



The university library of SLU in Alnarp. Photo: Julio Gonzalez, SLU

Nordic research frequently cited

The agricultural universities in Norway and Sweden perform well above the world average in terms of publications and research impact according to a newly presented study. The Swedish University of Agricultural Sciences (SLU) had a relative citation index that ranks it second out of all the Swedish universities. And The Norwegian University of Life Sciences (UMB) has shown a great increase in its number of publications during the last decade.

Bibliometric data

The objective of the project *Bibliometric Indicators for the Nordic Universities* within the Nordforsk-supported network NORIA-net was to establish bibliometric indicators using transparent methods and describing differences in university research profiles. The indicators measure research activity through publication, and research impact through citations. The indicators are

also normalised, making it possible to make comparisons within a specific research field. The bibliometric data gives a more detailed overview and insight than traditional university rankings, which receive so much public attention (see next page).

The report lists universities in the Nordic countries with a specified minimum number of publications. The only two universities whose profile is mainly agricultural or forestry-based are SLU and UMB. The table on next page shows selected indicators of publication and citations taken from the report. Many more figures can be found in the original report.

Most Nordic universities are well above the world average of 1.00 in terms of citations. The top ranked university in this respect is the Technical University of Denmark, followed by Aarhus University and Stockholm University.

The publication and citation figures reflect the situation for the second half of the past decade. When compared with the period 2000–2004, UMB

increased their number of publications with 35% and its citation indicator from 1.00 to 1.09. SLU, on the other hand, had a slight decrease in number of publications (-5%), but an increase in citation rate from 1.15 to 1.21.

Source: Comparing research at Nordic universities using bibliometric indicators. A publication from the NORIA-net "Bibliometric Indicators for the Nordic Universities". Can be downloaded from www.nordforsk.org.

Comments to the table

¹ Full-time equivalents in 2008: teaching and research personnel, including teaching/research assistants and PhD students

² Number of fractionalised publications in 2005–2009. A paper with two authors from two different universities is counted as 0.5 of a publication each. Data from humanities and social science are mostly excluded

³ Citation rates in 2005–2008, normalised to an index where 1.00 is the "world average" for each research field and publication type. An index of 1.10 represents citation rates ten per cent above the world average

| | Academic staff ¹ | No. publications ² | Citations ³ |
|--|-----------------------------|-------------------------------|------------------------|
| Denmark | | | |
| Aalborg University | 1 351 | 1 089 | 1.03 |
| Aarhus University | 3 486 | 4 071 | 1.38 |
| Roskilde University | 553 | 219 | 1.12 |
| Technical University of Denmark | 2 245 | 3 859 | 1.40 |
| University of Copenhagen | 4 135 | 6 584 | 1.23 |
| University of Southern Denmark | 1 624 | 1 395 | 1.22 |
| Finland | | | |
| Aalto University | 2 328 | 2605 | 1.10 |
| Åbo Akademi University | 659 | 895 | 1.09 |
| Lappeenranta University of Technology | 562 | 357 | 0.84 |
| Tampere University of Technology | 1 154 | 917 | 0.84 |
| University of Eastern Finland | 1 386 | 2 081 | 0.98 |
| University of Helsinki | 3 807 | 5 624 | 1.18 |
| University of Jyväskylä | 1 407 | 1 374 | 1.08 |
| University of Oulu | 1 562 | 2 007 | 0.87 |
| University of Tampere | 1 082 | 866 | 0.96 |
| University of Turku | 1 477 | 2 328 | 0.96 |
| Iceland | | | |
| Reykjavik University | 143 | 48 | - |
| University of Akureyri | 113 | 28 | - |
| University of Iceland | 925 | 735 | 1.05 |
| Norway | | | |
| Norwegian University of Life Sciences | 509 | 880 | 1.09 |
| Norwegian University of Science and Technology | 2 686 | 3 320 | 1.07 |
| University of Bergen | 2 022 | 2 815 | 1.11 |
| University of Oslo | 3 354 | 4 573 | 1.11 |
| University of Stavanger | 599 | 256 | 0.75 |
| University of Tromsø | 1 135 | 1 205 | 1.04 |
| Sweden | | | |
| Chalmers University of Technology | 853 | 2 628 | 1.10 |
| Karlstad University | 548 | 293 | 0.73 |
| Karolinska Institutet | 1 576 | 6 200 | 1.21 |
| Linköping University | 1 333 | 2 421 | 1.02 |
| Linnaeus University | 834 | 476 | 0.81 |
| Luleå University of Technology | 475 | 697 | 0.81 |
| Lund University | 2 205 | 6 493 | 1.18 |
| Mid Sweden University | 395 | 303 | 0.81 |
| Royal Institute of Technology | 1 242 | 3 985 | 1.08 |
| Stockholm University | 1 878 | 3 069 | 1.36 |
| Swedish University of Agricultural Sciences | 1 286 | 2 456 | 1.21 |
| Umeå University | 1 607 | 2 594 | 1.11 |
| University of Gothenburg | 2 256 | 3 701 | 1.11 |
| Uppsala University | 2 036 | 5 746 | 1.08 |
| Örebro University | 503 | 373 | 1.14 |

Other well-known university rankings

A mass of university rankings have become available during the last decade. These lists usually receive high media exposure. However, such rankings have been extensively criticised in terms of their validity and the reliability of their indicators. The problems occur because the different scientific profiles of universities are ignored, and the general indicator does not say anything about the strengths and weaknesses within each university's scientific portfolio.

Shanghai ranking (ARWU)

The Academic Ranking of World Universities by Shanghai Jiao Tong University includes only universities that have Nobel Laureates, Fields Medalists, Highly Cited Researchers or papers published in Nature and Science. The ranking should mirror the reputation of the university, and weighs Nobel prize winners highly, as well as articles published in Nature and Science. The ranking does not include a traditional citation analysis. The Shanghai ranking puts the University of Copenhagen at the top of the Nordic universities with rank 40, closely followed by Karolinska Institutet (rank 42).

THE university ranking

Times Higher Education (THE) states that the 2010 list delivers its "most rigorous, transparent and reliable rankings tables ever". The ranking puts together several performance indicators designed to capture the full range of university activities, from teaching to research and knowledge transfer. Reputation surveys are allocated high weightings, as are the number of publications and citations.