

Conclusions and recommendations on the methodology for multidimensional ranking of the Russian higher education institutions

The developed template methodology for multidimensional ranking provides a basis for a national approach to HEIs' assessment with due account of the national higher education system diversity.

The multidimensional ranking of the Russian HEIs is an approach which is based on:

- IREG audit criteria¹,
- experience of global and national rankings construction,
- quantitative indicators,
- rejection of applying an aggregate indicator.

The methodology should be applied for:

- a comprehensive analysis and assessment of the HEIs in their diversity enabling comparison and benchmarking, and enhancing Russian higher education system competitiveness through support to planning and strategic development of the HEIs;
- identification of strengths and weaknesses of the HEIs, their comparative assessment with competitors, HEIs' strategic development planning and increasing their competitiveness;
- constructing special rankings, for example, using the set of five "excellence indicators" to assess leading universities or 13 indicators of global rankings to increase universities' competitiveness in the global higher education area.

Further methodology amendments should include:

- reduction of the indicators with due account of factor analysis and practice of data collection,
- extension of methods variety for rankings construction,
- application of a more relevant approach to HEIs classification on the basis of multidimensional ranking,
- developing models of data presentation including proposals for creating a national system for multidimensional ranking portal,
- further efforts on developing indicators comparable with indicators used in international assessments

Three dimensions: research, teaching and learning and third role should be assessed within multidimensional ranking.

The updated list of indicators should include:

HIGHER EDUCATION INSTITUTION PROFILE	
№	Indicator, Group A
A1	Name
A2	Type
A3	Category
A4	Group
A5	Affiliation

¹ <http://www.ireg-observatory.org/>

A6	Organisational and Legal form
A7	Federal district, RF
A8	RF subject
A9	Number of students
A10	Number of academic staff
A11	Number of non-academic staff
A12	Number of education programmes
A13	Number of researchers
A14	Number of PhD (candidate of science) programmes
A15	Number of doctorate programmes
A16	Education and research facilities
A17	Accommodation facilities
A18	Library collection
RESEARCH	
№	Indicator, Group B
B1	Ratio of expenditure on research
B2	Number of citations per academic staff (Russian e-library)
B3	Number of citations per academic staff in Scopus
B4	Number of citations per academic staff in Web of Science
B5	Number of citations per publication in the Russian e-library
B6	Number of citations per publication in Scopus
B7	Number of citations per publication in Web of Science
B8	Number of publications per academic staff in the Russian e-library
B9	Number of publications per academic staff in Scopus
B10	Number of publications per academic staff in Web of Science
B11	Ratio of research income
B12	Number of Russian research grants (Russian Humanitarian Fund, Russian Foundation for Basic Research)
B13	Total amount of Russian research grants (Russian Humanitarian Fund, Russian Foundation for Basic Research)
B14	Ratio of full-time students who participated in research
B15	Number of international research grants
B16	Total amount from international grants won
B17	Proportion of PhD students who participated in study placements abroad

TEACHING AND LEARNING	
№	Indicator, Group C
C1	Proportion of internationally accredited education programmes
C2	Proportion of programmes enrolling students with high Unified State Examination scores
C3	Proportion of applicants who won national education Olympiads (competitions)
C4	Proportion of students who won prestigious scholarships
C5	Proportion of graduates who were enrolled in PhD programmes in the previous academic year
C6	Ratio of students who were enrolled in master programmes to students who were enrolled in bachelor programmes
C7	Ratio of graduates (holders of bachelor and/or specialist degree) from other universities who were enrolled in master programmes)
C8	Ratio of full-time young academic staff under 35 y.o. who won prestigious national grants and awards to the total number of full-time academic staff under 35 y.o.
C9	Proportion of academic staff who are members or associate members of the Russian Academy of Sciences
C10	Expenditures on facilities and infrastructure (for education provision)
C11	Number of full-time academic staff and researchers who won national and international awards
C12	Number of PhD students
C13	An average Unified State Examination score of admitted applicants
C14	Number of academic staff and researchers who defended their doctorate theses
C15	Ratio of students to academic staff
C16	Funds for education services provision
C17	Ratio of international students
C18	Number of international academic staff
C19	Ratio of academic staff with degree/diploma from foreign universities
C20	Proportion of academic staff invited as lecturers by foreign universities
C21	Proportion of education programmes implemented in collaboration with international partners
C22	Proportion of students who studied in programmes implemented in collaboration with international partners
C23	Ratio of students who studied abroad to the total number of students
HEI's THIRD ROLE	
№	Indicator, Group D
D1	Proportion of funding received from other sources than federal budget
D2	Income from intellectual property products
D3	Number of education programmes implemented at the request of third party organizations
D4	Number of specialists from third party organisations who did CPD courses

D5	Ratio of income from international sources
D6	Proportion of income from regional sources
D7	Number of research contracts with regional partners
D8	Ratio of students who did internships in regional organisations and enterprises

Further amendment of the methodology should include possibility of the indicators combination: it is possible to combine indicators of publications and citations activity and grant activity (total amount and number of Russian grants and total amount and number of international grants), and number of PhD students and ratio of graduates enrolled in PhD programmes.

Ranking Russian universities against indicators used in global rankings enables to assess their competitiveness in a global education area. These indicators are, as follows:

Indicators of global rankings

- Number of citations per academic staff in Web of Science
- Number of citations per paper in Scopus
- Number of citations per paper in Web of Science
- Number of citations per academic staff in Scopus
- Number of publications per academic staff in Web of Science
- Ratio of research income
- Ratio of students to academic staff
- Ratio of international students
- Number of international academic staff
- Proportion of funding received from other sources than federal budget
- Proportion of income from regional sources

Ranking higher education institutions against «excellence indicators» - highly correlated indicators that define positions of universities in the ranking and describe their leadership and competitive features – enables to assess HEI's leadership potential – its balanced performance on all functions.

Excellence indicators

- Ratio of research income
- Number of citations per academic staff in Russian e-library
- Number of citations per academic staff in Scopus
- Number of citations per academic staff in Web of Science
- Number of citations per paper in Russian e-library
- Number of citations per paper in Scopus
- Number of citations per paper in Web of Science
- Number of publications per academic staff in Russian e-library
- Number of publications per academic staff in Scopus
- Number of publications per academic staff in Web of Science
- Number of international research grants
- Number of Russian research grants
- Total amount of Russian research grants
- Total amount of international research grants
- Ratio of full-time students who participated in research
- Proportion of students who won prestigious scholarships

- Proportion of graduates enrolled in PhD programmes

Excellence indicators could be combined in 5 coefficients: coefficient of HEI's efficiency on commercialization of research outcomes, coefficient of publication activity, coefficient of grant activity (units), coefficient of grant activity (roubles), coefficient of students' research potential:

Indicator	Coefficient
Ratio of research income	Coefficient of HEI's efficiency on commercialization of research outcomes
Number of citations per academic staff in Russian e-library	Coefficient of publication activity
Number of citations per academic staff in Scopus	
Number of citations per academic staff in Web of Science	
Number of citations per paper in Russian e-library	
Number of citations per paper in Scopus	
Number of citations per paper in Web of Science	
Number of publications per academic staff in Russian e-library	
Number of publications per academic staff in Scopus	
Number of publications per academic staff in Web of Science	
Number of Russian research grants	
Number of international research grants	
Total amount of Russian research grants	Coefficient of grant activity (roubles)
Total amount of international research grants	
Ratio of full-time students who participated in research	Coefficient of students' research potential
Proportion of students who won prestigious scholarships	
Proportion of graduates enrolled in PhD programmes	

Application of the template methodology for various types of rankings stimulates comprehensive assessment of HEIs' performance.