Reputation of universities in global rankings and top university research in six fields of research

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ABSTRACT

In this paper the reputation of the centuries-old Anglo-American university model is scrutinized utilizing the top 100 lists of global university rankings. The potential newcomers to the top 100 lists are also traced among the top 100 universities under 50 years old. In addition to reputation of universities, getting to the top 300 lists of university research in six fields is examined, with a special emphasis on the division between English and non-English-speaking countries. The effect of the country size in making the top 300 research in various fields is examined as well.

Keywords: English and non-English-speaking countries, global university rankings, reputation of universities, top research in six disciplines

INTRODUCTION

The paper starts with studying the reputation of universities in global rankings. In this review we consider the two clearly leading countries, US and UK separately and the other English-speaking countries as a block, and the non-English-speaking countries as another block. Secondly, we study the top university research in six fields of research counting how many recognitions universities of a country get to the world's top 300. In this review, again the two clearly leading countries, US and UK are looked at separately, and the rest of the world in five country groupings: other English-speaking countries, East Asian countries, Scandinavian countries, BRICS countries and other non-English-speaking countries.

GLOBAL UNIVERSITY RANKINGS

Around the world recent higher education and research policies emphasise performance and competition [cf. 9, 1, 8]. Even the Scandinavian 'welfare states' are taking distance from their egalitarian HE policy and the idea of equal universities – making room for funding competition in order to encourage differentiation between universities. Global university rankings are playing a central role in national policy discussions even though they cover only one tenth of the total of 16,000 higher education institutes in the world. Nevertheless, faced with increasingly tough international competition, success in the rankings has become an objective for universities of very different standards, even though succeeding in global rankings is rarely operationalised into functions through which individual universities could rapidly enhance their positions [see 9, 12].

An examination of success among universities from different countries within the global university ranking (US: Best Global Universities, BGU; Chinese: Academic Ranking of World Universities, ARWU, and British: Times Higher Education, THE) provides a strong case for the existing geopolitical pecking order, in which the United States is in front, Europe second and the rest of the world follows behind. In most recent rankings, American universities hold 50 of the Top 100 positions in BGU, 52 in ARWU and 43 in THE. The United Kingdom has nine universities listed in the BGU Top 100, eight in that of the ARWU and eleven in THE. Universities from other countries are left with random ranking positions. [See 2, 3, 16, 18, 21]

These top ranking universities suggest, albeit an obvious conclusion, that English, the *lingua franca* of the academic world, is a central asset for English-speaking countries [see 10]. When the universities of Australia and Canada are included, we can notice that the English-speaking countries hold 69 % of the BGU, 68 % of the ARWU and 63 % of the THE top 100 positions. The modest ranking success of universities in non-English-speaking countries is explained, for example, by the fact that the key reference databases (e.g. Web of Science) contain relatively few non-English scientific journal publications, and that non-English research is less published and less referenced [see e.g. 7, 20]. Furthermore, the renowned US and British traditional research universities could have strengthened their well-established positions since they have for long enjoyed their forerunner advantage. The principles according to which successful research universities function are known throughout the entire academic world, drawing interest even to the point of imitation. It should also be noted that

according to Jöns and Hoyler [11], for example, global rankings express, above all, the superiority of the Anglo-American university model.

In light of the rankings, the superiority of the centuries-old Anglo-American university model appears to be undeniable, but in order to find possible challengers we will consider those "young" universities (in operation for less than 50 years) that have made it onto the list of the Top 100 universities under 50 years old (here in particular we use THE's international list). Of this list, a total of 14 universities are from the UK, eight are from the USA, and even when the ranked universities from Australia, Canada, Ireland and New Zealand (altogether 23) are included, the total share of English-speaking countries still remains less than half (45 %). Of the non-English-speaking countries, six universities from both France and Germany belong to the Top 100 under 50 years old list, while Japan had to settle with only one position and China did not get any university to the list. It should, however, be noted that four nations from East Asia, namely Hong Kong, South Korea, Taiwan and Singapore, succeeded in getting altogether 10 universities on the Top 100 under 50 years list, whereas the four Scandinavian nations of Sweden, Denmark, Finland and Norway only had a total of eight. We might further state that whereas the share of the English-speaking countries is 69 % of the top 100 of all universities, they constitute less than half (45 %) of the Top 100 under 50 years. The weakening supremacy of English-speaking countries also indicates a shift within the academic world from the European – North American axis to other parts of the world.

The world-renowned university rankings have been criticised from the viewpoint of traditional European research-based universities for drawing attention, perhaps unintentionally, away from the core tasks of the universities, and placing the focus on other factors that are being measured for each particular ranking [13, 20]. The discussion surrounding the global rankings has concentrated on the question of what the various ranking indicators actually measure and what they should measure. The THE makes clear, for example, that its ranking system is based on opinion surveys studying the university's reputation within the academic community and key interest groups. For example, Simon Marginson [17] finds the subjectiveness of such university rankings that lean on surveys strange, because to his view surveys do not provide objective data about "real world" but only respondents' opinions about the reputation of each university. According to Marginson [17] it would be ideal if rankings could guarantee internationally objective evaluation of all institutions. Since global rankings appear to be here to stay Marginson [17] urges especially social scientists – instead of resisting – to be more active in studying together how rankings could evolve in a way that their negative effects are minimized and they could, on the basis of objective comparisons, better serve the common interest.

According to Domingo Docampo's [5] affirmative standpoint, the ARWU measures precisely what it claims to measure, namely the research quality of a university and the excellence of its staff and students. Therefore, the criticism targeted at the ARWU should, rather, focus on how well or poorly the ARWU succeeds in carrying out the tasks that it has established for itself. Docampo [5] also states that repetitious systematic measurements, even with their possible shortcomings, generally produce results that become more accurate over time, while simply strutting about with noble ideals about the principles of the best possible indicators will not bring about any results [see e.g. 4]. However, we do not agree with Docampo in that the ARWU would manage to succeed without defects in measuring the research quality of the world's universities. In our opinion, compared to the ARWU, the strengths of such rankings as the Dutch CWTS Leiden Ranking and National Taiwan University Ranking (NTU; formerly HEEACT) lie in the fact that in these rankings the evaluation of the research is done by disciplines. Whilst the ARWU takes into account for instance the Nobel prizes, articles published in Nature and Science magazines or highly cited researchers it tends to favour the few dozen universities that belong already to the renowned top class; moreover, these indicators seem to favour universities profiled in hard sciences [see 13; cf. 6].

TOP RESEARCH BY FIELDS

In order to make universities comparable The Dutch Leiden Ranking applies its own normalising method which is not completely without problems either [see 19]. According to our understanding, the NTU ranking succeeds best in identifying the globally cutting-edge research articles published in Web of Science (WoS) -level journals. In the following we utilize the list of world's Top 300 universities by research fields produced by NTU. The analysed fields include the natural sciences, engineering, clinical medicine, life sciences, agriculture and social sciences.

Over the seven-year period of 2008-2014, altogether 707 universities from 45 countries received top 300 recognitions in the NTU ranking in at least one out of six fields. Considering all ca. 12 500 top 300 recognitions we notice that American universities hold their superiority with the share of 35.4 %, whereas 9.3 % went to British and another 9.3 per cent share to universities from other four English-speaking countries. Thus universities of the six English-speaking countries totalled a 54 % share of all recognitions. From the group of 39 non-English-speaking countries, the BRICS countries held a 5.5 % share of total recognitions, universities of the Scandinavian countries a 5.5 % share, East Asian universities a 4.1 %, and universities of other 30 non-English-speaking countries a 31.1 % share. (Figure 1)
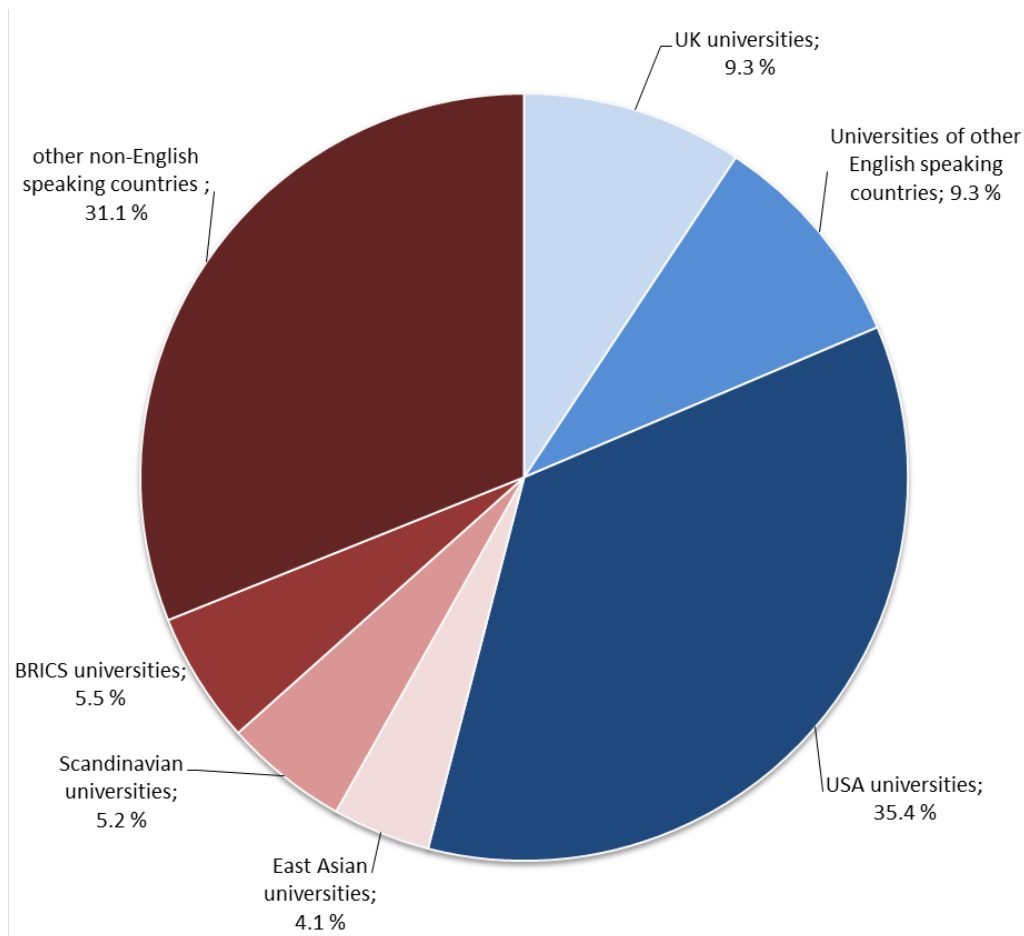
Figure 1. Top 300 recognitions (total of 12 500) in six fields of research in 2008-2014 by selected countries and country groupings.
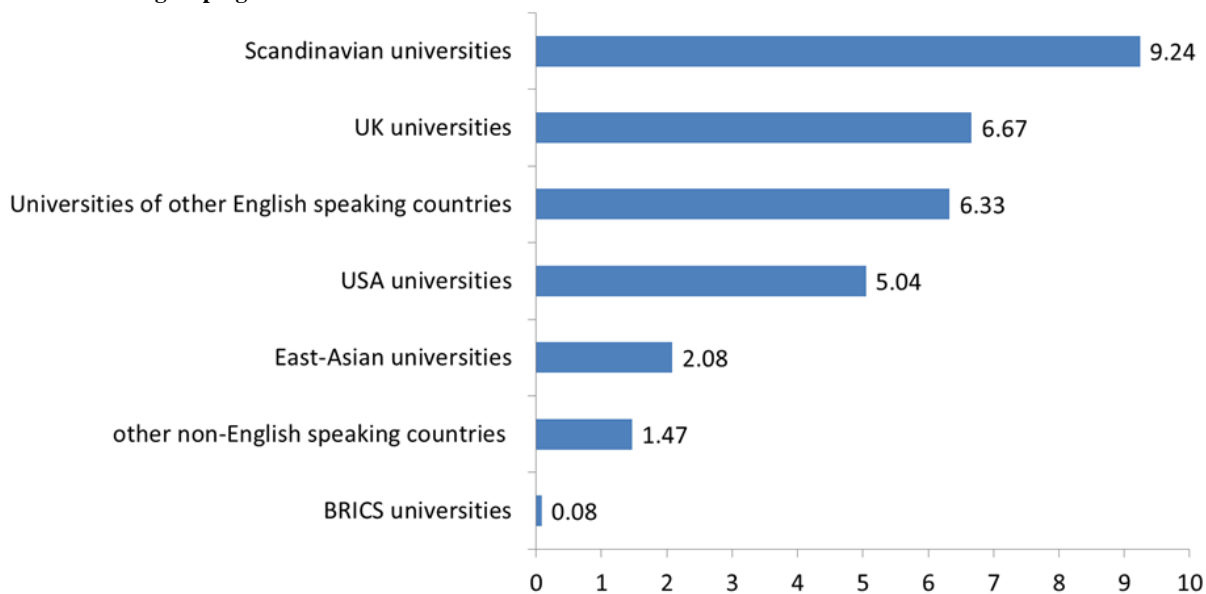
Figure 2. Top 300 recognitions in six fields in 2008-2014 of universities in proportion to the countries' population by selected countries and country groupings.

No doubt, the differences in the number of top recognitions between the universities reflect the size differences between the countries. In order to eliminate considerable size differences between countries we employ *per capita* measure. The measure relates the share of top recognitions to the country's population share (Figure 2). Scandinavian universities' share of top 300 recognitions is 9.24 times the Scandinavian countries' population share. Respective number for the UK universities is

6.67 and that of the universities of other English-speaking countries 6.33. US universities get 5.04 times of country's population share and East Asian universities 2.08 respectively. Universities of other non-English-speaking countries also top their countries' population share by 1.47 times whereas top 300 recognitions of universities of population-rich BRICS countries, however, are still a far cry from their population share (0.08) (Figure 2). It should be noted that when, instead of top 300 recognitions, more detailed output (e.g.Web of Science articles) and, instead of population, more detailed input (research years) measures are available, it is possible to execute more refined and up-to-date measuring of research productivity. However, here we cannot dwell deeper into productivity analyses which we have done elsewhere [see 14, 15].

When analysing recognition of universities in top 300 by fields in proportion to countries' population it is evident that the universities of the English-speaking countries (USA, UK, Canada, Australia, Ireland and New Zealand) have overwhelming success in the field of social sciences; their share of the Top 300 rankings for this field is 77 %. The universities of English-speaking countries also hold the majority share in the fields of natural sciences (58 %), life sciences (57 %) and clinical medicine (52 %). Universities of non-English-speaking countries hold a larger share of top recognitions in natural sciences 52 % and technology 54 % [cf. 7].
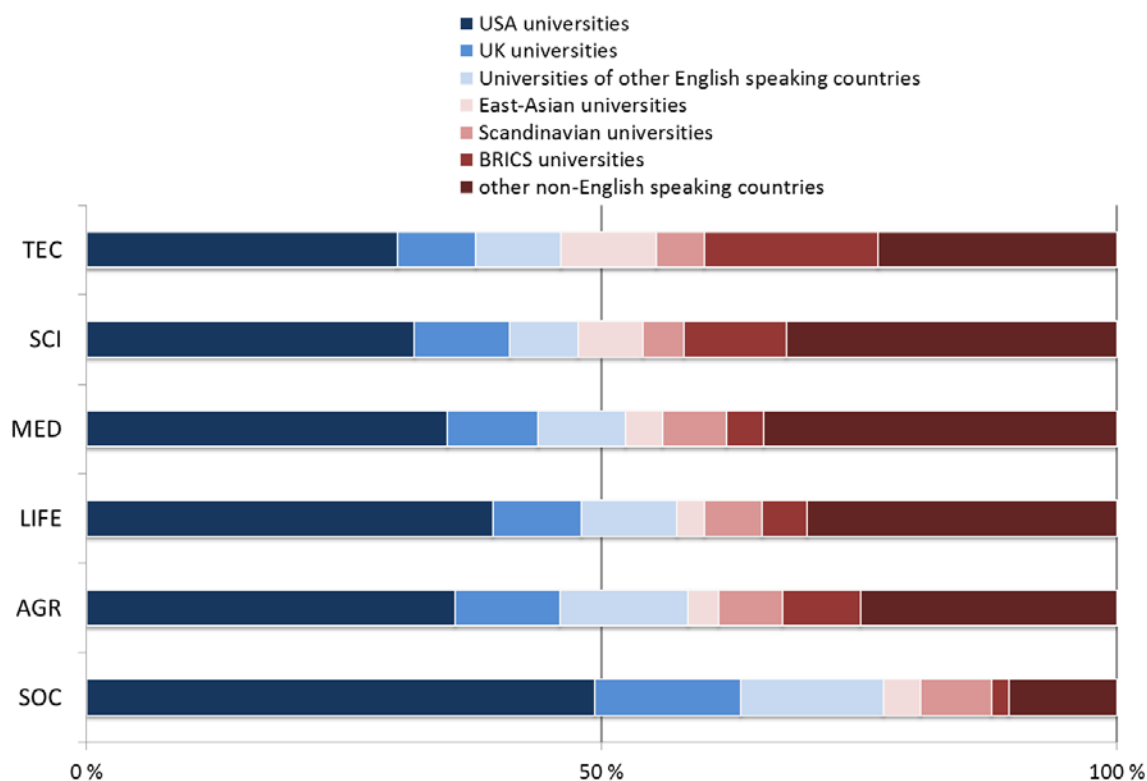

Figure 3. **Top 300 recognitions in six fields of research in 2008–2014 by selected countries and country groupings.**

CONCLUSIONS

The lists of the world's top 100 ranked universities examined here undeniably strengthen the preconception on the superior reputation of the centuries-old Anglo-American university model. Considering the fact that a vast majority of top universities reside in English-speaking countries it is hard to avoid the obvious conclusion that English as the *lingua franca* of the academic world favours English-speaking countries in global university rankings.

The results of our examination of the recognitions of universities reaching the world top 300 lists of research by six fields show that English-speaking countries hold majority of top recognitions in clinical medicine, agriculture and life sciences. In social sciences, in particular, universities of English-speaking countries clearly dominate whereas in technology and in natural

sciences universities of the non-English-speaking countries hold majority of top recognitions. When *per capita* measures are applied, the relational results obtained show that Scandinavian university research, in particular, fares quite well compared to university research of other countries.

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