

# **Global University\* Rankings and Their Impact**

*Prepared by*

*Dr. Mohamed Rafat Mahmoud*

**Assistant Secretary General  
Association of Arab Universities  
June 2013**

**\* EUA Report on Ranking 2011: Andrejs  
Rauhvargers**

# Summary

The international rankings in the present form only cover a very small percentage of the world's 17000 universities.

Most international rankings focus predominantly on indicators related to the research function of the universities.

The importance of links to external stakeholders and environment are largely ignored.

- Rankings have certainly helped to foster greater accountability and increased pressure to improve management practices.
- There is a danger that the time invested by universities in collecting and using data to improve their performance in the rankings may detract from efforts to progress in other areas, such as teaching and learning or community.
- The importance of this lecture is to inform universities about the methodologies behind the most popular global rankings and about their potential impact.

Various ways of rankings can be grouped according to their purpose, parameters measured, the representation of the results or intended impact:

**(1): Academic rankings with the main purpose of producing university league tables:**

- ARWU, Academic Ranking of World University, ARWU, Shanghais Ranking.
- World University Ranking, Times higher education.
- World Best University, US news.
- Global University Ranking Reiter.

**(2): Ranking concentrating on research performance only (with or without league tables).**

- Leiden Ranking Leiden University.
- Performance Ranking of scientific papers for world Univ. (Taiwan higher education Council).
- Assessment of Univ-Based Research European Commission.

**(3) Multi Rankings – University Rankings and classification using a number of indicators without the intention of producing league tables.**

**(4) Web Rankings: Webometric Ranking of World Universities.**

**(5) Benchmarking based on learning outcomes.**

**1-International Ranking producing league tables**

**1-1 The Academic Ranking of World Universities (ARWU)**

**Criteria, Indicators and weights used in Ranking**

	<b>Indicator</b>	<b>Code</b>	<b>Weight</b>
<b>Quality of Education</b>	<b>Alumni of an institution winning Noble Prizes and Field Medals</b>	<b>Alumni</b>	<b>10%</b>
<b>Quality of Faculty</b>	<b>Staff of an institution winning Nobel Prize and field Medals</b>	<b>Award</b>	<b>20%</b>
	<b>(Top 200) highly cited researchers in 21 broad subject categories</b>	<b>HiCi</b>	<b>20%</b>
<b>Research Output</b>	<b>Papers published in Nature and Science</b>	<b>N&amp;S</b>	<b>20%</b>
	<b>Papers indexed in Science Citation Index-expanded and Social Science Citation Index</b>	<b>PUB</b>	<b>20%</b>

	Indicator	Code	Weight
Per Capita Performance	Per Capita academic performance of an institution	PCP	20%
TOTAL			100%

ARWU ranks universities according to their success in four areas:

### **Quality of Education**

The number of alumni Nobel prizes in the science of fields medal.

### **Quality of Faculty:**

**It is estimated on the basis of two proxies:**

- Number of staff winning Noble prizes and field medals.
- Number of staff included in the list of most highly cited researchers in 21 broad subject area.

**List of the 21 broad subject areas:**

1. Agricultural Sciences.
2. Biology & Biochemistry.
3. Chemistry.
4. Clinical Medicine.
5. Computer Science.
6. Ecology/Environment.
7. Economics & Business.
8. Engineering.
9. Geosciences.
10. Immunology.
11. Materials Science.

12. Mathematics.
13. Microbiology
14. Molecular Biology & Genetics.
15. Neuroscience .
16. Pharmacology.
17. Physics.
18. Plant & Animal Science.
19. Psychology/Psychiatry.
20. Social Sciences, General.
21. Space Sciences.

### **Research output :**

- Number of papers published in Nature and Science over the last five years.
- Number of papers indexed in the Thomson Reuters Science Citation Index-Expanded and Social Science Citation Index in the year preceding the year of the ranking.

### **Per Capita Performance:**

Is not measured separately but calculated from the values of the indicators described above, and using numbers of academic staff drawn from national data. Thus the ARWU reflects the overall strength of a university and that small but excellent institutions have less of a chance of figuring in ARWU.

## **1-2 THE World University Ranking – Times Higher Education**

### **1-2-1 THE -QS Quacquareli-Symonds) World University Rankings between 2004 and 2009**

Research quality, teaching quality, graduate employability and international outlook are listed as the four pillars of the world class university.

The approach used by the THE World University Ranking strongly differs from that of ARWU, While ARWU concentrates on research outputs, in the THE Ranking, a substantial share of the final score (40%) comes from a peer Review of universities, which is actually an internet reputation survey of academics. A further 10% of the final score is the result of a survey among employers.

## **Areas covered, indicators used and proxies**

**The four areas covered by the indicators are as follows:**

Two indicators – Peer review and Citations per Faculty are used to characterize research. The Employer review is used to characterize graduate employability. The only proxy used to judge the quality of teaching is the much criticized Faculty/Student Ratio. Two proxies are used to characterize the International outlook of universities: The proportion of international staff and the proportion of international students.

Peer review indicator. ‘Peer review’ in this case is not the expert visit to a university, it is an internet survey.

## **Indicators and their weighting in THE-QS Ranking in 2005-2009**

<b>Indicator</b>	<b>Explanation</b>	<b>Weighting</b>
<b>Academic Peer Review</b>	<b>Composite score drawn from peer review survey</b>	<b>40%</b>
<b>Employer Review</b>	<b>Score based on responses to employer survey</b>	<b>10%</b>
<b>Faculty/Student Ratio</b>	<b>Based on student faculty Ratio</b>	<b>20%</b>
<b>Citation per faculty</b>	<b>Based on research performance factored against the size of research body</b>	<b>20%</b>

<b>International faculty</b>	<b>Based on proportion of international faculty</b>	<b>5%</b>
<b>International students</b>	<b>Based on proportion of international students</b>	<b>5%</b>

### **1-2-2 THE -Thomson Reuters methodology for the 2010 World University Ranking**

On October 30, 2009 Times Higher Education announced that it had signed an agreement with Thomson Reuters to provide the data for its annual World University Rankings. This was followed by substantial changes in the set of indicators used and the overall methodology for the 2010 rankings.

The THE-Thomson Reuters Ranking used 13 separate indicators to compile the league tables for 2010. These 13 indicators include Research volume, income and reputation (total weight 30%), Research impact (32.5%), Economic activity and innovation (2.5%), International mix – staff and students(5%), and Teaching – the learning environment (30%).

## THE-Thomson Reuters 2010 Ranking. Broad categories, indicators and weightings

Weight (Broad Categ.)	Broad Categories	Indicators	weight
2.5%	Economic activity/Innovation	Research income from industry (per academic staff member)	2.5%
5%	International mix – staff and students		
		Ratio of international to domestic staff	3%
		Ratio of international to domestic students	2%
30%	Teaching – the learning environment		
		Reputation survey – teaching	15%
		PhDs awarded	6%
		Undergraduates admitted per academic	4.5%
		PhD awards/bachelor awards	2.25%
		Income per academic	2.25%
30%	Research – volume, income and reputation		
		Reputation survey – research	19.5%
		Research income	5.25%
		Papers per academic and research staff	4.5%
		Public research income/total research income	0.75%
32.5 %	Citation – research influence		
		Citation impact (normalized average citations per paper)	32.5%



### **1-3 World's Best Universities Ranking – US News & World Report in cooperation with Quacquarelli Symonds (QS)**

Early in 2010, the US News and World Report (USNRW) began cooperation with QS and, on 25 February 2010, posted its new 2009 ranking on the web.

This was done on a report based on the same QS results as were posted on the 2009 THE-QS World Universities Ranking and on the QS website itself. The difference between these three is that the USNRW-QS ranking publishes a list of the Top 400 universities while the THE publishes a Top 200 list and QS publishes a Top500+ list.

The description of the methodology for the USNRW 2009 World's Best Universities Ranking is the same as that given for the 2009 THE-QS Ranking, with minor changes in the text, mainly replacing THE with U.S. News World's Best Universities (USNWBW).

### **1-4 Global Universities Ranking– Reitor (Peŭmop)**

**Peŭmop = Reiter, in the original Russian language**

The Reitor Global Universities Ranking is carried out by a ranking agency, Reitor located in Moscow.

The stated purpose of the ranking is to provide the Russian academic world, which has a growing interest in the international assessment of Russian universities as a means of situating them within the global system of higher education. It also responds to the need for an instrument for assessing the competitiveness of Russian professional higher education.

### **Areas covered, indicators and proxies**

The Reiter ranking uses a number of indicators that many of the most popular global rankings do not usually use, for example:

- The number of study programs by level (bachelor, specialist)
- The number of student winners of international student academic competitions.
- The number of staff publications other than articles in scientific journals, namely monographs, textbooks, manuals and others.
- The number of certificates on discoveries and patents for inventions obtained by the university and its research officers and scholars.
- The total value of the training and laboratory facilities of the universities in US dollars.
- Proportion of teaching staff having doctoral degrees.
- The number of staff who have been awarded honorary doctorates from foreign universities.
- The number of professors who are members of the international and national Academies of Sciences.
- Characteristics of ‘socially significant’ activities of the graduates, e.g. being prominent in culture, business, politics, being government officials.
- Number of various kinds of publications by the faculty.
- More indicators on the internationalization of universities in addition to the foreign student and staff proportions

Blocks of indicators	weight	Indicators
----------------------	--------	------------

<b>Educational Activity</b>	<b>20%</b>	<b>1. No. of educational bachelor, specialist, master and doctoral programs.</b> <b>2. Student/staff ratio.</b>
<b>Research Activity</b>	<b>20%</b>	<b>3. Number of certificates in discoveries and patents since 2001.</b> <b>4. Performance of the computer centre of the university.</b> <b>5. H-Index of the university.</b>
<b>Financial maintenance</b>	<b>15%</b>	<b>6. Total budget of the university per full-time student.</b>
<b>Professional competence of the faculty</b>	<b>20%</b>	<b>7. no. of staff winning world level awards (Noble prize, field medals, Abel prize, the Lomonosov medal, .....</b> <b>8. No. of staff publications</b> <b>9. Citations and references to staff publications.</b>
<b>International Activity</b>	<b>10%</b>	<b>10. International academic communities in which the university was involved in the last academic year.</b> <b>11. Proportion of foreign students in the previous year.</b>
<b>Internet audience</b>	<b>15%</b>	<b>12. Volume of web-products.</b> <b>13. Request popularity of the University.</b> <b>14. Page rank of the main page of the university's site.</b>

## **2- Rankings concentrating on research performance only (with or without producing league tables)**

### **2-1 Leiden Ranking –Leiden University:**

The Leiden Ranking provider is the Centre for Science and Technology Studies (CWTS) at Leiden University. The stated purpose of the Leiden Ranking aims at comparison of research institutions. The Leiden Ranking does not present a composite overall score, but rather, scores according to various indicators. Each of these indicators is called a ranking and represented separately according to each indicator. Their results in the other indicators are also shown.

The Leiden Ranking covers research only, with a special focus on scientific impact. The five indicators used in the 2010 ranking are the following:

**1- Number of publications (P):**

This indicator is called the yellow indicator and refers to the number of publications in journals covered by citation indexes (Web of Science, Scopus) over a certain period of time (usually 5 years).

**2-Number of citations per publication (CPP) the blue indicator.**

The value of the CPP indicator is calculated leaving out self-citations

$$CPP = \frac{1}{P} \sum_{i=1}^P (C_i - C_s)$$

**C<sub>i</sub>**= the total number of citations for each article, **C<sub>s</sub>**= number of self-citations for the article, **P**= total number of publications.

The CPP judges the average scientific impact of the university. The disadvantage of the CPP is that it does not take into account that older articles have more citations. Also CPP does not demonstrate the overall strength of the university.

**3- Field-normalized citations per publication (CPP/FCSm) light green indicator**

The value of this indicator is calculated by dividing the result of the blue indicator CPP by the mean fields citation score (FCSm).

$$\frac{CPP}{FCSm} = \frac{\sum_{i=1}^P \frac{C_i}{P}}{\sum_{i=1}^P \frac{e_i}{P}} = \frac{\sum_{i=1}^P C_i}{\sum_{i=1}^P e_i} = \frac{C_1 + C_2 + C_3 \dots}{e_1 + e_2 + e_3 \dots}$$

$C_i$ = the number of citations of the publication,  $e_i$ = the expected no. of citations of publication  $i$  given the field and the year in which publication  $i$  was published,  $P$ = the no. of publications.

**4- Mean-normalised citation score (MNCS) darker green indicator**

$$MNCS = \frac{1}{P} \sum_{i=1}^P \frac{C_i}{e_i} = \frac{1}{P} * \left( \frac{C_1}{e_1} + \frac{C_2}{e_2} + \frac{C_3}{e_3} + \dots \right)$$

**5. The brute force indicator orange indicator  $P * CPP / FCS_m$**

To demonstrate the actual power of a research group or university in the world, the field-normalised citation number is multiplied by the total number of publications.

$$P * \frac{CPP}{FCS_m} = P * \frac{\sum_{i=1}^P C_i}{\sum_{i=1}^P e_i}$$

Thus, the Leiden “**brute force**” indicator represents the total number of publications, corrected so as to take into account their efficiency.

**2-2 Performance Rankings of Scientific Papers for World Universities – Taiwan Higher Education Accreditation and Evaluation Council Ranking (HEEACT)**

The HEEACT Ranking evaluates and ranks performance in terms of the publication of scientific papers for the top 500 universities worldwide, using data drawn from SCI and SSCI.

**The ranking has eight indicators in three main categories:** Research productivity (20% of the overall weight), Research impact (30%) and Research excellence (50%).

**The Research productivity category has two indicators:**

- No. of articles published in peer-reviewed academic journals in the past eleven years [per staff].
- No. of articles published in the previous year [per staff].

**The Research impact section has three indicators:**

- No. of citations in the last 11 years is the total number of citations of the articles of the university in question over the last 11 years, divided by the number of staff .
- No. of citations in the last two years is the total number of citations drawn from SCI and SSCI per staff .
- Average number of citations in the last 11 years is the total number of citations of a university over the last 11 years, divided by the total number of publications of the university over the last 11 years.

**The Research excellence section has three indicators:**

- H-index of the last two years, in which the value h is the number of articles published by a university in the last two years, which are cited no less than h times. This indicator constitutes 20% of the total score.
- Number of Highly Cited Papers is the absolute number of papers of the university in question that belong to the 1% most cited papers in ESI published in the last 11 years.
- Number of articles in high impact journals in the last year is the absolute number of publications of the university in question published over the last year in one of the top 5% journals by impact factor.

## Areas and indicators of the Taiwan Higher Education Accreditation and Evaluation Council Ranking

Criteria, weight	Overall performance indicators	weight
<b>Research productivity (20%)</b>	No. of articles in the last 11 years per staff	10%
	No. of articles in the previous year per staff	10%
<b>Research impact (30%)</b>	No. of citations in the last 11 years per staff	10%
	No. of citations in the last two years per staff	10%
	Average no. of citations [per publication] of the last 11 years	10%
<b>Research excellence (50%)</b>	H-index of the last two years	20%
	No. of highly cited papers in the last 11 years	15%
	No. of articles in high impact journals in the last year	15%

### Presentation of the Ranking

The HEEACT Ranking results are presented as a Top 500 list of universities listed by 1-100, 101-200, 201-300, 301-400 and 401-500 tables. Users can choose to see lists ranked by the total score or according to the score for each indicator. Ranking lists by continent and by country are also available.

**HEEACT also publishes the results of rankings in the six fields:**

1. Agriculture and Environment Sciences
2. Engineering, Computing and Technology
3. Clinical Medicine
4. Life Sciences
5. Natural Sciences
6. Social Sciences.

## **2-3 Assessment of University-Based Research– European Commission WG AUBR**

In 2008, the Directorate General for Research of the European Commission established a Working Group on the Assessment of University-Based Research (hereinafter WG AUBR). Some of the WG AUBR's considerations concerning the research indicators used, either directly or indirectly, in global university rankings are reproduced below:

- **Count of publications and other research outputs:**

Different disciplines produce different types of research outputs. Also, this indicator puts emphasis on quantity of publications.

- **Number/percentage of publications in top- ranked, high impact journals:**

Especially in social sciences and humanities, expert rankings do not correlate very well with impact factors. In these fields, and in engineering, other sources are important as well (books, proceedings).

- **Citations:**

Citations are of limited value in disciplines not well covered by the citation indexes, especially certain parts of social sciences, humanities and engineering.

- **Number of prestigious national/international awards and prizes.**

There are no agreed equivalences that apply internationally.

- **Visiting Research Appointments.**

There are no agreed equivalences that apply internationally and facilitate comparison across disciplines.

- **Editorial and refereeing for prestigious national/international journals/publishers.**

There are no agreed equivalences that apply internationally.

- **Commercialization of intellectual property created through patents, licenses or start ups.**



Patents are a very poor indicator of commercialization. They are sensitive to national context and to discipline.

- **Number of collaborations and partnerships.**

It can be difficult to capture and verify the data due to lack of clarity.

- **Percentage of ‘research active’ staff per total academic staff:**

There is no clear definition of ‘research active’.

- **Level of funding attracted by researchers and universities from external sources:**

Levels of external funding vary greatly across disciplines.

- **Research income per academic staff:**

Comparability is dependent upon institutional mission, context and discipline.

- **Total R&D investment:**

It is difficult to get valid, comparable institutional data.

- **Research infrastructure and facilities:**

It is difficult to get valid, comparable data, favours older, well-endowed universities.

An important result presented in the final report of the WG AUBR is the Multidimensional Research Assessment Matrix. This matrix allows for the identification of appropriate indicators from among five categories– Research productivity, Quality and scholarly impact, Innovation and social benefit, Sustainability and scale and Research infrastructure – depending on the purpose of the assessment: to allocate resources, to drive research mission differentiation, to increase regional/community engagement, to improve research performance, to assess value-for-money or cost-benefit of research, to encourage international co-operation, or to increase multidisciplinary research.

### **3- Multirankings**

Multirankings are university rankings that use a greater number of indicators and usually do not produce a league table, but present instead results of individual indicators or groups of indicators.

### **3-1 CHE Ranking – Centre for Higher Education Development/ die Zeit**

#### **3-1-1 CHE University Ranking:**

The German Centre for Higher Education Development (CHE) carries out a multi-indicator ranking which was first published in 1998.

The purpose of the CHE University Ranking is to provide fair, informative and qualified information for young people who are choosing an HEI for their studies.

The results of the CHE University Ranking can be visualized in various ways. It can be considered both as a rating and a ranking.

The results for several indicators are presented where it shows only whether the university belongs to the top, middle or bottom group for a particular indicator.

#### **Areas covered, indicators and proxies**

One of the main aims of the CHE Ranking is to provide potential students with information underpinning their choice of HEI. For this reason, the CHE Ranking covers all fields of study.

The indicators actually used in the different versions of the CHE University Ranking are mainly based upon students' assessment of a number of particularly relevant aspects, such as teaching support, the overall evaluation of teaching quality, the quality of libraries and IT, lecture and seminar rooms and university sports.

It also covers aspects such as the university's research orientation and preparation for the labour market. Assessments by academics are used less often. They mainly concern the reputation of research and/or teaching in other universities.

The principles underpinning the selection of the five indicators used for the Compact Ranking seem to be the following:

1. An indicator based on student assessment of the overall study situation is used for all programs.
2. An indicator based on professors' opinions is also applied to all programs. In most cases, this is the reputation indicator.
3. The Teaching support indicator, which is again based on students' assessment, is often used as a second indicator on studies and teaching.
4. A second research indicator is often used, regarding either Citations per publication (in sciences, engineering, medicine) or Third-party funding of research per faculty member.
5. At least one indicator on study-related infrastructure is used. In most cases, this is the students' assessment of either libraries or laboratories.

### **3-1-2 CHE Excellence Ranking**

The CHE Excellence Ranking identifies universities, or rather the appropriate departments of those universities, which are excellent in biology, chemistry, mathematics, physics, political science, economics and psychology. The CHE Excellence Ranking does not use the results to produce a single league table and does not combine the results of individual rankings into a final score. Generally no weights are applied to the individual indicators.

The CHE Excellence Ranking is a two-step exercise. In the first stage, universities which excel in the specific fields are pre-selected. This selection is based on the number of stars awarded on the basis of pre-selection indicators. The pre-selected departments are then analyzed in depth.

The pre-selection is based on the no of stars that a university has received in the respective field.

For economics, political sciences and psychology, the institution is preselected. if it has two stars altogether, with at least one of them in publications or citations.

For natural sciences and mathematics, the institution is pre-selected if it has two stars in publication or citation indicators or three stars altogether.

A star is allocated to those institutions which account for at least 50% of the total achievement in the field. However, to be considered the university must have at least 3000 publications in the Web of Science, including publications from 1997-2007 for the natural sciences and mathematics, as well as publications in all other subjects for 1999-2006.

## **Indicators used for Pre-Selection**

### **1. Number of publications in the Web of Science:**

A star is allocated to those institutions which belong to the group of institutions with a high number of publications, and as a group, account for 50% of the total.

### **2. Citations :**

Field-normalised citations per publication (CPP/FCSm). This indicator is calculated as a ratio between the no. of citations per publication and the average no. of citations per publication in the same field in the same year (FCSm).

### **3. Outstanding researchers: (apply to the natural sciences and mathematics):**

The university receives a star in a particular field if any Nobel Prize winners, winners of Korber European Science awards or Fields medallists in mathematics are currently teaching at the institution.

### **4. Number of projects in the Marie Curie program (applied to the natural sciences and mathematics):**

In practice, to obtain a star, three projects are needed in biology, two in physics and chemistry and only one in mathematics.

### **5. Student mobility (applied to all fields):**

A star is allocated to universities with the greatest mobility and which belong to the group that accounts for 80% of mobile students (50% in sciences) overall.

The context appears to suggest that the reference group is that of incoming postgraduate students.

The overall number of mobile students needed to obtain a star varies from 35 in economics to 20 in physics.

**6. Teaching staff mobility (applied to all fields):**

Staff members who have undertaken a short teaching period in the context of the Erasmus program are counted to this indicator, with points being assigned to both sending and the receiving institutions. In practice, 3-4 mobile teachers are enough to receive a star.

**7. Erasmus Mundus Master (applied in all fields):**

A star is allocated for a joint master program in the Erasmus Mundus Program. A star is awarded to only one department, rather than all partners, because, as noted by CHE, other partners may cover parts of the program.

**8. European Research Council grants (applied to the natural sciences and mathematics):**

A star is given to both the sending and receiving institution for each grant allocated in 2007 and 2008.

**9. Book citations (applied to economics, political science and psychology):**

CHE states that, while the book citations indicator cannot provide an analysis that corresponds precisely to article citations, it is an important way to avoid discrimination against those fields in which book publications constitute the main way of publishing research results.

**In-Depth Analysis:**

The pre-selected universities are analysed further. Data is collected using institutional surveys and surveys of students in master and doctoral studies. Students answer questions regarding, for instance, the overall study situation, availability of

advisors and quality of counselling and career centers, examinations, laboratories, library, training, study organization, IT infrastructure, counselling, websites, rooms, social relations, conference attendance, research community, time taken to complete a PhD project, workrooms and workshops. The institutional survey includes various types of information on staff, students and the university.

### **Presentation of results:**

The results of the CHE Excellence Ranking are presented on the Die Zeit website. When selecting one of the academic fields covered by this ranking, the ‘Excellence list’ of those institutions that have been pre-selected in the chosen field appears. Lists are in alphabetical order.

Overall, the CHE Excellence Ranking is a good information tool allowing potential postgraduate students to determine which universities are excellent in their particular field of interest

### **3-2 U-Map classification of HEI s – CHEPS**

The original aim of the U-Map tool was to design a European higher education classification tool that reflects the variety of missions and profiles of European higher education institutions. The tool will focus on the differences between institutions (institutional diversity) in terms of their missions and profiles. The U-Map project has been funded by the European Union and is led by the Centre for Higher Education Policy Studies (CHEPS) of the University of Twente, the Netherlands.

U-Map is a multi-indicator tool that does not calculate an overall final score for a higher education institution, and hence does not produce a league table.

The indicators of this method are grouped into six ‘profiles’: Education profile, Student profile, Research Involvement, Knowledge exchange, International orientation and Regional engagement.

### **3-3 European Multidimensional University Ranking System(U-Multirank)**

The European Multidimensional University Ranking System (U-Multirank) is an EU-funded project aimed at creating a global ranking of universities.

According to the objectives set by the ranking should be multi-dimensional, i.e. covering the various missions of institutions, such as education, research, innovation, internationalization, community outreach and employability; independent, i.e. not be run by public authorities or universities; and global, i.e. cover institutions inside and outside of Europe.

The U-Multirank project produces two rankings: a Focused institutional ranking and a Field-based ranking.

The Focused institutional ranking enables comparisons of institutions according to a single dimension of institutional activity, such as education, research, internationalization or knowledge transfer. The different dimensions will not be combined into an overall score.

The U-Multirank initial list of indicators has been largely based on those developed by CHE for the CHE University Rankings for Germany.

Some indicators are to be used for both the Focused institutional ranking and the Field-based ranking, while others will be used for only one of these purposes.

One can only agree with the U-Multirank team that the WoS and Scopus databases do not adequately reflect research in the arts and humanities, that books are not covered as well as journals. However, it remains to be seen how the U-Multirank project plans to avoid those pitfalls.

The interim report states that the bibliometric indicators will be based on Thomson Reuters and Scopus databases, and that patent databases will be used in addition. At the same time, self-reported university data will play a significant role in both the institutional and the field based U-Multirank rankings.

The self-reported data will relate to staff, students, resources and facilities, to research, knowledge transfer and regional engagement, as well as to teaching and learning. Student surveys will be the third type of data source used. U-Multirank will not draw on reputation surveys of academics, because the latter do not work well in international rankings.

## **4. Web Rankings**

### **4-1 Webometrics Ranking of World Universities:**

The Webometrics Ranking of World Universities was launched in 2004. It is an initiative of the Cybermetrics Lab, a research group of the Centro de Ciencias Humanas y Sociales (CCHS), which is part of the National Research Council of Spain.

The stated aim of the project is to convince academic and political communities of the importance of web publication not only for dissemination of academic knowledge but for measuring scientific activities, performance and impact, too.

The Webometrics Ranking measures the volume, visibility and impact of university web pages with a special emphasis on scientific output.

**The overall volume of information published is measured by three indicators:**

1. No. of pages on the academic website of the university.
2. No. of rich files (.pdf, .ppt, .doc and .ps) published.
3. No. of published papers retrieved from Google Scholar.

Size indicators are a proxy for the intensity of the academic production of the university, combining research publications, presentations, teaching materials, raw data, drafts and other documents' relevance for research and teaching, as well as administrative information from the university.

The Visibility of a university on the web is characterized by the number of external links established to their website, thus revealing the extent to which the university is interesting to others.

Descriptions and weights of the four indicators are provided in following table.



## Indicators of the Webometric World University Ranking

Indicators	Definition	Description	Weight
Visibility (external links)	Total number of unique external links received (inward links) by a site can be only confidently obtained from Yahoo Search.	Results are log-normalised to 1 for the highest value and then combined to generate the rank.	50%
Size of university web	No. of pages recovered from: Google, Yahoo, Live Search and Exalead.	For each search engine, results are log normalised to 1 for the highest value.	20%
Rich files	Number of Adobe Acrobat (.pdf), Adobe PostScript (.ps), Microsoft Word(.doc) and Microsoft PowerPoint (.ppt) files.	Numbers of these file types are extracted using Google. The results for each file type are log-normalised and then merged.	15%
Scholar	Number of papers and citations is extracted from Google Scholar.	These results from the Scholar database represent papers, reports and other academic items.	15%

## 5- Benchmarking based on learning outcomes

### 5.1 Assessment of Higher Education Learning Outcomes Project (AHELO)

This concerns with what students in higher education know and can do upon graduation. AHELO will therefore be able to provide information on those teaching strategies that are most effective in ensuring that envisaged learning outcomes are achieved.

Three testing instruments are being developed: one for measuring generic skills and two for testing discipline-specific skills in economics and in engineering.

However, using learning outcomes for comparing the performance of teaching and learning processes can only be successful if the participating institutions and countries have actually adopted a learning outcomes-based approach in both the teaching process and in student assessment.

While linking programs and specific courses to learning outcomes is an accepted approach within the European Higher Education Area, recent progress reports of the Bologna Process

demonstrate that it will take time before this practice becomes general.

### **Analysis of the results**

- ❑ The most popular global university rankings (ARWU, THEQS and THE-Thomson Reuters, USNWR, HEEACT, Reitor and others) consider the world's top research universities only.
- ❑ Thus, out of around 17,000 universities in the world, the global rankings consider only a tiny proportion.
- ❑ Rankings are hotly debated and strongly criticized. However, despite their many shortcomings, flaws and biases, "rankings enjoy a high level of acceptance among stakeholders and the wider public because of their simplicity and consumer-type information".
- ❑ Among the positive implications of university rankings are the following: university rankings could help students choose the appropriate university in their home country or abroad.
- ❑ Rankings which produce global league tables, cannot provide a diagnosis of the whole higher education system, as they usually concern only the top research universities.
  
- ❑ current global rankings provide little useful information on issues such as the quality of teaching and learning, accessibility, regional involvement, involvement in lifelong learning, cost efficiency and other aspects

### **Main Conclusions**

1. Global classifications and rankings of universities has galvanized the world of higher education. It is unable to avoid national and international comparisons, and this has caused changes in the way universities function.
2. Ranking and particularly the global league tables give stable results for only 700-1000 universities which is only a small portion of approximately 17000 universities in the world. The majority of the world's universities are left out of the equation.

3. The lack of suitable indicators is most apparent when measuring university teaching performance, for which there are no suitable proxies. The situation is better when evaluating research performance.
4. At present, it would be difficult to argue that the benefits offered by the information that rankings provide, as well as the increased 'transparency,' are greater than the negative effects.
5. New attempts to develop classifications, rankings and ratings targeting all higher education institutions and their various missions, such as the AUBR EU Assessment of University-Based Research, U-Map, U-Multirank and AHELO, all aim to improve the situation. However, it is too early to tell how these new tools will work; they are still at various stages of development or pilot implementation, and all of them still face difficult issues, particularly problems of data collection and the development of new proxies.

HIGHER EDUCATION POLICY DECISION SHOULD NOT  
BE BASED SOLELY ON RANKINGS DAT