
WORLD FLASH ON BASIC RESEARCH

**Journal gatekeepers indicator-based top universities of
the world, of Europe and of 29 countries – A pilot study**

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Introduction

Universities are the main flagships and real incubators of higher education and scientific research. The primordial question for every research university is how to engage the competition for quality. Their evaluation was and is of paramount importance because they live in an intensely marketplace. Such evaluations materialize most frequently in international and national ranking lists which are published as e.g. „world class” resp. „league” tables. A whole series of such rankings is available²⁻¹⁰ in the literature.

Due to the multidimensional nature and complexity of universities, reliable indicators of performance are rare.

However, poorly planned and misleading rankings continue to appear, in spite of highly critical voices on some of them.^{11,12}

In general, the rankings are based on composite indicators built from the combination of partial ones as presented in Figure 1.

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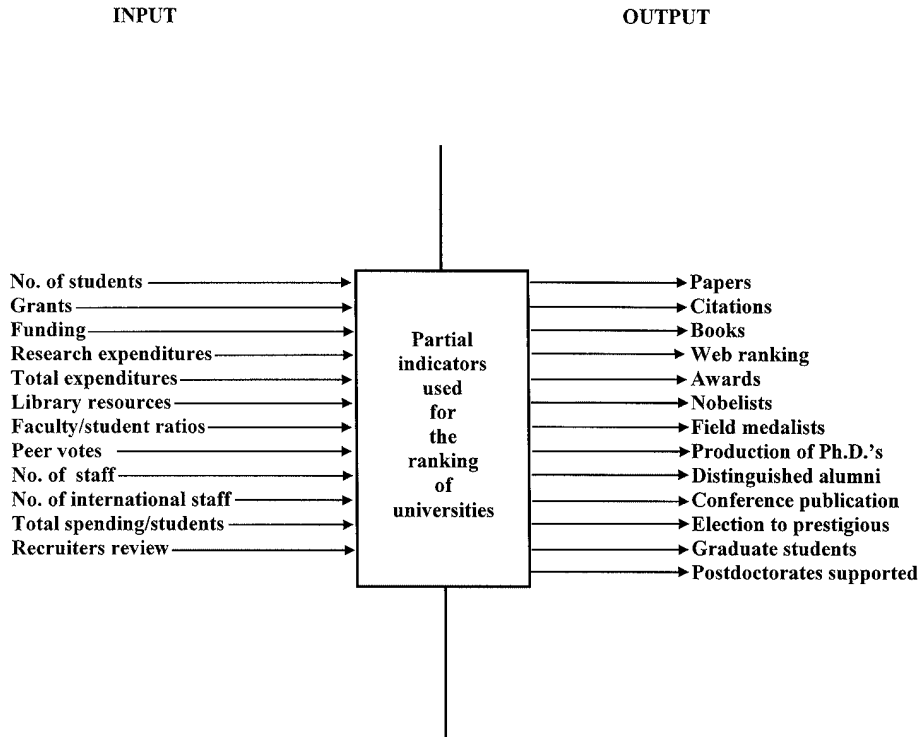


Figure 1. Individual input-output indicators

In the present paper some preliminary experiments are reported on building league tables of world universities based on only one output indicator, the gatekeepers of international science journals. Some previous results by using this indicator for other evaluative purposes were reported in various papers.¹³⁻¹⁵ By watching the series of input and output indicators in Figure 1, it seems that the gatekeeper one is the one reflecting the highest professional quality of the items it takes into account.

As we have previously shown Nobelists do not represent an un-equivocal science indicator.¹⁶

Basics

Journal gatekeeping indicators are based on the fact that for the satisfactory operation of the international system of basic research in the sciences the screening activity of journal editorial boards, which guarantee the professional standard of science

journals, is of paramount importance. It is considered the critical mentality and decisions of journal editors have so far protected and will also warrant in the future the social and intellectual integrity of science. The members of the editorial and advisory boards of journals are rightfully considered the gatekeepers of these journals. These gatekeepers in controlling the system of manuscript evaluation and selection occupy powerful strategic positions in the collective activity of science. Our previous results have proven that these indicators, which are based on quantification of gatekeepers correlate well with science indicators built on journal paper productivity and citations.¹³

The use of science journal gatekeepers as indicators present the following advantages:

1. Gatekeepers are professionally ranked higher than authors because the selection of them is made on the base of the quality of their scientific past performance.
2. Their identification as members of the editorial and advisory boards of science journals is simple and un-equivocal.
3. Indicators based on journal gatekeepers are more reliable than those built on papers and citations where multi-authored papers present problems of allocation. The same drawback is present in the allocation of citations to countries, institutions, individuals, which rises the problem of fractional counting. This problem doesn't exist in the case of gatekeepers.

Our present gatekeeper database refers to the year 2005 and included the gatekeepers of 20 core journals of each of 12 science fields, i.e., a total of 240 science journals selected according to the procedure outlined in Ref. 14. The total number of gatekeepers in the database was near to 13000.

A first identifying of allocation of gatekeepers to universities has been made by a special algorithm. The final cleaning of the results has followed a manual procedure. The number of gatekeepers on the basis of which a university has been included in the tables was different for the world list and for the different countries.

The top university on each table has been allocated a value of 100% and all ranking positions were related to this value.

As some of the universities included in the rankings had a small number of gatekeepers some of our national tables are quite short.

Results

Tables

Tables 1–31 (see Appendix) refer to the ranking of top universities of the world, of Europe and of 29 countries.

Rank correlations

Finally we have compared the rank correlations between the following rankings of the top 100 or so world universities: the Times,⁹ Shanghai⁶ and Spanish² (webometrics) and the present ones. The results are shown in Figures 2–4 and Tables 32–34. As visible the correlations are quite weak, testifying that the choice of indicators the rankings are based on is significantly influencing the rankings.

Remarks

1. We have to accentuate that the results presented in this paper represent a first attempt to find out whether the use of the gatekeepers indicator could give some believable results on the ranking of universities.
2. The results were obtained by the use of only one indicator, but this indicator is remarkably high as its professional quality value is concerned.
3. The database from which the data are derived included 480 science journals and approximately 13000 gatekeepers. It cannot be excluded that by using a more comprehensive database different rankings could be obtained.
4. The present gatekeepers indicator could be used as a part of a composite indicator together with one or many of those indicated in Figure 1.

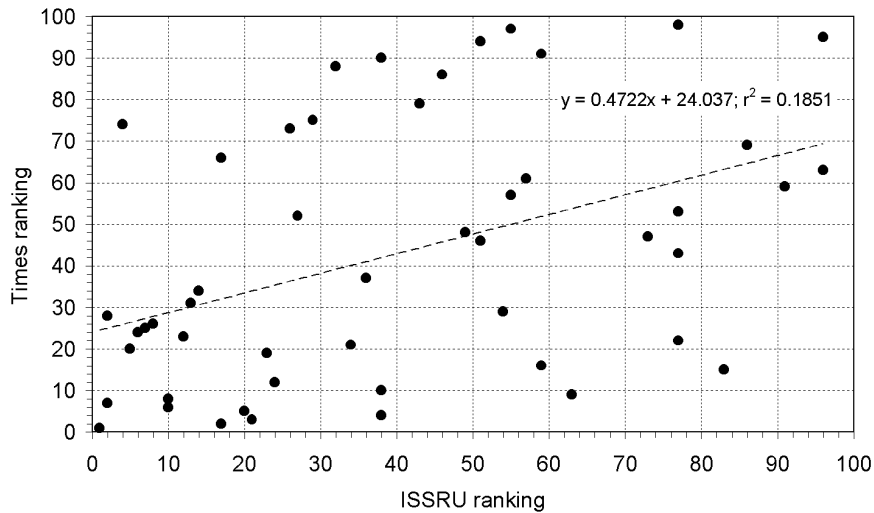


Figure 2. Scatter plot of rankings: ISSRU vs Times ($r = 0.43$)

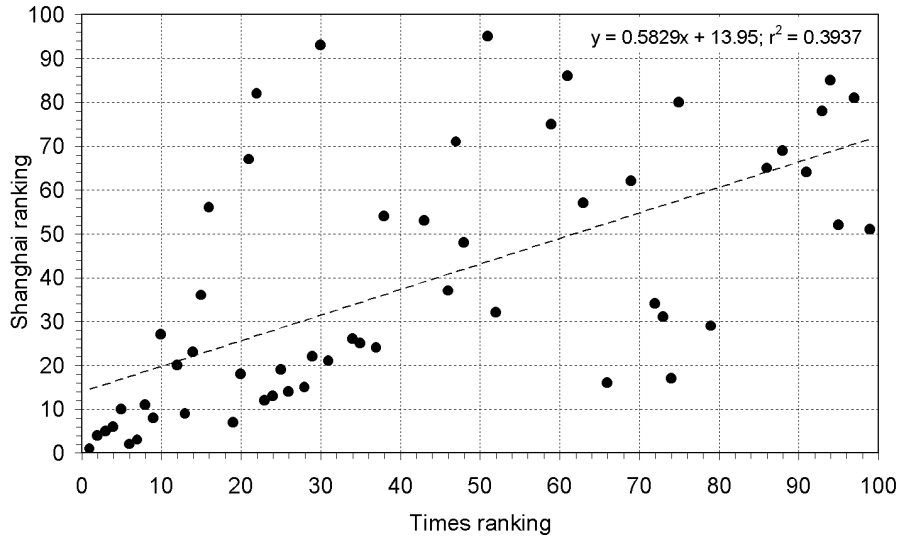


Figure 3. Scatter plot of rankings: Shanghai vs Times ($r = 0.63$)

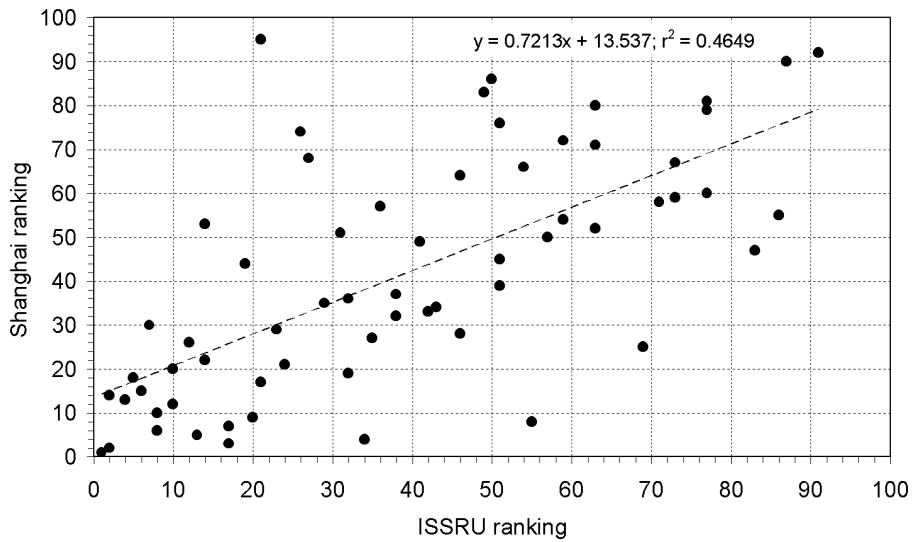


Figure 4. Scatter plot of rankings: Shanghai vs ISSRU ($r = 0.75$)

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Appendix

Table 1. Top universities of the world

Rank	University	Country	%
1	Harvard University	USA	100.00
2-3	Stanford University	USA	51.18
2-3	University of Pennsylvania	USA	51.18
4	University of Washington	USA	50.00
5	University of California, San Francisco	USA	45.27
6	University of California, San Diego	USA	41.42
7	Johns Hopkins University	USA	41.12
8-9	University of California, Los Angeles	USA	37.57
8-9	Washington University in St. Louis	USA	37.57
10-11	University of Cambridge	UK	33.14
10-11	Yale University	USA	33.14
12	Cornell University	USA	32.84
13	University of Michigan, Ann Arbor	USA	31.95
14-15	University College London	UK	31.36
14-15	University of North Carolina	USA	31.36
16	University of Illinois, Chicago	USA	29.59
17-18	University of California, Berkeley	USA	28.99
17-18	University of Wisconsin	USA	28.99
19	University of Pittsburgh	USA	26.30
20	University of Oxford	UK	26.04
21-22	Massachusetts Institute of Technology	USA	25.74
21-22	Vanderbilt University	USA	25.74
23	Columbia University	USA	25.44
24	University of Tokyo	Japan	24.85
25	Emory University	USA	23.96
26	Northwestern University	USA	23.08
27	Duke University	USA	22.78
28	University of Virginia	USA	22.19
29-30	Boston University	USA	21.60
29-30	University of Texas, Dallas	USA	21.60
31	University of Minnesota	USA	20.71
32-33	Case Western Reserve University	USA	20.41
32-33	University of Florida	USA	20.41
34	McGill University	Canada	19.23
35	University of California, Davis	USA	18.93
36	University of Toronto	Canada	18.64
37	Baylor College of Medicine	USA	17.16
38-40	Swiss Federal Institute of Technology, Zürich	Switzerland	16.86
38-40	California Institute of Technology	USA	16.86
38-40	University of Alabama	USA	16.86
41	Rockefeller University	USA	15.98
42	University of Southern California	USA	15.68
43	New York University	USA	14.79
44	University of Texas, Houston	USA	14.20
45	University of Iowa	USA	13.91
46-48	Mount Sinai School of Medicine	USA	13.61
46-48	Pennsylvania State University	USA	13.61
46-48	University of Rochester	USA	13.61
49	University of Edinburgh	UK	13.31
50	Pierre & Marie Curie University	France	13.11
51	Karolinska Institute	Sweden	13.02

Table 1. (continued)

Rank	University	Country	%
52–54	University of Vienna	Austria	12.72
52–54	University of British Columbia	Canada	12.72
52–54	University of California, Irvine	USA	12.72
55	Kyoto University	Japan	12.43
56	King's College London	UK	12.13
57–58	Brown University	USA	11.83
57–58	University of Texas, San Antonio	USA	11.83
59–61	Australian National University	Australia	11.54
59–61	University of Bristol	UK	11.54
59–61	University of Colorado, Boulder	USA	11.54
62	University of Massachusetts, Worcester	USA	11.24
63	University of Utrecht	The Netherlands	10.95
64–68	Princeton University	USA	10.95
64–68	Rutgers University	USA	10.95
64–68	University of Colorado at Denver	USA	10.95
64–68	University of Georgia	USA	10.95
64–68	University of Utah	USA	10.95
69–70	University of Arizona	USA	10.36
69–70	University of Illinois, Urbana-Champaign	USA	10.36
71–72	Ohio State University	USA	10.06
71–72	University of Maryland, College Park	USA	10.06
73–76	University of Western Ontario	Canada	9.76
73–76	University of Heidelberg	Germany	9.76
73–76	University of Zürich	Switzerland	9.76
73–76	Albert Einstein College of Medicine	USA	9.76
77–82	University of Melbourne	Australia	9.47
77–82	Catholic University Leuven	Belgium	9.47
77–82	University of Amsterdam	The Netherlands	9.47
77–82	University of Manchester	UK	9.47
77–82	Michigan State University	USA	9.47
77–82	University of Cincinnati	USA	9.47
83–85	University of Helsinki	Finland	9.17
83–85	George Washington University	USA	9.17
83–85	University of Texas, Austin	USA	9.17
86	Osaka University	Japan	8.88
87–90	Leiden University	The Netherlands	8.58
87–90	Oregon State University	USA	8.58
87–90	Tufts University	USA	8.58
87–90	University of Maryland, Baltimore	USA	8.58
91–93	Georgetown University	USA	8.28
91–93	Purdue University	USA	8.28
91–93	University of Tennessee	USA	8.28
94–95	Indiana University, Bloomington	USA	7.69
94–95	Texas A&M University	USA	7.69
96	University of Copenhagen	Denmark	7.40
97–102	Ludwig Maximilians University of Munich	Germany	7.40
97–102	Technical University of Munich	Germany	7.40
97–102	Lund University	Sweden	7.40
97–102	University of Leeds	UK	7.40
97–102	Oregon Health and Sciences University	USA	7.40
97–102	University of Medicine and Dentistry of New Jersey	USA	7.40

Table 2. Top universities of Europe

Rank	University	Country	%
1	University of Cambridge	UK	100.00
2	University College London	UK	94.64
3	University of Oxford	UK	78.57
4	Swiss Federal Institute of Technology, Zürich	Switzerland	50.89
5	University of Edinburgh	UK	40.18
6	Karolinska Institute	Sweden	39.29
7–8	University of Vienna	Austria	38.39
7–8	Pierre & Marie Curie University	France	36.61
9	King's College London	UK	36.61
10	University of Bristol	UK	34.82
11	University of Utrecht	The Netherlands	33.04
12–13	University of Heidelberg	Germany	29.46
12–13	University of Zürich	Switzerland	29.46
14–16	Catholic University Leuven	Belgium	28.57
14–16	University of Amsterdam	The Netherlands	28.57
14–16	University of Manchester	UK	28.57
17	University of Helsinki	Finland	27.68
18	Leiden University	The Netherlands	26.89
19–23	University of Copenhagen	Denmark	22.32
19–23	Ludwig Maximilians University of Munich	Germany	22.32
19–23	Technical University of Munich	Germany	22.32
19–23	Lund University	Sweden	22.32
19–23	University of Leeds	UK	22.32
24–28	Humboldt University of Berlin	Germany	21.43
24–28	Johannes Gutenberg University of Mainz	Germany	21.43
24–28	University of Bonn	Germany	21.43
24–28	University of Hamburg	Germany	21.43
24–28	University of Birmingham	UK	21.43
29–30	University of Florence	Italy	20.54
29–30	University of Wales	UK	20.54
31–33	University of Basel	Switzerland	19.64
31–33	University of East Anglia	UK	19.64
31–33	University of Nottingham	UK	19.64
34–36	Tel Aviv University	Israel	18.75
34–36	University of Geneva	Switzerland	18.75
34–36	University of Glasgow	UK	18.75
37–40	Albert-Ludwigs University of Freiburg	Germany	17.86

(continued on the next page)

Table 2. (continued)

Rank	University	Country	%
37–40	Friedrich-Alexander University of Erlangen-Nürnberg	Germany	17.86
37–40	Hebrew University	Israel	17.86
37–40	Free University of Amsterdam	The Netherlands	17.86
41–44	Johann Wolfgang Goethe University	Germany	16.96
41–44	University of Milan	Italy	16.96
41–44	University of Lausanne	Switzerland	16.96
41–44	University of Groningen	The Netherlands	16.96
45–50	Free University of Brussels	Belgium	16.07
45–50	University of Aarhus	Denmark	16.07
45–50	Eberhard Karls University of Tübingen	Germany	16.07
45–50	Georg August University of Göttingen	Germany	16.07
45–50	Stockholm University	Sweden	16.07
45–50	University of Newcastle upon Tyne	UK	16.07
51–53	University of Oslo	Norway	15.18
51–53	University of Uppsala	Sweden	15.18
51–53	University of Liverpool	UK	15.18
54–57	University of Karlsruhe	Germany	14.29
54–57	La Sapienza University	Italy	14.29
54–57	Erasmus University	The Netherlands	14.29
54–57	University of Southampton	UK	14.29
58–62	University of Leuven	Belgium	13.39
58–62	Technical University of Denmark	Denmark	13.39
58–62	University Paris-Sud	France	13.39
58–62	University Paul Sabatier	France	13.39
58–62	University of Bern	Switzerland	13.39
63–68	University of René Descartes	France	12.50
63–68	University of Munster	Germany	12.50
63–68	University of Barcelona	Spain	12.50
63–68	Cardiff University	UK	12.50
63–68	University of Dundee	UK	12.50
63–68	University of Sheffield	UK	12.50
69–75	Ecole Normale Supérieure	France	11.61
69–75	University Louis Pasteur Strasbourg	France	11.61
69–75	University of Montpellier II	France	11.61
69–75	University of Cologne	Germany	11.61
69–75	Trinity College Dublin	Ireland	11.61
69–75	Royal Free and University College Medical School	UK	11.61
69–75	University of Leicester	UK	11.61

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Table 2. (continued)

Rank	University	Country	%
76–85	Vienna University of Technology	Austria	10.71
76–85	Free University of Berlin	Germany	10.71
76–85	Philipps University of Marburg	Germany	10.71
76–85	Ruhr University of Bochum	Germany	10.71
76–85	University of Padova	Italy	10.71
76–85	University of Rome	Italy	10.71
76–85	Umea University	Sweden	10.71
76–85	University Hospitals of Geneva	Switzerland	10.71
76–85	Radboud University	The Netherlands	10.71
76–85	Wageningen University	The Netherlands	10.71
86–94	Ghent University	Belgium	10.71
86–94	University of Antwerp	Belgium	10.71
86–94	Helsinki University of Technology	Finland	10.71
86–94	Heinrich-Heine University of Düsseldorf	Germany	10.71
86–94	Technion - Israel Institute of Technology	Israel	10.71
86–94	Göteborg University	Sweden	10.71
86–94	Swiss Federal Institute of Technology, Lausanne	Switzerland	10.71
86–94	Technical University of Delft	The Netherlands	10.71
86–94	Technical University of Eindhoven	The Netherlands	10.71
95–100	University of the Méditerranée	France	8.93
95–100	University of Aachen	Germany	8.93
95–100	University of Würzburg	Germany	8.93
95–100	Queen's University of Belfast	UK	8.93
95–100	University of Aberdeen	UK	8.93
95–100	University of Sussex	UK	8.93

Table 3. Top universities in Argentina

Rank	University	%
1	University of Buenos Aires	100.00
2	University of La Plata	40.00
3	Catholic University of Cordoba	20.00
4	Universidad de Cordoba	20.00
5	Universidad Nacional de Cordoba	20.00
6	Universidad Nacional de Litoral	20.00
7	Universidad Nacional de Qui'lmes	20.00

Table 4. Top universities in Austria

Rank	University	%
1	University of Vienna	100.00
2	Vienna University of Technology	27.91
3	University of Innsbruck	16.28
4	Medical University of Vienna	11.63

Table 5. Top universities in Australia

Rank	University	%
1	Australian National University	100.00
2	University of Melbourne	82.05
3-4	University of Queensland	58.97
3-4	University of Sydney	58.97
5	University of New South Wales	43.59
6	Monash University	35.90
7-8	Flinders University	28.21
7-8	University of Western Australia	28.21
9-10	Macquarie University	23.08
9-10	University of Adelaide	23.08

Table 6. Top universities in Belgium

Rank	University	%
1	Catholic University Leuven	100.00
2	Free University of Brussels	38.30
3-4	Ghent University	23.40
3-4	University of Antwerp	23.40

Table 7. Top universities in Brazil

Rank	University	%
1	University of Sao Paulo	100.00
2	Pontificia Universidade Catolica do Rio de Janeiro	25.00
3	State University of Londrina	25.00
4	State University of Campinas	12.50
5	Universidade de Brasilia	12.50
6	Universidade Estadual de Campinas	12.50
7	Universidade Federal de Minas Gerais	12.50
8	University of Bahia	12.50
9	University of Santa Catarina	12.50

Table 8. Top universities in Canada

Rank	University	%
1	McGill University	100.00
2	University of Toronto	96.92
3	University of British Columbia	66.15
4	University of Western Ontario	50.77
5	University of Alberta	36.92
6	University of Calgary	30.77
7	University of Montreal	26.15
8	McMaster University	21.54
9	University of Ottawa	18.46
10	University of Guelph	16.92
10–11	Dalhousie University	15.38
10–11	University of Waterloo	15.38
13–15	Simon Fraser University	13.85
13–15	University of Laval	13.85
13–15	University of Manitoba	13.85
16–17	Queen's University	10.77
16–17	University of Victoria	10.77
18	Memorial University of Newfoundland	9.23
19	York University	7.69
20	University of Saskatchewan	6.15

Table 9. Top universities in China

Rank	University	%
1	University of Hong Kong	100.00
2	Peking University	50.00
3	City University of Hong Kong	30.00
4	Hong Kong University of Sci./Tech.	30.00
5	Nanjing University	30.00
6	Tsinghua University	30.00
7	Chinese University of Hong Kong	20.00
8	Fudan University	20.00
9	Hong Kong Polytechnic University	20.00
10–18	China Normal University	10.00
10–18	Dalian University of Technology	10.00
10–18	Hong Kong Baptist University	10.00
10–18	Huazhong Agricultural University	10.00
10–18	Hunan University	10.00
10–18	Shanghai University	10.00
10–18	Sichuan University	10.00
10–18	University Changchun	10.00
10–18	Zhejiang and Northeastern Universities	10.00

Table 10. Top universities in Denmark

Rank	University	%
1	University of Copenhagen	100.00
2	University of Aarhus	72.00
3	Technical University of Denmark	60.00
4	University of Southern Denmark	32.00
5	Royal Veterinary and Agricultural University	24.00

Table 11. Top universities in Finland

Rank	University	%
1	University of Helsinki	100.00
2	Helsinki University of Technology	35.48
3	University of Kuopio	29.03
4	University of Oulu	22.58
5	University of Turku	12.90

Table 12. Top universities in France

Rank	University	%
1	Pierre & Marie Curie University	100.00
2-3	University Paris-Sud	36.59
2-3	University Paul Sabatier	36.59
4	University of René Descartes	34.15
5-7	Ecole Normale Supérieure	31.71
5-7	University Louis Pasteur Strasbourg	31.71
5-7	University of Montpellier II	31.71
8	University of the Méditerranée	24.39
9	University of Nice-Sophia Antipolis	21.95
10-12	College de France	19.51
10-12	Ecole Polytechnique	19.51
10-12	University Denis Diderot	19.51
13-14	University Joseph Fourier	17.07
13-14	University of Caen Basse-Normandie	17.07
15	University of Bordeaux 2 - Victor Segalen	14.63
16	Paris 12 Val de Marne University	12.20

Table 13. Top universities in Germany

Rank	University	%
1	University of Heidelberg	100.00
2-3	Ludwig Maximilians University of Munich	75.76
2-3	Technical University of Munich	75.76
4-7	Humboldt University of Berlin	72.73
4-7	Johannes Gutenberg University of Mainz	72.73
4-7	University of Bonn	72.73
4-7	University of Hamburg	72.73
8-9	Albert-Ludwigs University of Freiburg	60.61
8-9	Friedrich-Alexander University of Erlangen-Nürnberg	60.61
10	Johann Wolfgang Goethe University	57.58
11-12	Eberhard Karls University of Tübingen	54.55
11-12	Georg August University of Göttingen	54.55
13	University of Karlsruhe	48.48
14	University of Münster	42.42
15	University of Cologne	39.39
16-18	Free University of Berlin	36.36
16-18	Philipps University of Marburg	36.36
16-18	Ruhr University of Bochum	36.36
19	Heinrich-Heine University of Düsseldorf	33.33
20-21	University of Aachen	30.30
20-21	University of Würzburg	30.30
22	University of Stuttgart	27.27
23	University of Constance	24.24

Table 13. (continued)

Rank	University	%
24–26	University of Essen	21.21
24–26	University of Hannover	21.21
24–26	University of Kaiserslautern	21.21
27–29	Justus-Liebig University Giessen	18.18
27–29	University Hospital Eppendorf	18.18
27–29	University of Kiel	18.18
30	Medical University of Hannover	15.15

Table 14. Top universities in Greece

Rank	University	%
1–2	University of Athens	100.00
1–2	University of Crete	100.00
3	Aristotle University of Thessaloniki	80.00

Table 15. Top universities in Hungary

Rank	University	%
1	Semmelweis Medical University	100.00
2	University of Debrecen	62.50
3	University of Szeged	50.00
4	Eötvös University	37.50

Table 16. Top universities in Ireland

Rank	University	%
1	Trinity College Dublin	100.00
2	University of Dublin	53.85
3	Dublin City University	23.08

Table 17. Top universities in Israel

Rank	University	%
1	Tel Aviv University	100.00
2	Hebrew University	95.24
3	Technion - Israel Institute of Technology	52.38
4	Bar Ilan University	28.57
5	Hadassah Medical University	19.05

Table 18. Top universities in Italy

Rank	University	%
1	University of Florence	100.00
2	University of Milan	82.61
3	La Sapienza University	69.57
4–5	University of Padova	52.17
4–5	University of Rome	52.17
6	University of Naples -Federico II	30.43
7–9	University of Bologna	26.09
7–9	University of Genova	26.09
7–9	University Vita - Salute San Raffaele	26.09
10–13	University of Pavia	17.39
10–13	University of Pisa	17.39
10–13	University of Trieste	17.39
10–13	University of Verona	17.39

Table 19. Top universities in Japan

Rank	University	%
1	University of Tokyo	100.00
2	Kyoto University	50.00
3	Osaka University	35.71
4	Tohoku University	25.00
5	Nagoya University	20.24
6	Kyushu University	17.86
7-9	Hokkaido University	9.52
7-9	Tokyo Institute of Technology	9.52
7-9	Tokyo Medical and Dental University	9.52
10-11	Keio University	8.33
10-11	Okayama University	8.33
12-13	Kanazawa University	5.95
12-13	Kumamoto University	5.95

Table 20. Top universities in Mexico

Rank	University	%
1	Universidad Nacional Autonoma de Mexico	100.00
2	Instituto Politecnico Nacional	50.00
3	San Luis Potosi State University	50.00
4	National University of Mexico	25.00
5	Universidad Cuernavaca	25.00

Table 21. Top universities in the Netherlands

Rank	University	%
1	University of Utrecht	100.00
2	University of Amsterdam	86.49
3	Leiden University	78.38
4	Free University of Amsterdam	54.05
5	University of Groningen	51.35
6	Erasmus University	43.24
7-8	Radboud University	32.43
7-8	Wageningen University	32.43
9-10	Technical University of Delft	29.73
9-10	Technical University of Eindhoven	29.73

Table 22. Top universities in New Zealand

Rank	University	%
1	University of Auckland	100.00
2	University of Otago	80.00
3	Massey University	30.00

Table 23. Top universities in Norway

Rank	University	%
1	University of Oslo	100.00
2	University of Bergen	52.94
3	Norwegian University of Science and Technology	35.29

Table 24. Top universities in Portugal

Rank	University	%
1	Technical University of Lisbon	100.00
2	Instituto Superior de Agronomia	66.66
3	Univesity of Porto	66.66
4	Instituto Superior Técnico	33.33
5	Universidade Nova de Lisboa	33.33

Table 25. Top universities in South Africa

Rank	University	%
1	University of Stellenbosch	100.00
2	University of Witwatersrand	100.00
3	University of Cape Town	75.00

Table 26. Top universities in South Korea

Rank	University	%
1	Seoul National University	100.00
2	Pohang University of Science and Technology	44.44
3	Yonsei University	22.22
4	Ajou University	11.11
5	Ewha Womans University	11.11
6	Hallym University	11.11
7	Hannam University	11.11
8	Korea Institute of Science and Technology	11.11
9	Korea University	11.11

Table 27. Top universities in Sweden

Rank	University	%
1	Karolinska Institute	100.00
2	Lund University	56.82
3	Stockholm University	40.91
4	University of Uppsala	38.64
5	Umea University	27.27
6	Göteborg University	25.00
7	Chalmers University of Technology	20.45
8	Royal Institute of Technology	18.18

Table 28. Top universities in Switzerland

Rank	University	%
1	Swiss Federal Institute of Technology, Zürich	100.00
2	University of Zürich	47.83
3	University of Basel	31.88
4	University of Geneva	30.43
5	University of Lausanne	27.54
6	University of Bern	21.74
7	University Hospitals of Geneva	17.39
8	University of Vaudois	11.59

Table 29. Top universities in Spain

Rank	University	%
1	University of Barcelona	100.00
2	Universidad Autonoma de Madrid	92.86
3	University of Sevilla	57.14
4–5	Technical University of Catalonia	28.57
4–5	Universidad Complutense de Madrid	28.57

Table 30. Top universities in the United Kingdom

Rank	University	%
1	University of Cambridge	100.00
2	University College London	94.64
3	University of Oxford	78.57
4	University of Edinburgh	40.18
5	King's College London	36.61
6	University of Bristol	34.82
7	University of Manchester	28.57
8	University of Leeds	22.32
9	University of Birmingham	21.43
10	University of Wales	20.54
11–12	University of East Anglia	19.64
11–12	University of Nottingham	19.64
13	University of Glasgow	18.75
14	University of Newcastle upon Tyne	16.07
15	University of Liverpool	15.18
16	University of Southampton	14.29
17–19	Cardiff University	12.50
17–19	University of Dundee	12.50
17–19	University of Sheffield	12.50
20–21	Royal Free and University College Medical School	11.61
20–21	University of Leicester	11.61
22–24	Queen's University of Belfast	8.93
22–24	University of Aberdeen	8.93
22–24	University of Sussex	8.93

Table 31. Top universities in the US

Rank	University	%
1	Harvard University	100.00
2	Stanford University	51.18
3	University of Pennsylvania	51.18
4	University of Washington	50.00
5	University of California, San Francisco	45.27
6	University of California, San Diego	41.42
7	Johns Hopkins University	41.12
8–9	University of California, Los Angeles	37.57
8–9	Washington University in St. Louis	37.57
10	Yale University	33.14
11	Cornell University	32.84
12	University of Michigan, Ann Arbor	31.95
13	University of North Carolina	31.36
14	University of Illinois, Chicago	29.59
15–16	University of California, Berkeley	28.99
15–16	University of Wisconsin	28.99

Table 31. (continued)

Rank	University	%
17	University of Pittsburgh	26.33
18–19	Massachusetts Institute of Technology	25.74
18–19	Vanderbilt University	25.74
20	Columbia University	25.44
21	Emory University	23.96
22	Northwestern University	23.08
23	Duke University	22.78
24	University of Virginia	22.19
25–26	Boston University	21.60
25–26	University of Texas, Dallas	21.60
27	University of Minnesota	20.71
28–29	Case Western Reserve University	20.41
28–29	University of Florida	20.41
30	University of California, Davis	18.93
31	Baylor College of Medicine	17.16
32–33	California Institute of Technology	16.86
32–33	University of Alabama	16.86
34	Rockefeller University	15.98
35	University of Southern California	15.68
36	New York University	14.79
37	University of Texas, Houston	14.20
38	University of Iowa	13.91
39–41	Mount Sinai School of Medicine	13.61
39–41	Pennsylvania State University	13.61
39–41	University of Rochester	13.61
42	University of California, Irvine	12.72
43–44	Brown University	11.83
43–44	University of Texas, San Antonio	11.83
45	University of Colorado, Boulder	11.54
46	University of Massachusetts, Worcester	11.24
47	Princeton University	10.95
48–51	Rutgers University	10.95
48–51	University of Colorado at Denver	10.95
48–51	University of Georgia	10.95
48–51	University of Utah	10.95
52–53	University of Arizona	10.36
52–53	University of Illinois, Urbana-Champaign	10.36
54–55	Ohio State University	10.06
54–55	University of Maryland, College Park	10.06
56	Albert Einstein College of Medicine	9.76
57–58	Michigan State University	9.47
58	University of Cincinnati	9.47
59–60	George Washington University	9.17
59–60	University of Texas, Austin	9.17
61–63	Oregon State University	8.58
61–63	Tufts University	8.58
61–63	University of Maryland, Baltimore	8.58
64–66	Georgetown University	8.28
64–66	Purdue University	8.28
64–66	University of Tennessee	8.28

Table 31. (continued)

Rank	University	%
67–68	Indiana University, Bloomington	7.69
67–68	Texas A&M University	7.69
69–70	Oregon Health and Sciences University	7.40
69–70	University of Medicine and Dentistry of New Jersey	7.40
71–72	University of California, Riverside	7.10
71–72	University of South Carolina	7.10
73–76	Georgia Institute of Technology	6.80
73–76	State University of New York, Stony Brook	6.80
73–76	University of Connecticut	6.80
73–76	University of Kentucky	6.80
77	Thomas Jefferson University	6.51
78–79	Brandeis University	6.21
78–79	University of Missouri	6.21
80	Louisiana State University	5.92
81–84	Carnegie Mellon University	5.62
81–84	Medical University of South Carolina	5.62
81–84	University of Arkansas	5.62
81–84	University of Miami	5.62
85–86	Indiana University - Purdue University, Indianapolis	5.33
85–86	State University of New York, Buffalo	5.33
87–92	Iowa State University	5.03
87–92	University of California, Santa Barbara	5.03
87–92	University of Massachusetts, Amherst	5.03
87–92	University of Nebraska	5.03
87–92	Virginia Polytechnic Institute and State University	5.03
87–92	Wayne State University	5.03
93–94	University of New Mexico	4.73
93–94	Virginia Commonwealth University	4.73
95–98	Medical College of Wisconsin	4.44
95–98	North Carolina State University	4.44
95–98	Rice University	4.44
95–98	University of Kansas	4.44
99	University of Houston	4.14

Table 32. University rankings: ISSRU vs Times

University	Country	ISSRU rank	Times rank
Harvard University	USA	1	1
Stanford University	USA	2	7
University of Pennsylvania	USA	2	28
University of Washington	USA	4	74
University of California, San Francisco	USA	5	20
University of California, San Diego	USA	6	24
Johns Hopkins University	USA	7	25
University of California, Los Angeles	USA	8	26
University of Cambridge	UK	10	6
Yale University	USA	10	8
Cornell University	USA	12	23
University of Michigan, Ann Arbor	USA	13	31
University College London	UK	14	34
University of California, Berkeley	USA	17	2
University of Wisconsin	USA	17	66
University of Oxford	UK	20	5
Massachusetts Institute of Technology	USA	21	3
Columbia University	USA	23	19
University of Tokyo	Japan	24	12
Northwestern University	USA	26	73
Duke University	USA	27	52
Boston University	USA	29	75
Case Western Reserve University	USA	32	88
McGill University	Canada	34	21
University of Toronto	Canada	36	37
California Institute of Technology	USA	38	4
Swiss Federal Institute of Technology	Switzerland	38	10
University of Alabama	USA	38	90
New York University	USA	43	79
University of Rochester	USA	46	86
University of Edinburgh	UK	49	48
University of British Columbia	Canada	51	46
University of Vienna	Austria	51	94
Kyoto University	Japan	54	29
Pierre & Marie Curie University	France	55	57
King's College London	UK	55	97
Brown University	USA	57	61
Australian National University	Australia	59	16
University of Bristol	UK	59	91
Princeton University	USA	63	9
University of Heidelberg	Germany	73	47
University of Melbourne	Australia	77	22
University of Manchester	UK	77	43
Catholic University Leuven	Belgium	77	53
University of Amsterdam	The Netherlands	77	98
University of Texas, Austin	USA	83	15
Osaka University	Japan	86	69
Purdue University	USA	91	59
University of Copenhagen	Denmark	96	63
Technical University of Munich	Germany	96	95

Table 33. University rankings: Shanghai vs Times

University	Country	Times Rank	Shanghai Rank
Harvard University	USA	1	1
University of California, Berkeley	USA	2	4
Massachusetts Institute of Technology	USA	3	5
California Institute of Technology	USA	4	6
University of Oxford	UK	5	10
University of Cambridge	UK	6	2
Stanford University	USA	7	3
Yale University	USA	8	11
Princeton University	USA	9	8
Swiss Federal Institute of Technology	Switzerland	10	27
University of Tokyo	Japan	12	20
University of Chicago	USA	13	9
Imperial College London	UK	14	23
University of Texas, Austin	USA	15	36
Australian National University	Australia	16	56
Columbia University	USA	19	7
University of California, San Francisco	USA	20	18
McGill University	Canada	21	67
University of Melbourne	Australia	22	82
Cornell University	USA	23	12
University of California, San Diego	USA	24	13
Johns Hopkins University	USA	25	19
University of California, Los Angeles	USA	26	14
University of Pennsylvania	USA	28	15
Kyoto University	Japan	29	22
Ecole Normale Supérieure, Paris	France	30	93
University of Michigan, Ann Arbor	USA	31	21
University College London	UK	34	26
Illinois University	USA	35	25
University of Toronto	Canada	37	24
Carnegie Mellon University	USA	38	54
University of Manchester	UK	43	53
University of British Columbia	Canada	46	37
University of Heidelberg	Germany	47	71
University of Edinburgh	UK	48	48
Tokyo Institute of Technology	Japan	51	95
Duke University	USA	52	32
Purdue University	USA	59	75
Brown University	USA	61	86
University of Copenhagen	Denmark	63	57
University of Wisconsin	USA	66	16
Osaka University	Japan	69	62
University of California, Santa Barbara	USA	72	34
Northwestern University	USA	73	31
University of Washington	USA	74	17
Boston University	USA	75	80
New York University	USA	79	29
University of Rochester	USA	86	65
Case Western Reserve University	USA	88	69
University of Bristol	UK	91	64
Hebrew University of Jerusalem	Israel	93	78
University of Vienna	Austria	94	85
Technical University of Munich	Germany	95	52
King's College London	UK	97	81
Munich University	Germany	99	51

Table 34. University rankings: Shanghai vs ISSRU

University	Country	ISSRU rank	Shanghai rank
Harvard University	USA	1	1
Stanford University	USA	2	3
University of Pennsylvania	USA	2	15
University of Washington	USA	4	17
University of California, San Francisco	USA	5	18
University of California, San Diego	USA	6	13
Johns Hopkins University	USA	7	19
University of California, Los Angeles	USA	8	14
Washington University in St. Louis	USA	8	28
University of Cambridge	UK	10	2
Yale University	USA	10	11
Cornell University	USA	12	12
University of Michigan, Ann Arbor	USA	13	21
University College London	UK	14	26
University of North Carolina	USA	14	55
University of California, Berkeley	USA	17	4
University of Wisconsin	USA	17	16
University of Pittsburgh	USA	19	44
University of Oxford	UK	20	10
Massachusetts Institute of Technology	USA	21	5
Vanderbilt University	USA	21	40
Columbia University	USA	23	7
University of Tokyo	Japan	24	20
Northwestern University	USA	26	31
Duke University	USA	27	32
Boston University	USA	29	80
University of Minnesota	USA	31	33
University of Florida	USA	32	58
Case Western Reserve University	USA	32	69
McGill University	Canada	34	67
University of California, Davis	USA	35	41
University of Toronto	Canada	36	24
California Institute of Technology	USA	38	6
Swiss Federal Institute of Technology	Switzerland	38	27
Rockefeller University	USA	41	30
University of Southern California	USA	42	50
New York University	USA	43	29
Pennsylvania State University	USA	46	39
University of Rochester	USA	46	65
University of Edinburgh	UK	49	48
Karolinska Institute	Sweden	50	45
University of British Columbia	Canada	51	37
University of California, Irvine	USA	51	47
University of Vienna	Austria	51	85
Kyoto University	Japan	54	22
King's College London	UK	55	81
Brown University	USA	57	86
Australian National University	Australia	59	56
University of Bristol	UK	59	64
Princeton University	USA	63	8

(continued on the next page)

Table 34. (continued)

University	Country	ISSRU rank	Shanghai rank
University of Utrecht	The Netherlands	63	42
University of Utah	USA	63	96
University of Arizona	USA	69	74
Ohio State University	USA	71	63
University of Zürich	Switzerland	73	59
University of Heidelberg	Germany	73	71
University of Manchester	UK	77	53
Michigan State University	USA	77	77
University of Melbourne	Australia	77	82
University of Helsinki	Finland	83	76
Osaka University	Japan	86	62
Tufts University	USA	87	100
Purdue University	USA	91	75
Indiana University, Bloomington	USA	94	87
Texas A&M University	USA	94	89
Technical University of Munich	Germany	96	52
University of Copenhagen	Denmark	96	57
Lund University	Sweden	96	99