

Universities rankings: methodology should be improved

Every year, thousands of academic institutions (universities, colleges, institutes) worldwide are evaluated for academic performance (in research and teaching) by such famous and influential rankings as QS World University Rankings¹, Times Higher Education (THE) World University Rankings², and Academic Ranking of World Universities (ARWU)³. These academic rankings are based on different subjective criteria and subjective weights attached to them. Therefore most institutions in the world (except a few top universities in USA and UK) show a wide range in their rankings (Table 1), which is problematic with correct comparison of academic performance between different institutions worldwide.

Very serious flaw of these rankings is that they are not adjusted correctly for such important factor of performance as operating budget (expenses), which vary

in a very wide range, from remarkable 5.1 billion USD for Stanford University⁴ (and 4.5 billion USD for Harvard University⁴ in 2016) to only few million USD for poor institutions worldwide (Table 1).

The point is that wealthy institutions have unfair advantage (e.g. in obtaining of advanced and expensive research equipment and hiring of highly qualified scholars, etc.) over the poor institutions (with very limited resources) in the current rankings. As a result, all top positions in these three rankings¹⁻³ are always taken by institutions with billion budgets (Table 1).

Also, academic performance in these rankings is not adjusted at all for its environmental impact (e.g. the greenhouse gases (carbon dioxide) emissions, water, energy and paper consumption per scholar) related to travel, research and teaching activity. Therefore, to achieve

fairly good comparison for all institutions worldwide, the international scientific community should cooperate to develop in consensus a common, accurate and objective methodology (including ecological pressure and amended for operating budget/expenses) for correct evaluation of academic performance in each dimension, i.e. research, teaching and knowledge implementation.

Table 1. Comparison of university rankings and budgets

| Institution | Operating budget (expenses) in 2016, billion USD | Ranks in 2017/18 | | |
|--|--|------------------|----------|---------|
| | | QS | THE | ARWU |
| Stanford University ⁴ | 5.1 | 2 | 3 | 2 |
| Harvard University ⁴ | 4.5 | 3 | 6 | 1 |
| Yale University ⁴ | 3.4 | 16 | 12 | 11 |
| Massachusetts Institute of Technology ⁴ | 3.3 | 1 | 5 | 4 |
| University of Cambridge ⁵ | 2.6 | 5 | 2 | 3 |
| California Institute of Technology ⁴ | 2.3 | 4 | 3 | 9 |
| University of Oxford ⁵ | 2 | 6 | 1 | 7 |
| ETH Zurich ⁶ | 1.8 | 10 | 10 | 19 |
| National University of Singapore ⁷ | 1.6 | 15 | 22 | 91 |
| University of Edinburgh ⁵ | 1.3 | 23 | 27 | 32 |
| University of Hong Kong ⁸ | 1.1 | 26 | 40 | 101–150 |
| Seoul National University ⁹ | 0.8 | 36 | 74 | 101–150 |
| National Taiwan University ¹⁰ | 0.5 | 76 | 198 | 151–200 |
| University of Cape Town ¹¹ | 0.4 | 191 | 171 | 301–400 |
| University of Malaya ¹² | 0.3 | 114 | 351–400 | 401–500 |
| University of Tartu ¹³ | 0.2 | 314 | 301–350 | 301–400 |
| University of Delhi ¹⁴ | 0.1 | 481–490 | 601–800 | 701–800 |
| University of Calcutta ¹⁵ | 0.03 | 751–800 | 801–1000 | 601–700 |

1. www.topuniversities.com/university-ranking (accessed on 9 September 2017).
2. www.timeshighereducation.com/world-university-rankings (accessed on 9 September 2017).
3. <http://www.shanghai ranking.com/ARWU-2017.html> (accessed on 9 September 2017).
4. <https://nces.ed.gov/> (accessed on 9 September 2017).
5. <https://www.hesa.ac.uk> (accessed on 9 September 2017).
6. <https://www.ethz.ch/en/> (accessed on 9 September 2017).
7. <http://www.nus.edu.sg/> (accessed on 9 September 2017).
8. <http://www.feo.hku.hk/> (accessed on 9 September 2017).
9. <http://en.snu.ac.kr/> (accessed on 9 September 2017).
10. <http://www.ntu.edu.tw/english/> (accessed on 9 September 2017).
11. <https://www.uct.ac.za/> (accessed on 9 September 2017).
12. <https://www.um.edu.my/> (accessed on 9 September 2017).
13. <http://www.ut.ee/en/> (accessed on 9 September 2017).
14. <http://www.du.ac.in/du> (accessed on 9 September 2017).
15. <http://www.caluniv.ac.in/> (accessed on 9 September 2017).

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