 8. Proportion of students in study programs / study fields accredited for the maximum period 9. Proportion of non-dropouts to all students

Monitoring the HE system development in Azerbaijan, 2020

II. Internationali sation of studies	A group of KPIs for monitoring the activities of HEI, the indicators of which collect, analyse and provide information on the internationalization of the institution's studies and their change: the participation of students and lecturers in exchange programs, as well as full-time enrolment of international students. Indicators according to institutions and groups of study fields.	10. Proportion of foreign nationals, who have come to the full study program, to all students 11. Ratio of academic lecturers who came to lecture according to the exchange programs to the full-time positions occupied by academic staff 12. Proportion of outgoing student exchanges per student
III. Research	A group of KPIs for monitoring the activities of HEI, the indicators of which collect, analyse and provide information on the research of the institution's studies and their change.	13. Ratio of the number of full-time positions occupied by researchers to the number of full-time positions occupied by lecturers 14. Number of PhD students per researcher's full-time position 15. Estimate of the ongoing assessment of international benchmarking 16. The ratio of the university's income from R&D to the total payments to the university by legal entities and physical persons
IV. Staff: academic and non-academic	A group of KPIs for monitoring the activities of HEI, the indicators that collect, analyse and provide information on the participation of institution staff - lecturers and administration - in the activity of the institution, change in participation: qualification of lecturers, age, structure of staff. Indicators according to institutions and groups of study fields.	17. Proportion of academic staff with PhD (recognized artist) qualification 18. Ratio of full-time academic staff to the total number of academic staff 19. Number of full-time academic staff positions per one student 20. Ratio of full-time positions occupied by academic staff (lecturers together with researchers) to full-time positions occupied by non-academic staff (administration staff together with heads) 21. Proportion of full-time academic staff aged up to 55 years
V. Financial data: salaries, studies, R&D	A group of KPIs for monitoring the activities of HEI, the indicators that collect, analyse and provide information on the institutions' expenditures on studies, research, and salaries of academic staff. Indicators according to institutions.	22. Ratio of the gross salary of the teaching staff to the gross salary of the total staff of the institution 23. Proportion of study expenditure to total expenditure 24. Proportion of research expenditure to total expenditure
VI. Graduates in labour market	A group of KPIs for monitoring the activities of HEI, the indicators of which collect, analyse and provide information on the participation of graduates of institutions in the labour market and its change. Indicators according to institutions and groups of study fields.	25. Proportion of first-cycle graduates working in at least one workplace in 1-3 main occupational groups of the Lithuanian Classification of Occupations out of all working graduates (12 months after graduation) 26. Proportion of second-cycle, full-time and vocational graduates working in 1-2 main occupational groups of the Lithuanian Classification of Occupations out of all working graduates (12 months after graduation) 27. Average monthly insured income of employed graduates

		28. Proportion of graduates not registered as unemployed at the Lithuanian Employment Service out of all graduates (12 months after graduation)
		29. Proportion of graduates who have completed the first cycle studies and continue their studies in the second cycle studies

For more detailed information on learning practices from Lithuania on data collection, analysis and visualization regarding HEIs performance indicators please look at the Annex 1 "List of KPIs (Lithuania). A methodical means for monitoring the progress of activities of Higher Education institutions in Lithuania". STRATA project "Development and Implementation of a System for Monitoring and Evaluating the Progress of Science and Studies". Examples of information on interactive data collection, analysis and visualization on the website of STRATA might be considered for your attention as well <https://rodikliai.strata.gov.lt/?lang=en&kpi_type=nlevel&kpi_group=3>.

5.2. Higher Education Quality monitoring system

One of the strategic target (3.5.) set by the Action Plan on the Implementation of the National Strategy for the Development of Education in the Republic of Azerbaijan is **"**Creation of new evaluation mechanisms covering all levels of stages in education based on advanced international experience and one of the measures under this target is 3.5.1. Creation and application of external and internal quality monitoring and evaluation mechanisms at educational institutions.

There is a Quality monitoring system under development in Latvia. The main aim of Higher education quality monitoring system is:
   • To create a tool for monitoring the implementation of a public contract (the parties higher education system and society).
   • To support the quality improvement of the higher education sector (compliance with objectively determined requirements and responsiveness to the needs of stakeholders).
   • To provide a framework for the setting of measurable targets and a mechanism for monitoring the achievement of these targets, (both in the long term and on the basis of indicators that can indicate progress towards the long-term goals of higher education in the medium and short term).

The main tasks of quality monitoring system are:
   • To assess whether the quality objectives of higher education are and will be achieved
   • To analyse and evaluate causal relationships between measurable results, indicators, and long-term goals today
   • To make sure that the set indicators (quantitative and qualitative) are achieved and to determine the necessary corrective actions to ensure the achievement of the set goals
   • To provide information for making an informed decision on the allocation of resources between the higher education system and other needs, as well as within the higher education system itself
   • To provide information to inform the public about the use of its resources in the higher education system.

There are quality dimensions and KPIs elaborated under the Quality monitoring system (Table 11).

Table 11 The Higher education quality dimensions and KPIs applied: the Latvian case

Quality dimensions	KIPs for monitoring quality
	Number of students
	Results of students' centralized exams
	Demographic structure of students
Academic staff	Proportion of doctors
	Ratio of academic staff to number of students
	Professional development activities
	Age structure of the academic staff
	Involvement of master students, doctoral students, new doctors in academic work
Resources	Funding per student
	Capital investment as a share of total expenditure
	Area of study rooms
	Infrastructure quality
Study and study work	Number and proportion of graduates
	Graduates who continue their studies in the next cycle
	Reasons for termination of studies
	Proportion of diplomas obtained on time
	Students' evaluation of the quality of studies
Learning outcomes	Unemployment rate of graduates
	Employment in the field of studies
	Employment at the level corresponding to the qualification
	Average salary of graduates
	Number of enterprises established by graduates
	Number of *awarded* final theses
	Studies impact indicator
Research and artistic creation	Number of scientific publications
	Citation of publications
	Proportion of top 10% of cited publications
	Student research
	Involvement of students in research
	Income from scientific activities
	Number and financing of artistic works
	Total research productivity
Cooperation and internationalization	Joint publications with industry
	Patents & patents normalized
	Patents developed in collaboration with industry
	Spin-off numbers
	Revenues from the private sector
	Study programs in a foreign language
	Study programs that award joint degrees in cooperation with foreign partners
	Proportion of foreign teaching staff
	International joint publication
	Mobility of incoming students
	Outgoing student mobility
	Mobility of academic staff
Management structure	Student's involvement on governance structures
	Employers involvement
Strategy	Link with the work environment
	Income from lifelong learning activities
Regulatory framework	Measures to ensure equal access
	Internal operating conditions of a higher education institution

5.3. Monitoring the performance of Graduates

The Latvian case

According to the Ministry of Education and Science graduates have been monitored by the Ministry of Education and Science in cooperation with the Central Statistical Bureau. The collection and analysis of such data is a common global practice, and the principles of monitoring Latvian graduates are in line with the European Commission's recommendations on the identification of graduates. The procedure for obtaining, exchanging, and publishing information is specified in the regulations of the Cabinet of Ministers "Regulations of the State Education Information System"[3].

The monitoring of the performance of graduates is introduced in Latvia (see Table 12). The first results were obtained for year 2017 and were recently shared by the Ministry of Education and Science.

Table 12. Example: the KPIs for monitoring the performance of Graduates: the Latvian case

Indicator
Number of employed
Number of unemployed and job seekers
Number of economically inactive persons
Number of emigrants
Average monthly income
Employment sector
Profession
Number of graduates in regions

Data source: Ministry of Education and Science of Latvia,
<https://izm.gov.lv/images/izglitiba_augst/Absolventu_monitorings_1_raksts_1206_final.pdf>.

The Lithuanian case

The characteristics of the process of graduates' transition from studies to the labour market involve data such as employment status of students and graduates (employed, continuing studies, unemployed, etc.), data on salaries of employed ones, etc. There is presented below an example of a group of KPIs with the indicators of which collect, analyse, and provide information on the participation of graduates of institutions in the labour market and its change (see Table 13).

Table 13. Example: the KPIs for monitoring the performance of Graduates: the Lithuanian case

Type of institution	Indicators
Universities	1. Proportion of first-cycle graduates working in at least one workplace in 1-3 main occupational groups of the Lithuanian Classification of Occupations out of all working graduates (12 months after graduation) 2. Proportion of second-cycle, full-time and vocational graduates working in 1-2 main occupational groups of the Lithuanian Classification of Occupations out of all working graduates (12 months after graduation)

---

3 Source: <https://izm.gov.lv/lv/aktualitates/4134-absolventu-monitoringa-pirmie-dati-apliecina-parmainu-nepieciesamibu-augstakaja-izglitiba>.

	3. Average monthly insured income of employed graduates
	4. Proportion of graduates not registered as unemployed at the Lithuanian Employment Service out of all graduates (12 months after graduation)
	5. Proportion of graduates who have completed the first cycle studies and continue their studies in the second cycle studies
Colleges	20. Proportion of graduates working in at least one workplace in 1-3 main occupational groups of the Lithuanian Classification of Occupations out of all working graduates (12 months after graduation)
	21. Average monthly insured income of employed graduates
	22. Proportion of graduates not registered as unemployed at the Lithuanian Employment Service out of all graduates (12 months after graduation)

Data source: A methodical means for monitoring the progress of activities of Higher Education institutions in Lithuania. STRATA project "Development and Implementation of a System for Monitoring and Evaluating the Progress of Science and Studies"

For more detailed information on learning practices from Lithuania on data collection, analysis and visualization regarding the monitoring performance of graduates indicators please look at the Annex 1 "List of KPIs (Lithuania). A methodical means for monitoring the progress of activities of Higher Education institutions in Lithuania". STRATA project "Development and Implementation of a System for Monitoring and Evaluating the Progress of Science and Studies". Examples of information on interactive data collection, analysis and visualization on the website of STRATA might be considered for your attention as well <https://rodikliai.strata.gov.lt/?lang=en&kpi_type=nlevel&kpi_group=3>.

6. Part 2. Additional information requested. 2020 06 25.

Based on Mr Nariman Gahramanli additional request please find below the information regarding:
1. Ratios for benchmarking HE performance
2. Surveys of students and stakeholders and how they are taken into account for accreditation purposes and performance monitoring
3. Experience on "rating system"
4. Online platforms development (samples)
5. Guidance on Quality management system.

1. Ratios for benchmarking HE performance

Introduction

Benchmarking aims to improve the organization's performance by learning about possible improvements by comparing these processes with other better-performing organizations and emerged as another complementary approach to contribute to making sense of how universities are improving performance towards being autonomous institutions acting in environments of growing complexity. A growing number of universities have started to use data compiled from rankings and other sources available for the purpose of benchmarking exercises that in turn feed into institutional strategic planning to start to use data purposely to drive development agenda. Benchmarking could be applied as a tool to advance HE system development, as well as on the level of the HEIs as a way to improve quality of performance. It would be beneficial to provide financing for training of HEIs top-management on how to apply this tool for the benefits of institutions and for the broader society.

There is some evidence that successful benchmarking is much more likely to take place in those organizations that are already relatively well managed and with a strong emphasis on continuous improvement philosophy and innovation. It is also likely to be less effective in individualistic or centralized cultures where the long term commitment for benchmarking is unlikely to be found.

However, as interest in benchmarking grows, the potential within the public sector to benchmark universities is almost certain to be considered by governments and funding bodies. It is not impossible that the development might occur of compulsory institutional participation in benchmarking. Although such an approach might be resisted by both benchmarking specialists and many of the universities concerned, such a compulsory approach would be consistent with the imposition of other quality management and assurance mechanisms in many HE systems.

Due to the dual role of benchmarking: as a tool and as a process there are diverse benefits of benchmarking as well.

Benefits of benchmarking:

- Effective decision-making is evidence-based.
- Benchmarking enables the structured sharing of ideas and good practices on institutional strengths and weaknesses.
- Benchmarking helps reach out in a more efficient way to a variety of internal and external stakeholders, making better decisions for institutional developments.
- It helps raise awareness, visibility, institutional profile, reputation and gain a strong competitive advantage.
- Benchmarking accelerates improvements and delivers innovation.
- Provides insight of how other organizations organize their operations and processes.
- Increases the awareness of your level of performance compared to your peers.
- Facilitates cooperation between staff.

Benchmarking does not necessarily provide solutions to problems – it is an aid to judgment rather than a substitute for it. The data being used may be accurate and worthy of comparison, any *subsequent interpretation* needs to take account of the particular context applying to the comparators concerned.

There are number of reasons why benchmarking could be applied as it:

- helps to establish effective goals and measures performance
- encourages striving for excellence, breakthrough thinking, and innovation.
- emphasizes sensitivity to changing stakeholders (internal and external) needs.
- creates a better understanding of peers and the dynamics of the HEI.
- provides a sense of urgency for management and governance process improvement.
- ensures that the best practices are included in work processes.

Benchmarking could be delivered for different purposes: internal/external, functional, generic, competitive and collaborative.

Internal benchmarking:

- comparisons are made of the performance of different departments, campuses or sites within a university
- to identify best practice in the institution, without necessarily having an external standard against which to compare the results

This type may be particularly appropriate to universities where a high degree of devolvement exists to the constituent parts of the institution, where a multi-campus environment exists, or where extensive franchise arrangements exist whereby standard programs are taught by a number of partner colleges in different locations.

External benchmarking is applied for comparisons of performance in key areas is based upon information from institutions which are seen as "best in the class" or "*competitors*" and may be run by the institutions themselves on a collective basis or to compare the performance of HE systems in comparison with other countries. By applying external benchmarking there are higher possibilities of finding the best practices.

Generic benchmarking is about comparing your University to some **generic (or 'gold') standards**, which would indicate that your University is a learning organization, you would be using generic benchmarking.
It is carried out usually by managers of functional departments who find it useful to analyze how well their functional area performs compared to functional areas of other universities in a selected number of activities. It is quite easy to identify the best strategic management, marketing, finance, human resource, real estate, library, research, internationalization or IT departments in other universities that excel in what they do and to apply their practices to your own functional area.

'Implicit benchmarking' is likely to increase in future years as governments and central funding agencies seek to apply benchmarking approaches to universities, e. g. Research excellence initiative in Germany, UK and other countries.

Here are some samples from international practise for generic benchmarking:

Snowball metrics have been developed by ELSEVIER to serve as a Global standards for institutional benchmarking regarding research performance (see Figure 1 Snowball metrics: Global standards for institutional benchmarking (source: <https://www.elsevier.com/__data/assets/image/0005/33359/Snowball-Metrics-landscape.jpg>).

Snowball Metrics

GLOBAL STANDARDS FOR INSTITUTIONAL BENCHMARKING

Search this site ▷

HOME	BENEFITS	METRICS	REPORTS	CONTACT US

Snowball Metrics

Snowball Metrics is, crucially, a bottom-up initiative. It is owned by research-intensive universities around the globe, to ensure that its outputs are of practical use to them, and are not imposed by organizations with potentially distinct aims such as funders, agencies, or suppliers of research information.

The universities aim to agree on methodologies that are robustly and clearly defined, so that the metrics they describe enable the confident comparison of apples with apples. These metrics are data source- and system-agnostic, meaning that they are not tied to any particular provider of data or tools. The resulting benchmarks between research-intensive universities provide reliable information to help understand research strengths, and thus to establish and monitor institutional strategies.

The aspiration is for these metrics to become global standards that enable institutional benchmarking, and to cover the entire spectrum of research activities.

The agreed and tested methodologies are available free-of-charge to be used by any organization:

Download factsheet   Download 2014 recipe book   View online page turner

Watch this short introduction to Snowball Metrics, recorded by Dr Malcolm Edwards, Head of Planning and Resource Allocation at the University of Cambridge.

Snowball Metrics Recipe Book
Learn more

Snowball Metrics Success Rate
Learn more

UNIVERSITY OF KENTUCKY®
Institutional Research & Advanced Analytics

Home

Fact Booklet

Fast Facts

Student Data

Faculty Data

Staff Data

Benchmark Comparisons

Current Benchmarks Identified by the University Review Committee
Faculty Benchmark Comparisons
Tuition and Fees Benchmark Comparisons   >

Data Archive

Institutional Research Briefs

Resources & Support

What We Do

Contact Us

Common Data Set

Tuition and Fees Benchmark Comparisons

Students looking for tuition information should visit The Office of the Registrar Tuition's Schedule/Fee Payment Instructions

Ten-Year Benchmark Tuition Comparisons

- Undergraduate Tuition and Fees, In-State Resident
- Undergraduate Tuition and Fees, Out-of-State Resident
- Graduate Tuition and Fees, In-State Resident
- Graduate Tuition and Fees, Out-of-State Resident

Source: <http://www.uky.edu/iraa/content/tuition-and-fees-benchmarkcomparisons>.

Monitoring the HE system development in Azerbaijan, 2020

Functional benchmarking: Research management and knowledge transfer

Benchmarking of research activity is widespread, undertaken at the level of inputs, outputs and grant awards. Full economic costing has also provided a potential resource of comparable data. Some HEIs have Research Management Systems to monitor and manage their research activity, thus allowing for available management information. The research-intensive HEIs share application and award data at institutional level on a collaborative and confidential basis.

There are 3 major types of benchmarking:

- Strategic – long term view, identifying and applying best approaches to set strategic directions
- Performance – electing areas of measurement, iIdentifying indicators of measurement and measuring achievements for improvement
- Process – finding and application of best practises in key processes

Performance benchmarking

While delivering performance benchmarking the following questions have to be considered:
- What and why are we measuring?
- Why are those areas of measurement relevant to a particular university or system?
- What kind of indicators to select?
- Are those indicators relevant?

Most popular areas of benchmarking are: Teaching and learning, Research, Service to community, Knowledge transfer; Internationalization, etc. The most popular *performance metrics indicators* could be found in different rankings of HEI, e.g. <https://www.hesa.ac.uk/benchmarking_report_nov10>.

There is a book written by Tony Strike *Higher Education Strategy and Planning: a Professional Guide*, Routledge (2018) where there is a special section on benchmarking and rankings.

Benchmarking exercises can focus on almost anything, as long as you are currently engaged in the practice and are confident that you can gather sufficient data for analysis.

In the field of internationalization:

- international support services
- student mobility
- internationalization of the curriculum, joint study or double study programs
- number of international students
- research internationalization, and so on.

Process benchmarking:

finding best practices in the following areas:
- Internationalization
- Financial management
- HR management
- Regional engagement and innovation
- University-enterprise cooperation
- Quality management
- Business incubators
- Library
- IT and a whole range of other areas.

Latvia

The international Evaluation of Scientific Institution Activity was carried out in Latvia in 2019 by Technopolis Group. The **overall objective** of the evaluation was improvement of the quality of research performed by research institutions in Latvia, improvement of international competitiveness of research institutions, better integration in the European Research Area, increased competitiveness of the country as well as implementation of effective and evidence based research, technology development and innovation policy. The time scale was selected to analyse Research activities of Latvian institutions from 1 January 2013 to 31 December 2018. The overall final assessment of each institute includes the Panel's qualitative assessment of the institutes' alignment with the objectives of the State scientific and technological development.

See: <https://www.izm.gov.lv/images/zinatne/Latvia-Res-Assess_seminar_methodology_191203v2.pdf>

The assessment criteria for quality of the research performance of the institution:
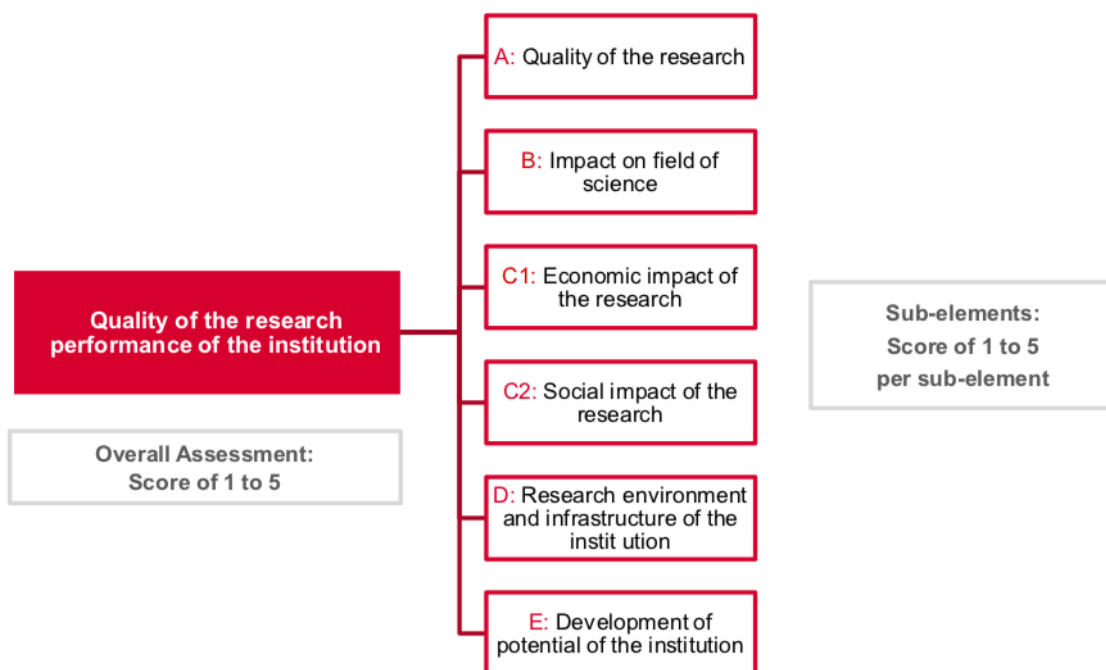
QUALITY OF THE RESEARCH PERFORMANCE OF THE INSTITUTION	
SCORE	**DEFINTION**
5	Outstanding level of research
4	Very good level of research
3	Good level of research
2	Adequate level of research
1	Poor level of research

The Report of the Research performance assessment can be found here (in EN): <https://www.researchgate.net/publication/312593088_Latvia_Innovation_System_Review_and_Research_Assessment_Exercise>.

Lithuania
Lithuania: Comparative Expert Assessment of R&D (in EN and LT) <https://strata.gov.lt/lt/palyginamasis-ekspertinis-mtep-vertinimas/rezultatai>

The overall objectives of Comparative expert assessment (CEA) of research and development in Lithuania were: to provide the Lithuanian public, policy-makers and decision-makers and the academic community with the expert-based evaluation of the status and competitiveness of Lithuanian research in comparison to the national and international practice. Comparative assessment of research and development is an integral part of R&D evaluation system. In 2017 a renewed two-stage evaluation system was introduced,

where the first stage (quantitative assessment) is implemented by the Research Council of Lithuania (LMT) and the second stage (qualitative assessment) is organised by the Research and Higher Education Monitoring and Analysis Centre (MOSTA).

The aim of assessment was to evaluate all participating Units of Assessment (UoA) using three criteria: research quality, economic and social impact and development potential. The results of CEA will enable the Ministry of Education and Science to allocate 60% of basic funding for R&D. CEA will be organized every 5 years starting from 2018. The assessment shall produce evidence based analytical material that carefully and in detail analyses the research excellence and competitiveness of Lithuanian research, whilst also considering its socioeconomic impact and the development prospects of research activities.

The material provides evidence for research policy making at different levels as well as enabling the research institutions involved in the process to gain a significant impetus for improving their operations. The HE institutions and their constituent faculties/departments/research groups or State research institutes were evaluated. The institutions, involved in the assessment process, formed their Units of Assessment (UoA) engaged in one area of research (agricultural sciences, humanities, biomedical sciences, physical sciences, social sciences or technological sciences). One Institution could have more than one UoA. Altogether six expert panels (61 experts in total) were appointed to perform the evaluation.

On the ratio question
Different ratios might be used for benchmarking. Contextualization while interpretation of data is always needed. It is recommended to interpret the indicators by taking into account the values of other indicators and the context of the data.

See the example of LT indicator: **Students per teacher ratio in EU countries in 2017 (ISCED 5–8)**
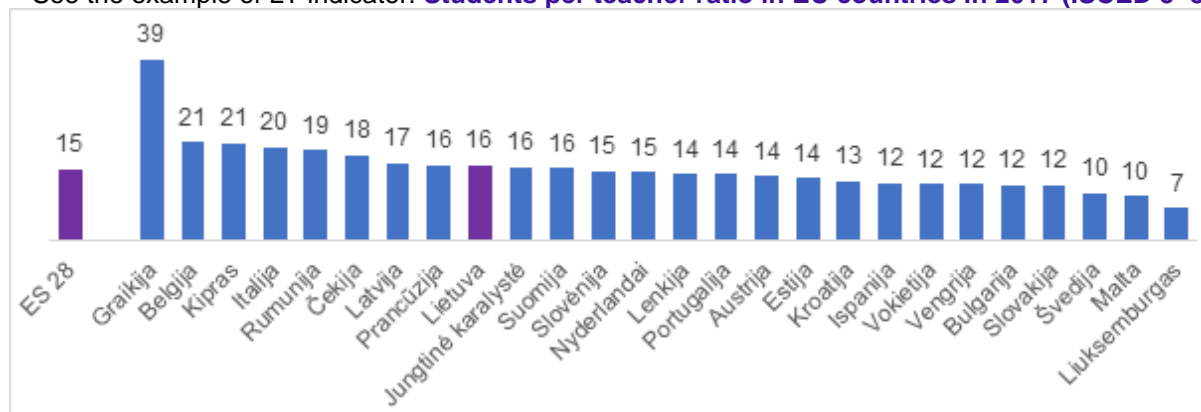
Data source: Eurostat (indicator: educ_uoe_perp04)
* – no data: Denmark.

2. Surveys of students and stakeholders and how they are taken into account for accreditation purposes and performance monitoring

The Latvian case
Surveys of students and stakeholders are part of the quality management system and as such have to be analyzed in the Self-assessment report for the purpose of study direction accreditation and institutional accreditation.
In the Law of Higher education (part 5) is stated that:
Higher education institutions implement their internal quality assurance systems, within which:
1) establish policies and procedures for ensuring the quality of higher education
2) develop mechanisms for the development, internal approval, supervision and periodic inspection of their study programs
3) establish and make public such criteria, conditions and procedures for the assessment of student progress that allow to ascertain the achievement of the intended study results
4) establish internal procedures and mechanisms for ensuring the qualification and quality of work of the academic staff

5) ensure that information is collected and analysed on students' progress, graduates' employment, students' satisfaction with the study program, on the efficiency of the academic staff's work, available study resources and their costs, essential indicators of the university's activities.
Source: (LV) <https://likumi.lv/ta/id/37967-augstskolu-likums>.

The Lithuanian case
Surveys of students and stakeholders are part of the study quality management and publicity system and as such have to be analysed for the purpose of study field accreditation accreditation. However, there is no defined precise way and form for the students' feedback regarding the quality of studies. This can be done by the HEIs themselves or by the Centre for quality assessment in higher education (SKVC) <https://www.skvc.lt/default/en/>.

See: the Lithuanian case for the context at "4.1.1. The external evaluation of study fields/study directions: Latvian and Lithuanian cases", as well as "Table 8. Areas of evaluation, objectives, indicators for study fields: the Lithuanian case" where the area for evaluation "7. Study quality management and publicity" and objective for the evaluation "7.1. The improvement of the field studies is based on an internal quality assurance system involving all stakeholders, as well as continuous monitoring and public dissemination" as indicator "7.1.4. Evaluation of students' feedback about the quality of studies in the higher school" are provided.

3. Experience on "rating system"

Rating system is not widely spread as a tool for HE development. For example, by 2010, the Africa Union endorsed a regional initiative – the African Quality Rating Mechanism (AQRM) with 34 HE institutions from all the Regional Economic Communities (RECs) in Africa participating in its inaugural edition.

According to Peter A. Okebukola, the theory of competition on which ranking rests implies that competing elements strive to improve in order to be the leader in the pack. Thus, if the system-wide or institutional goal is to stimulate improvement in quality, ranking comes in as one of several pathways. The overarching goal of ranking or rating in the African setting is to serve as stimulant for bolstering quality in the HE system (Okebukola, 2013. An African Perspective on Ranking in Higher Education).

The African Quality Rating Mechanism (AQRM) was instituted to ensure that the performance of HE institutions in Africa can be compared against a set of criteria that takes into account the unique context and challenges of HE delivery on the continent. HE has been identified as a major area of focus in the African Union (AU) Plan of Action for the Second Decade of Education for Africa (2006–2015), with quality as an area essential for revitalisation of HE in the region. The AU Commission has developed a framework for Harmonisation of HE Programmes in Africa, with the specific purpose of establishing harmonised HE systems across Africa, while strengthening the capacity of HE institutions to meet the many tertiary educational needs of African countries (AUC, 2008; Oyewole, 2010). This is mainly through innovative forms of collaboration and ensuring that the quality of HE is systematically improved against common, agreed benchmarks of excellence and facilitates mobility of graduates and academics across the continent. In this connection, the AQRM is also envisioned to facilitate improvements in quality of delivery of institutions across the continent and allow for an objective measure of performance (Okebukola, 2013. An African Perspective on Ranking in HE, p. 5).

QRM has clusters of eleven indicators (standards) at the institutional and programme levels. These are shown in Table 2.

Table 2: AQRM Standards/Clusters of Indicators

Standard	No of rating items
1. Institutional Governance and Management	9
2. Infrastructure	8
3. Finance	7
4. Teaching and Learning	8
5. Research, Publications and Innovations	8
6. Community/Societal Engagement	8
7. Programme Planning and Management	8
8. Curriculum Development	7
9. Teaching and Learning (in relation to Curriculum)	7
10. Assessment	6
11. Programme Results	4

A pilot run of AQRM was implemented in 2010. An AQRM survey questionnaire was used for collecting data. It is an 80-item instrument with 15 parts. Parts 1 to 13 contain items seeking demographic data on the institution and detailed data on students, staff, facilities and processes. Part 14 requires self-rating of faculty/college characteristics such as management; infrastructure; recruitment, admission and selection; research output; learning materials; curriculum and assessment. The second section of Part 14, requires that the programmes of the institution be ranked from 1 st to 5th. Part 15 is the institutional self-rating. The entire institution is to be rated on a 3-point scale excellent performance; satisfactory performance; and unsatisfactory performance on the 11 clusters of standards.

Each of the 34 participating institutions in the pilot run from all the Regional Economic Communities (RECs) in Africa conducted a self-assessment on the items on the 11 standards. Rating of performance was on a 3-point scale (unsatisfactory performance=1; satisfactory performance=2; excellent performance=3). It is unclear if AU will take AQRM beyond the pilot stage but hopes are high in Africa and the rest of the world that AQRM should evolve to a respectable international rating scheme (see more information in the research paper: Okebukola, 2013. An African Perspective on Ranking in Higher Education. Available: <https://www.academia.edu/5158197/An_African_Perspective_on_Ranking_in_Higher_Education>; draft version is given by the Report authors, too).

See also the information provided by Association of African Universities: <https://blog.aau.org/african-quality-rating-mechanism-aqrm-institutional-evaluations-call-higher-education-institutions-participate/>.
Additional information can be also found at: <https://www.aau.org>.

4. Online platforms development (samples)

Latvia

Online platform created for providing information on study direction accreditation
There is an online platform created for providing information on study direction accreditation, including study program accreditation, also information on the accreditation of study directions and study programs from the l HEIs perspective can be found.

Study programs are grouped based on the following criteria:
- study direction
- type of study program: 1st level, undergraduate, graduate, postgraduate

- place of implementation
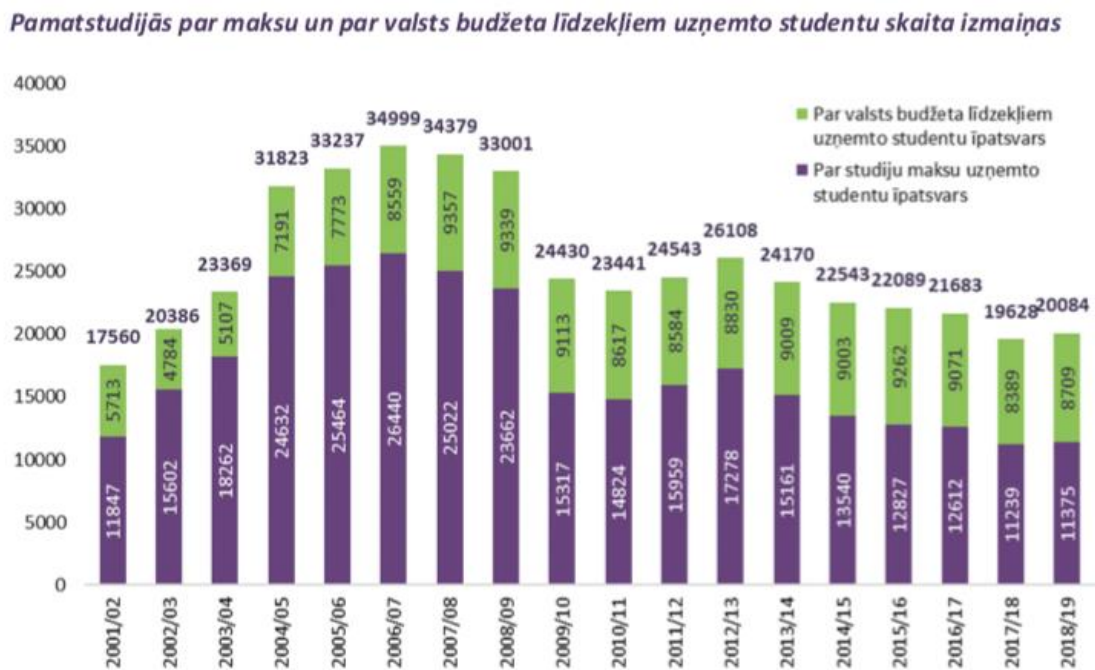- joint or double degree study programs with other HEIs
- program ownership

The online system is created by the Academic Information centre where HEIs can upload the self-assessment reports for licensing and accreditation purposes.
See: <http://svr.aic.lv/Form.aspx?id=contacts>.

The information on HEIs are collected and available on the website of the Ministry of Education and Science: statistics on financing; as well Annual reports on HE development.

(In LV):<https://izm.gov.lv/lv/publikacijas-un-statistika/statistika-par-izglitibu/statistika-par-augstako-izglitibu>.
For example, see in the figure below the changes in number of students financed by state and based on tuition fees (illustrative)

Pamatstudijās par maksu un par valsts budžeta līdzekļiem uzņemto studentu skaita izmaiņas

The information on scientific institutes financing and performance results is available at:<https://izm.gov.lv/lv/zinatne/zinatnes-finansejums/zinatniskas-darbibas-bazes-finansejums/2019-gada-zinatnes-bazes-finansejums>.

Education State information system
The information entered, created, obtained, stored and processed in the state education information system is used for the implementation of state and local government functions in the field of education, for example, functions specified in Sections 14, 15 and 17 of the Education Law – to develop draft policy planning documents and regulatory enactments in the field of education, to ensure the registration of children who have reached the compulsory education age, development and implementation of measures to improve the quality of the teaching and upbringing process, coordination of the establishment, reorganization and closure of local government educational institutions, etc. functions.

<https://www.izm.gov.lv/lv/nozares/izglitiba/valsts-izglitibas-informacijas-sistema>.
Only the registered users could have access to the system.

Lithuania

Examples of information on interactive data collection, analysis and visualization on the website of **STRATA** <https://rodikliai.strata.gov.lt/?lang=en&kpi_type=nlevel&kpi_group=3>.

Centre for quality assessment in higher education (information on qualification recognition, quality assurance, education in Lithuania)
<https://www.skvc.lt/default/en/>.

Education management information system
(in EN): general education institutions data, vocational institutions data, non-formal education institutions data, colleges data, universities data, science research institutes data).
<https://www.svis.smm.lt/en/>

(in LT):
Indicators for state (strategic) science monitoring
<http://www.svis.smm.lt/file/manual/Savaivaldybiu_pazanga/2019%20m/Valstyb%C4%97s%20(stragini ai)%20mokslo%20rodikliai.pdf>.
Indicators for the state (strategic) education monitoring
<http://svisold.emokykla.lt/lt/index/wpage_view/42>.
Indicators for the evaluation of state education 2013–2022 strategy implementation
<http://svisold.emokykla.lt/lt/index/wpage_view/41>.

5. Guidance on Quality management system

There are no special guidelines on the introducing and implementing Quality management system, because HEIs are autonomic institutions and they can choose Quality management system by themselves. In the Latvian case, there is a law which requires that such a Quality management system must be presented (see "The Law of Higher education (part 5)" at "2.Surveys of students and stakeholders and how they are taken into account for accreditation purposes and performance monitoring"). Financing was provided by EU structural funds for the designing and implementing the process Quality management system.

List of KPIs

General recommendations:
- it is recommended to interpret the indicators by taking into account the values of other indicators and the context of the data;
- it has to be clear what significance for indicators is going to be/aimed to be allocated;
- it is recommended that indicators which are going to be provided should be presented as possible examples of HE system monitoring/evaluation indicators rather than the final suggestions.

In the Report, are given KPIs, some indicators provided in the HE system policy documents (3.1. Bologna process implementation requirements, **Table 1 Bologna process requirements and indicators in Latvia**, 3.2. The action plan on the implementation of the National Strategy for the development of Education in the Republic of Azerbaijan, **Table 2 The Action Plan on the Implementation of the National Strategy for the Development of Education in the Republic of Azerbaijan: strategic targets and measures set for HE).**

For possible areas of application of KPIs, KPIs examples please look at the Annex 1 "List of KPIs. Data and methodology. Visualisation (Lithuania). A methodical means for monitoring the progress of activities of Higher Education institutions in Lithuania", as well as in the sections with already provided lists of KPIs (e.g., 4.1. Higher Education Institutions' accreditation criteria, **Table 3. Example: The evaluation areas and the indicators associated with them: the Lithuanian case,** 4.1.1. The external evaluation of study fields/study directions: Latvian and Lithuanian cases, **Table 8. Areas of evaluation, objectives, indicators for study fields: the Lithuanian case,** examples of KPIs in the sections 5.1., 5.2 and others). Part of KPIs

which are on the HEIs level for some areas (number of students, international students, publication per academic staff, etc.) are typically considered as an issue of the autonomy of HEIs and could be implemented by institutions themselves.

The samples mentioned in the Report are illustrative and could serve as a base for setting goals and requirements and associated KPIs based on the priorities of HE development of Azerbaijan for the next period and to monitor the progress of HE system development. In case higher education system development is considered to be implemented, elaboration of KPIs for HEIs could be organized in several stages: with working groups' establishment for creating KPIs, broad participation of HEIs involved, organizing specialists for gathering, analysing, visualizing data. The whole process must be contextualized, driven by the agenda of HE system development of Azerbaijan.

6. Annex 1 "List of KPIs. Data and Methodology. Visualisation (Lithuania). A methodological means for monitoring the progress of activities of Higher Education institutions in Lithuania"

STRATA project "Development and Implementation of a System for Monitoring and Evaluating the Progress of Science and Studies".

PROJECT "DEVELOPMENT AND IMPLEMENTATION OF A SYSTEM FOR MONITORING AND EVALUATING THE PROGRESS OF SCIENCE AND STUDIES"

The aim of the project – to create a system for monitoring the progress of the HEIs activities, which would ensure timely monitoring of the activities of HEIs and their changes: to collect, analyse and systematically prepare information on the activities of Lithuanian HEIs and their changes; to identify trends in the activities of HEIs:

▪ constructing the list of indicators and descriptions of indicators in order to monitor the progress of HEIs activities; data collection and analysis.
▪ aggregation and visualization of the methodical means (aggregation of indicators, construction of indices, visualization of results (university and college indices)).
▪ preparation of a report (discussion of results, preparation of individual HEIs profiles, recommendations).
▪ developing a tool for visual profiles of all HEIs.

A METHODICAL MEANS FOR MONITORING THE PROGRESS OF ACTIVITIES OF HIGHER EDUCATION INSTITUTIONS (HEIS)

The **object** of monitoring the progress of HEIs consists of:
1. general characteristics of HEIs
2. characteristics of students and studies
3. characteristics and performance of the research staff of HEIs
4. characteristics of teaching and administrative staff
5. financial characteristics
6. characteristics of the process of graduates' transition from studies to the labour market.

The **aim** of monitoring the progress of HEIs is to systematically collect, analyse and prepare information on the activities of Lithuanian HEIs and their changes; to identify trends in the activities of higher education institutions. The information can be used:

1. to identify the strengths and problem areas of HEIs
2. to identify the need for further research to propose public policy measures to ensure the progress of HEIs in their areas of strength
3. to identify the need for additional research that would allow proposing public policy measures to solve the problems of HEIs
4. to initiate the necessary systemic changes in HEIs.

DATA AND METHODOLOGY

COMPOSITE INDEXES

- constructed from indicators, calculation and analysis of which in most cases was performed on the basis of 2018 **periodically collected data files**: **administrative data** provided by ŠVIS (*Lt.:* Education management information system), other official data sources.
- **calculating, grouping, aggregating, comparing, and analysing the obtained data.**
- **Equal weighting** was applied to the calculation of composite indexes when the results of the indicator values were summed without adding anything.
- The methodology of compiling the composite index was applied to compile the performance monitoring indices of **18 public and private universities** and **22 public and private colleges.**

INDICATORS AND CONSTRUCTION OF COMPOSITE INDEX

INDICATORS

The indicators of methodological means consist of indicators for monitoring the progress of universities (28 indicators) and indicators for monitoring the progress of colleges (22 indicators). Given a numeration of indicators in the methodological means is presented. According to the object of monitoring, the indicators can be divided into six groups, reflecting:

1. general characteristics of HEIs (number of students and doctoral students, number of positions held by lecturers, researchers, heads with administrative staff);
2. characteristics of students and studies of HEIs (characteristics of the study program, change in the number of enrolments; scoring of enrolments in HEIs; share of drop-outs; potential socio-economic role of institution in a region; internationalization of studies);
3. characteristics of research staff of HEIs and results of performance (ratio of the number of positions occupied by researchers to the number of positions occupied by lecturers; number of doctoral students per researcher position; assessment of benchmarking; income of university from R&D);
4. characteristics of teaching and administrative staff (data on participation of lecturers and administrative staff in the activities of the institution, qualification of lecturers, age profile, structure of staff);
5. financial characteristics (financial data on salaries, studies, R&D);
6. characteristics of the process of graduates' transition from studies to labour market (employment status of students and graduates (employed, continuing studies, unemployed, etc.), data on salaries of employed ones).

STANDARTISATION AND AGGREGATION OF INDICATORS

The number of indicators forming the index group is n.

Monitoring the HE system development in Azerbaijan, 2020

Each indicator is standardised by calculating the value of z according to the formula
$z_i = (x_i − \bar{x}) / s$ (x_i = value of the indicator; $\bar{x}$ = mean; s = standard deviation).
After standardising the values of indicators, new values of indicators of index z_1, z_2, ..., z_n are obtained, the average of which in the index is always equal to 0, and the standard deviation is always equal to 1: $\bar{z} = 0$, $s_z = 1$.
A **positive standardised value** shows a better than average result, **negative** – worse than average result.
After that, standardised indicators of the index are **aggregated by assigning equal weights** to them (the weight is calculated only according to those indicators that have values).
The index is calculated according to the formula $In_{gr} = (z_1 + z_2 + ... + z_n) / n$ (z_1 = standardized indicator; n = number of indicators in the group).

Example of Composite Index: Students: Preparation and Participation in Studies (Colleges)
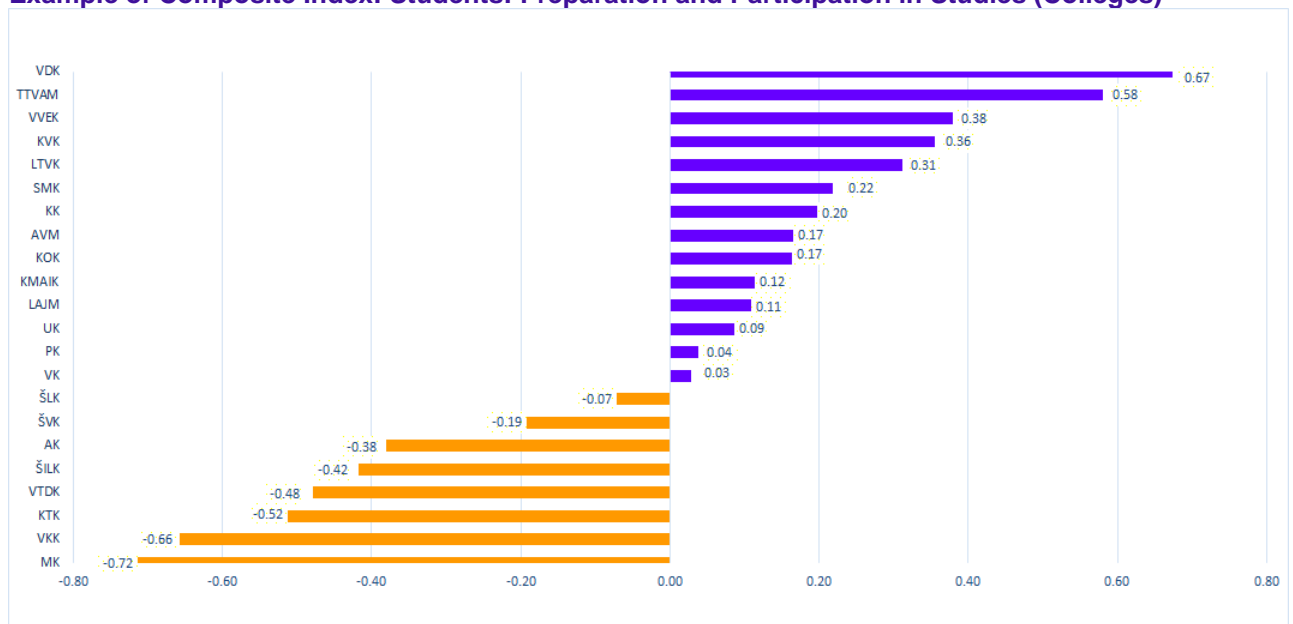
Standartised z values

Equal weighing

The equal weighting method was used to construct the indexes of composite HEIs, in which **each of the indicators has the same effect on the constructed index.**
Used: QS Higher Education System Strength Rankings, QS Best Student Cities Index, etc.

Disadvantages of assigning equal weights:
-the risk of unreliability of results, where equal weights can be assigned to variables without any empirical justification for choosing a different scheme.
-different result of equal weighting using different weighting methods.
-if the indicators are given equal weight, then the number of different indicators in the index may be different, thus forming an unbalanced structure of the composite index.
-**In order to avoid such a situation, it is proposed to combine less correlating indicators or to use a lower total number of indicators for such weighting.**

UNIVERSITY INDICATORS ACCORDING TO INSTITUTIONS, GROUPS OF STUDY FIELDS AND SCIENCE FIELDS

GENERAL INDICATORS

The group consists of general KPIs for monitoring the activities of HEI, which collect, analyse, and provide information on the number of participants in the activities of the institution and their changes. These indicators include the total number of students and lecturers, administration and other staff, doctoral students, and researchers, reflect the size of the institution, the profiles of study fields and science fields.

Indicators according to institutions, groups of study fields.

1. Number of students

2. Number of full-time academic staff

3. Number of PhD students

4. Number of full-time research staff

5. Number of full-time non-academic staff (heads and administrative staff)

I. STUDENTS: PREPARATION AND PARTICIPATION IN STUDIES

The group of KPIs for monitoring the activities of HEIs, the indicators of which collect, analyse and provide information on the preparation and participation in the study process by students of a particular institution, as well as the change in these indicators.

Indicators according to institutions and groups of study fields.

6. Change in the number of study entrants

7. Average grade score of study entrants enrolled in HEI

8. Proportion of students in study programs / study fields accredited for the maximum period

9. Proportion of non-dropouts to all students

II. INTERNATIONALISATION OF STUDIES

A group of KPIs for monitoring the activities of HEI, the indicators of which collect, analyse and provide information on the internationalization of the institution's studies and their change: the participation of students and lecturers in exchange programs, as well as full-time enrolment of international students.

Indicators according to institutions and groups of study fields.

10. Proportion of foreign nationals, who have come to the full study program, to all students

11. Ratio of academic lecturers who came to lecture according to the exchange programs to the full-time positions occupied by academic staff

12. Proportion of outgoing student exchanges per student

III. RESEARCH

13. Ratio of the number of full-time positions occupied by researchers to the number of full-time positions occupied by lecturers

14. Number of PhD students per researcher's full-time position

15. Estimate of the ongoing assessment of international benchmarking

16. The ratio of the university's income from R&D to the total payments to the university by legal entities and physical persons

IV. STAFF: ACADEMIC AND NON-ACADEMIC

A group of KPIs for monitoring the activities of HEI, the indicators that collect, analyse and provide information on the participation of institution staff – lecturers and administration – in the activity of the institution, change in participation: qualification of lecturers, age, structure of staff.

Indicators according to institutions and groups of study fields.

17. Proportion of academic staff with PhD (recognized artist) qualification

18. Ratio of full-time academic staff to the total number of academic staff

19. Number of full-time academic staff positions per one student

20. Ratio of full-time positions occupied by academic staff (lecturers together with researchers) to full-time positions occupied by non-academic staff (administration staff together with heads)

21. Proportion of full-time academic staff aged up to 55 years

V. FINANCIAL DATA: SALARIES, STUDIES, R&D

A group of KPIs for monitoring the activities of HEI, the indicators that collect, analyse and provide information on the institutions' expenditures on studies, research, and salaries of academic staff.
Indicators according to institutions.

22. Ratio of the gross salary of the teaching staff to the gross salary of the total staff of the institution

23. Proportion of study expenditure to total expenditure

24. Proportion of research expenditure to total expenditure

VI. GRADUATES IN LABOUR MARKET

A group of KPIs for monitoring the activities of HEI, the indicators of which collect, analyse and provide information on the participation of graduates of institutions in the labour market and its change.
Indicators according to institutions and groups of study fields.

25. Proportion of first-cycle graduates working in at least one workplace in 1-3 main occupational groups of the Lithuanian Classification of Occupations out of all working graduates (12 months after graduation)

26. Proportion of second-cycle, full-time and vocational graduates working in 1-2 main occupational groups of the Lithuanian Classification of Occupations out of all working graduates (12 months after graduation)

27. Average monthly insured income of employed graduates

28. Proportion of graduates not registered as unemployed at the Lithuanian Employment Service out of all graduates (12 months after graduation)

29. Proportion of graduates who have completed the first cycle studies and continue their studies in the second cycle studies

COLLEGE INDICATORS ACCORDING TO INSTITUTIONS AND GROUPS OF STUDY FIELDS

GENERAL INDICATORS

The group consists of general KPIs for monitoring the activities of HEI, which collect, analyse and provide information on the number of participants in the activities of the institution and their changes. These indicators include the total number of students and lecturers, administration, and other staff, reflect the size of the institution, the profile of study fields.

Indicators according to institutions, groups of study fields.

---

1. Number of students

2. Number of full-time academic staff

3. Number of full-time non-academic staff (heads and administrative staff)

I. STUDENTS: PREPARATION AND PARTICIPATION IN STUDIES

The group of KPIs for monitoring the activities of HEIs, the indicators of which collect, analyse and provide information on the preparation and participation in the study process by students of a particular institution, as well as the change in these indicators.

Indicators according to institutions and groups of study fields.

---

4. Change in the number of study entrants

5. Average grade score of study entrants enrolled in HEI

6. Proportion of students in study programs / study fields accredited for the maximum period

7. Proportion of non-dropouts to all students

II. THE SOCIO-ECONOMIC ROLE OF STUDIES TO THE REGION

A group of KPIs for monitoring the activities of HEIs, the indicators that collect, analyse and provide information on the socio-economic role of the institutions in the region (attracting and retaining students in the institution's region).

Indicators according to institutions and groups of study fields.

---

8. Proportion of entrants from the region where the college operates

9. Ratio of those enrolled in the first year of a group of study fields of a regional college to those enrolled in the first year of the same group of study fields in other colleges

10. Proportion of graduates employed in the region out of all graduates of the institution or its branch (one year after graduation)

III. INTERNATIONALISATION OF STUDIES

A group of KPIs for monitoring the activities of HEI, the indicators of which collect, analyse and provide information on the internationalization of the institution's studies and their change: the participation of students and lecturers in exchange programs, as well as full-time enrolment of international students.

Indicators according to institutions and groups of study fields.

---

11. Ratio of academic lecturers who came to lecture according to the exchange programs to the full-time positions occupied by academic staff

12. Proportion of outgoing student exchanges per student

IV. STAFF: ACADEMIC AND NON-ACADEMIC

A group of KPIs for monitoring the activities of HEI, the indicators that collect, analyse and provide information on the participation of institution staff – lecturers and administration – in the activity of the institution, change in participation: qualification of lecturers, age, structure of staff.

Indicators according to institutions and groups of study fields.

13. Proportion of academic staff with PhD (recognized artist) qualification

14. Ratio of full-time academic staff to the total number of academic staff

15. Number of full-time academic staff positions per one student

16. Ratio of full-time positions occupied by academic staff (lecturers together with researchers) to full-time positions occupied by non-academic staff (administration staff together with heads)

V. FINANCIAL DATA: SALARIES, STUDIES, R&D

A group of KPIs for monitoring the activities of HEI, the indicators of which collect, analyze and provide information on the institutions' expenditures on studies, research and salaries of academic staff.
Indicators according to institutions.

17. Ratio of the gross salary of the teaching staff to the gross salary of the total staff of the institution

18. Proportion of study expenditure to total expenditure

19. Ratio of income from R&D activities out of the total R&D funds allocated to the college

VI. GRADUATES IN LABOUR MARKET

A group of KPIs for monitoring the activities of HEI, the indicators of which collect, analyse and provide information on the participation of graduates of institutions in the labour market and its change.
Indicators according to institutions and groups of study fields.

20. Proportion of graduates working in at least one workplace in 1-3 main occupational groups of the Lithuanian Classification of Occupations out of all working graduates (12 months after graduation)

21. Average monthly insured income of employed graduates

22. Proportion of graduates not registered as unemployed at the Lithuanian Employment Service out of all graduates (12 months after graduation)

Table 1. General data of universities in 2018

Institution	1. Number of students	2. Number of teaching staff (full time)	3. Number of PhD students	4. Number of researchers (full time position)	5. Number of staff positions (full time): heads with administration
VDU	8035	410,1	232	145,1	244,6
ISM	1787	63,8	32	17,9	26,5
KTU	8720	557,1	316	260,5	227,1
VGTU	9134	602,6	199	236,9	131,5
VU	18679	1089,3	805	806,4	444,0

COMPOSITE INDEXES

INDEXES OF UNIVERSITIES

I. Students: preparation and participation in studies
II. Internationalisation
III. Science
IV. Staff: lecturers and administration
V. Financial data: salary, studies and R&D"
VI. Graduates in the labour market

Universitetų indeksai. 2018 m.

Monitoring the HE system development in Azerbaijan, 2020
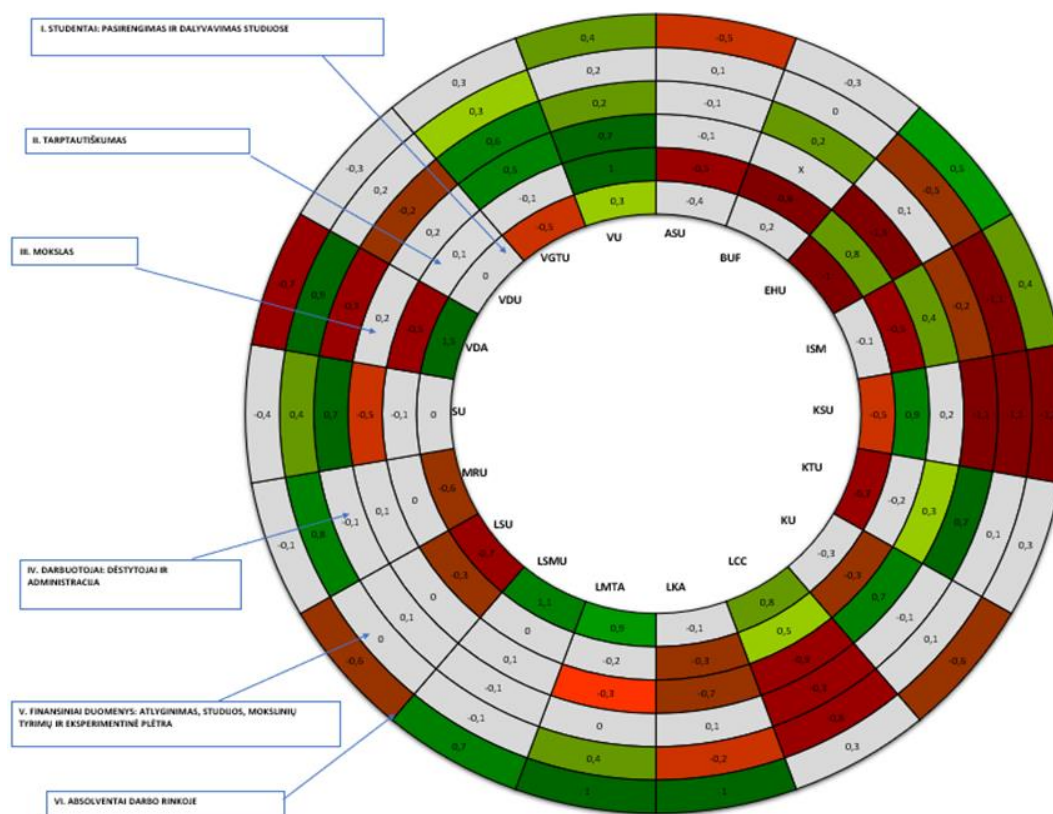
I. Students: preparation and participation in studies
II. Regionality of and socio-economic role in the region studies
III. Internationalisation
IV. Staff: lecturers and administration
V. Financial data: salary, studies and R&D
VI. Graduates in the labor market

Kolegijų indeksai. 2018 m.
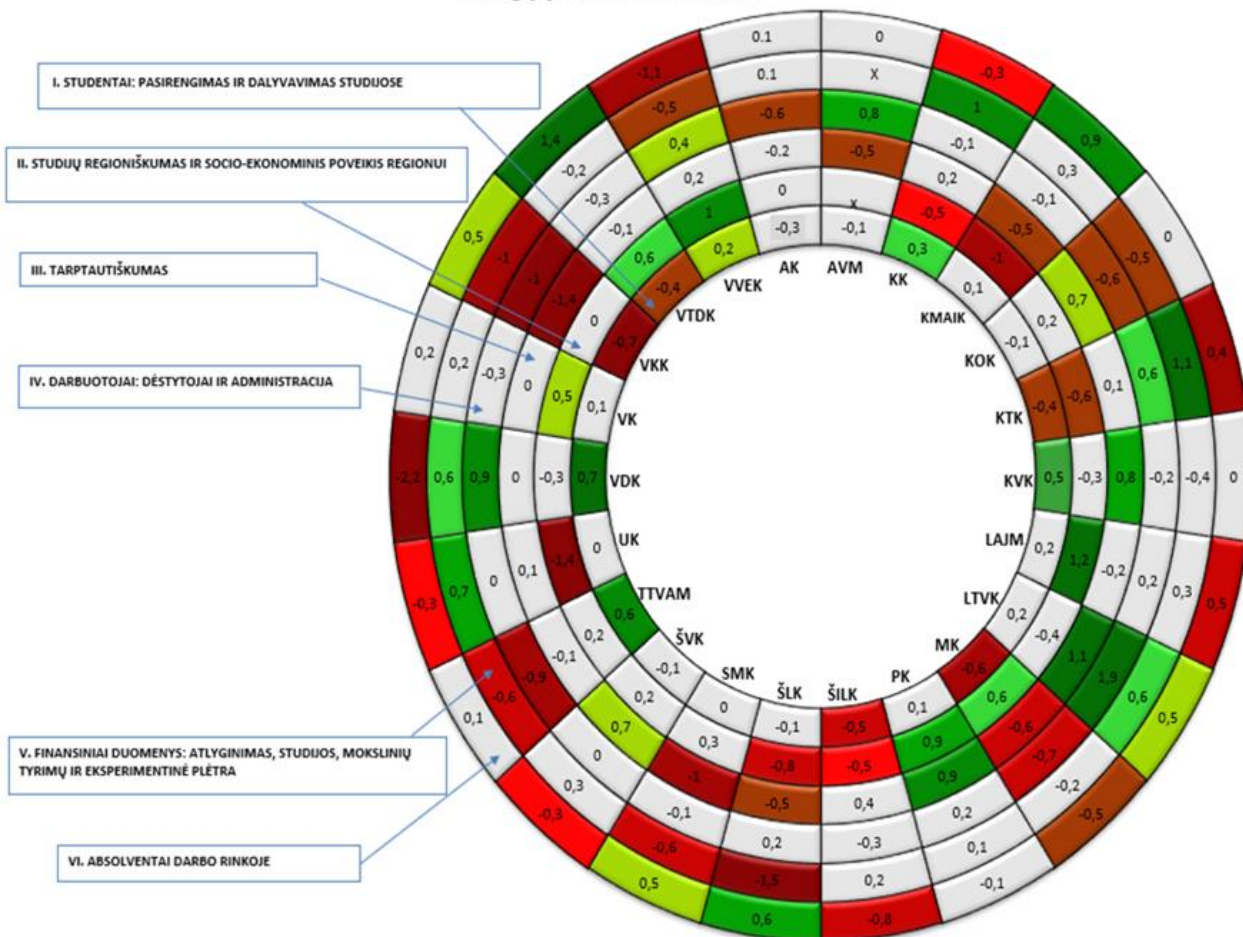
I. STUDENTAI: PASIRENGIMAS IR DALYVAVIMAS STUDIJOSE

II. STUDIJŲ REGIONIŠKUMAS IR SOCIO-EKONOMINIS POVEIKIS REGIONUI

III. TARPTAUTIŠKUMAS

IV. DARBUOTOJAI: DĖSTYTOJAI IR ADMINISTRACIJA

V. FINANSINIAI DUOMENYS: ATLYGINIMAS, STUDIJOS, MOKSLINIŲ TYRIMŲ IR EKSPERIMENTINĖ PLĖTRA

VI. ABSOLVENTAI DARBO RINKOJE

Example. Vilnius University according to values of universities' indicators
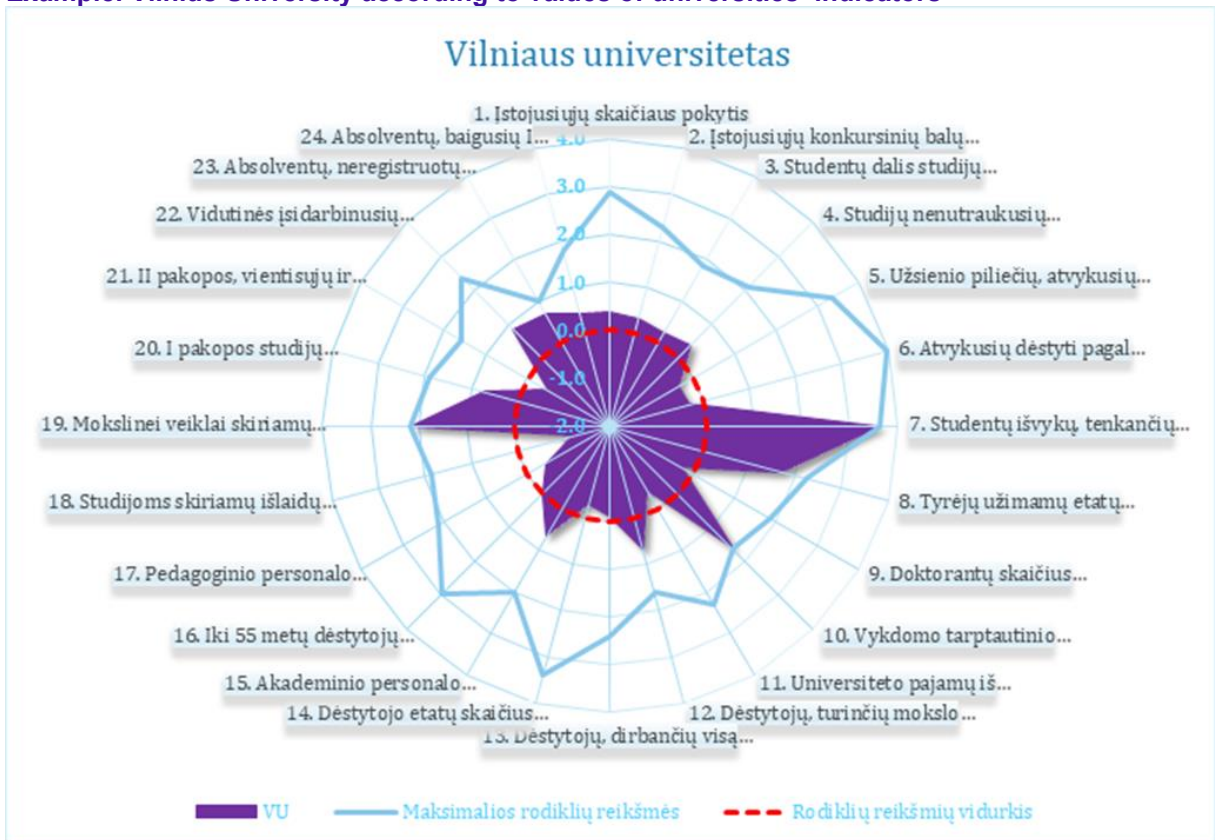
Example. Vilnius University according to values of universities' composite indexes

Monitoring the HE system development in Azerbaijan, 2020
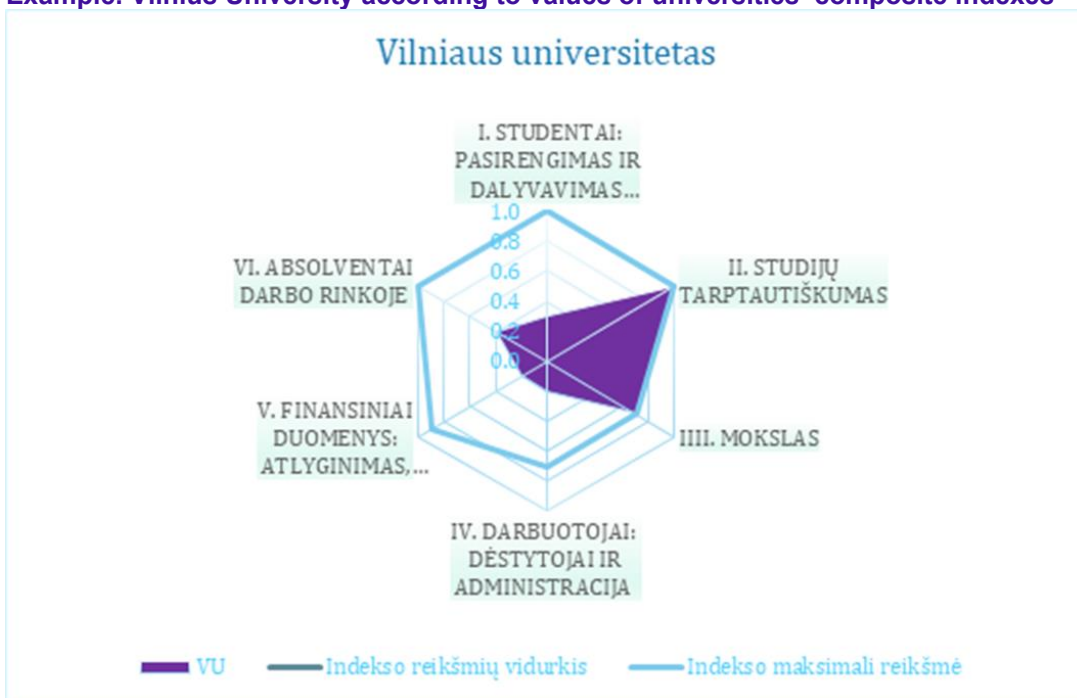
It was also decided to create a model of a separate HEI profile, which would later be applied to create a profile of each institution (you may see the profile with standardized indicators of a separate HEI (Vilnius College), which was prepared as an initial model example).

In the future, on the basis of the data collected and analyzed, it is planned to form and visualize the individual profile of each HEI (with the help of R / Tableau visualizations will be done at levels of study fields/groups of study fields, as well as at the levels of fields of science).

Example. Individual profile of Vilnius College.

VILNIAUS KOLEGIJA. 2018 M.

BENDRIEJI RODIKLIAI

Studentų skaičius	6653
Dėstytojų etatų skaičius	289
Vadovų su administracijos darbuotojais užimamų etatų skaičius*	88

STUDENTAI: PASIRENGIMAS IR DALYVAVIMAS STUDIJOSE

Įstojusiųjų skaičiaus pokytis	-4%
Įstojusiųjų konkursinių balų mediana	3.72
Studentų dalis studijų programose / kryptyse, akredituotose maksimaliam laikotarpiui	67%
Studijas nutraukusių studentų dalis nuo visų studentų	17%

STUDIJŲ REGIONIŠKUMAS IR SOCIO-EKONOMINIS POVEIKIS REGIONUI

Stojusiųjų iš regiono, kuriame veikia kolegija, dalis	52%
Regione įsidarbinusių absolventų dalis nuo visų institucijos ar jos filialo absolventų (po metų nuo baigimo)	44%

TARPTAUTIŠKUMAS

|	
Atvykusių dėstyti pagal mainų programas dėstytojų santykis su dėstytojų užimtais etatais	11%
Studentų išvykų, tenkančių vienam studentui, dalis	(nepateikti 2018 m. duomenys)

DARBUOTOJAI: DĖSTYTOJAI IR ADMINISTRACIJA

Dėstytojų, turinčių mokslo laipsnį (pripažintų menininkų) dalis nuo visų dėstytojų užimamų etatų	4%
Dėstytojų, dirbančių ne visą darbo laiką, dalis nuo visų dirbančių dėstytojų	11 %
Studentų skaičius tenkantis vienam dėstytojo etatui	56
Administracijos kartu su vadovais užimamų etatų ir akademinio personalo (dėstytojų kartu su mokslo darbuotojais) užimamų etatų santykis	(nepateikti 2018 m. duomenys)
55 metų ir vyresnių dėstytojų užimtų etatų dalis	39 %

FINANSINIAI DUOMENYS: ATLYGINIMAS, STUDIJOS, MOKSLINIŲ TYRIMŲ IR EKSPERIMENTINĖ PLĖTRA

Pedagoginio personalo bruto darbo užmokesčio dalis nuo viso institucijos personalo bruto darbo užmokesčio	50 %
Studijoms skiriamų išlaidų dalis nuo visų išlaidų	79 %
Pajamų iš mokslo tyrimų ir eksperimentinės plėtros (MTEP) veiklų dalis nuo visų kolegijai skirtų MTEP lėšų	(nepateikti 2018 m. duomenys)

ABSOLVENTAI DARBO RINKOJE

Absolventų, bent vienoje darbovietėje dirbančių 0-3 pagrindinėse Lietuvos profesijų klasifikatoriaus profesijų grupėse, dalis nuo visų dirbančių absolventų (po 12-os mėnesių nuo baigimo)	(nepateikti 2018 m. duomenys)
Vidutinės įsidarbinusių absolventų mėnesio draudžiamosios pajamos	653EUR
Absolventų, registruotų bedarbiais Lietuvos užimtumo tarnyboje, dalis nuo visų absolventų (po 12-os mėnesių nuo baigimo)	21 %