



Press release

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BEST UNIVERSITIES, BEHIND RANKINGS

Mapped by researchers of USI and University of Turin over 2,000 Higher Institutions in Europe and more than 3,000 in the US, which have shown a strong relationship between university revenues and their volume of publications and citations. Funding needs to be considered to properly understand productivity of individuals and organizations. The study is published on PlosOne.

Define excellence is not a simple job, especially when it comes to research, and when the excellence of research systems should be related to revenues. A recent study titled “*Scientific output scales with resources. A comparison of US and European universities*” and published on **PlosOne**, is focused on the association between university incomes and international visibility. Researchers of USI (Università della Svizzera italiana) in collaboration with University of Turin, have revealed a strong relationship between university revenues and their volume of publications and citations, sweeping away some conceptions on university rankings.

*“The European Commission has further expanded the information available on European universities, with particular emphasis on organizing the data and increasing the number of countries involved”, said **Benedetto Lepori, of Università della Svizzera italiana and corresponding author.** “This allowed an interesting comparison between the United States and Europe in order to deepen the modalities and the functioning of the competition between universities and to investigate the type of impact that this phenomenon has on the research outputs at system level”.*

Providing input and output data for nearly all doctoral universities in the US and in Europe, researchers revealed **that the number of publications and citations at the university level scales in respect to revenues, and that these relationships are similar in the US and in Europe.** This implies that the richest universities will systematically show up at the top of bibliometric indicators and of international rankings. Scientist mapped **more than 3,000 Higher Education Institutions in the US and over 2,000 in Europe.** Data derived from **RISIS-ETER, the European Tertiary Education Register database and from Integrated Postsecondary Education Data System for the US (IPEDS), as well as from the RISIS-Web of Science database maintained by the University of Leiden.** When compared with international student statistics from EUROSTAT, the coverage is 100% of student enrolments at bachelor, master and PhD level in the US and 96% in Europe.

*“Though often criticized for their intrinsic limitations, rankings have been used to provide so-called ‘excellence’ signals. Across countries, one model of research intensive institution, inspired by the US research university, has become the aspirational archetype for all universities that are increasingly involved in the battle for international ‘excellence’, with university managers keenly scrutinizing their position in international rankings. At the political level, the observation of a ‘transatlantic gap’ in bibliometric indicators between US and Europe has led to a wide debate on whether stronger policies rewarding ‘excellence’ would be needed”, said **Lepori.***

Thus, investment in research by universities plays an important role in attracting academics from abroad, and generates self-reinforcing cumulative mechanisms where the rich is becoming richer. Specifically, funding needs to be considered if we want to properly understand productivity of individuals and organizations.

*“Beyond the obvious assumption that more resources translate into more output, we know little about the relationship at the institutional level between the amount of available resources on the one hand and scientific output and visibility on the other hand. All evaluation efforts have been directed toward measuring output rather than productivity”, said **Lepori.** “The focus of our study is to examine the*



relationship between resources and standard bibliometric indicators that are widely used to compare universities for their ‘excellence’, for example, in international rankings. We aim to understand whether such indicators depict wealth rather than anything else”

Moreover, **researchers showed that the US system comprises a small number of universities with far larger revenues than their European counterparts.** This suggests that the ‘transatlantic gap’ in research ‘excellence’ is by and large a ‘resources gap’ and the outcome of a resourcing model that concentrates a large amount of resources in a few universities independently from student enrolments.

Results reveal that fighting for the top-positions in international rankings must be associated with the concentration of large amounts of resources in a few places. This could have relevant policy implications. Researchers suggest that, for some (large) European countries currently lacking internationally ‘excellent’ universities, dedicated policies should be designed that trigger the kind of cumulative mechanisms observed in the US, for example by attributing long-term institutional funding.

“Our data show that higher education investment in most European countries is well below the US level. Not only in those countries such as Italy and the UK where in post 2008 crisis budget cuts were implemented, but also in countries such as France and Germany where funding for special excellence initiatives was made available however in a limited scale compared to funding available to top US universities”, said Lepori. “At the same time, the battle for international rankings should not be the main concern of most university managers, because even in a well-funded system like the US one, this concerns only a handful of universities that account for a tiny proportion of higher education activities, particularly for what concerns education and the contribution to society and economy”.

Also, the ability to attract qualified staff is a key aspect in the analysis of competition between universities. The previous study on the topic, published in the journal Research Policy under the title "Competition for talent. Country and organizational-level effects in the internationalization of European higher educational institutions" - deals with the competition between European universities to attract talented researchers.

That earned to Benedetto Lepori and to the co-authors Marco Seeber of the University of Agder and Andrea Bonaccorsi of the University of Pisa the **Swiss Prize for Educational Research 2019**, awarded every two years to an innovative project that contributes significantly to the management of the Swiss education system.

For the first time, research takes into account two factors that regulate competition between universities: the university factor and the country factor. The surveys conducted, thanks to data obtained from ETER data, show that the framework conditions of the country system weigh more than the characteristics of individual universities in influencing the decision. As a result, in countries that are less attractive in this respect, even respectable institutions are not able to attract a significant number of academics at the international level.

[The Plos One publication](#)

[The RISIS project](#)

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