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# **Academic rankings in higher education: trends of international scientific literature**

## *Rankings acadêmicos na educação superior: tendências da literatura científica internacional*

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### **Abstract**

This article presents the state of the question about global academic rankings implications in higher education. Among thousands of studies located in international scientific bases, 23 scientific papers were selected as corpus of analysis. Implications were organized into three groups: internationalization and competition; governance and autonomy; and, quality and productivity. The scientific literature presents universities, worldwide, looking for better positions in the academic rankings, eventually supported by national governments, aiming to join the select circuit of World Class Universities. Noteworthy encouraging the internationalization of higher education institutions, especially in Asian countries,

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by increasing the publication of scientific articles and, often, by the partnerships to import models consolidated from the universities that are in the top of the rankings.

**Keywords:** Academic rankings. Higher education. University rankings. Educational evaluation. Higher education. Academic research.

### **Resumo**

*Este artigo apresenta o estado da questão acerca das implicações dos rankings acadêmicos globais na educação superior. Entre milhares de estudos localizados em bases científicas internacionais, foram selecionados 23 artigos científicos como corpus de análise. As implicações identificadas foram organizadas em três grupos: internacionalização e competição; governança e autonomia; e qualidade e produtividade. A literatura científica apresenta universidades procurando melhores posições nos rankings acadêmicos, eventualmente apoiadas por governos nacionais, almejando entrar no seleto circuito das Universidades de Classe Mundial. Destaca-se o estímulo à internacionalização das instituições de educação superior, especialmente em países asiáticos, por meio do aumento da publicação de artigos científicos e, muitas vezes, das parcerias para importação de modelos consolidados das universidades que estão nos topos dos rankings.*

**Palavras-chave:** Rankings acadêmicos. Rankings universitários. Avaliação educacional.

## Introduction<sup>1</sup>

This article aims to raise the state of the question about the implications of academic rankings<sup>2</sup> in higher education based on the trends identified in international scientific literature.

The study was inspired on Marginson (2014, p. 47), when he checks the prevalence of studies on characteristics and limitations of rankings, but a little of ones to discuss ranking implications for society and high education institutions (HEI), and points out that “university rankings are critiqued; but surprisingly, they are little critiqued as social science”.

According to Nóbrega-Therrien and Therrien (2004, p. 7), the state of the question is a research strategy which leads to the recording, based on a rigorous bibliographical survey, of how the subject is investigated in the current state of science. The elaboration of this state of the question demanded certain parameters and cut-outs to reach its objectives. Lima and Mito (2007, p. 41) indicate thematic, linguistic, source and chronological parameters needed for a bibliographic research. In this research, the thematic parameter defined was the implications<sup>3</sup> of the academic rankings in

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<sup>1</sup> This article is a product of the research project titled “Academic rankings of the private sector in Brazil: trajectory and methodologies adopted in a comparative perspective with Ibero-American space rankings”, funded by the National Council for Scientific and Technological Development (CNPq), process No. 310775 / 2014-0, coordinated by Dr. Adolfo Ignacio Calderón, as a Research Producer Research Grant at CNPq, level 2, Education area, which also provides for the training of masters and doctors in Education.

<sup>2</sup> According to other studies on the subject in question (BERNARDINO, MARQUES, 2010, CALDERON, MATIAS, LOURENÇO, 2014; LOURENÇO, CALDERÓN, 2015), the term “academic rankings” is adopted, since it encompasses the diversity of activities and functions related to the university world. In addition to the ranking of HEIs allows to take as reference other indicators such as undergraduate courses, postgraduate courses, scientific research groups, graduates and employability, knowledge transfer, technological innovation, international projection, among others. Even the term “academic ranking” is the name of some international rankings, such as the famous Shanghai ranking, Academic Ranking of World Universities (ARWU), published by Shanghai Jiao Tong University.

<sup>3</sup> The term “implications” is used in this research in a comprehensive way, in the same way that Marginson (2013, p.46) brings in his text: “academic papers discuss the implications for policy and

higher education, based on trends in international scientific literature. The linguistic parameter was published exclusively in English. The source parameter was scientific articles published in peer-reviewed journals, accessed through the online databases of Scopus and the Social Sciences Citation Index (Web of Sciences, also known as WoS)<sup>4</sup>.

The descriptors initially used in this research were academic rankings and university rankings, both without quotes, to capture all articulations between these terms in the scientific articles available in those online databases. As a result, 7,004 studies were listed, being 1,974 articles in English for academic rankings and another 5,030 for university rankings. This large number of studies confirmed the relevance of the theme; however, made it impossible to analyze the information and achieve the objectives of this qualitative research.

In face of the high volume of studies identified, another strategy was defined for the descriptors of research, taking the reference of the international academic ranking of the British newspaper *The Times*, because it is one of the oldest and most relevant in the world. New research was carried out, using the same bases and delimitations described above, using as descriptors: “Times Higher Education rankings”, “The Times rankings”, and “The rankings ranks”. The chronological parameter of the research was established with the selection of articles published starting in 2010, the year in which the English newspaper took sole responsibility for the Times Higher Education Rankings, previously shared with Quacquarelli Symonds.

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regulation, and behaviors and systems, and global relations of power”. It covers here the various dimensions of the phenomenon of global academic rankings, such as Durkheimian social facts, in the various higher education systems of the world, cited in the selected articles. The word “implications” is commonly used in titles of scientific articles in Education, in Brazil and abroad; Among several examples are: Gatti (2001), Marginson (2007), and Sordi (2012).

<sup>4</sup> This online survey was conducted through the Portal de Periods of Capes (Foundation for Coordination of Improvement of Higher Education Personnel, linked to the Ministry of Education of Brazil). This Portal is a virtual library, which makes available to Brazilian educational institutions more than 120 reference databases of online data and more than 38,000 national and international scientific journals. Among these bases, Scopus and the Web of Science stand out as the most complete and up-to-date for the humanities.

This online survey, conducted on November 18, 2016, selected 54 scientific articles in English language, published in peer-reviewed journals, excluding duplicities. This set of articles had its titles, keywords and summaries read and classified into two thematic groups: theoretical-conceptual and bibliometric-statistical.

The first thematic group, of the theoretical-conceptual studies, identified texts that discuss, mainly, about social implications of the international rankings for higher education, not restricted to the Times Higher Education rankings. These implications may be related to education and research, to the educational system, and to the various social actors involved, such as public entities and control bodies, governments and politicians, universities, other higher education institutions (HEIs), research institutes, teachers, researchers, students, family members, the press, and the public. The second thematic group on bibliometric-statistical studies has aggregated selected scientific papers that discuss, with greater emphasis, the operational and technical aspects of academic rankings. These last articles will not be analyzed in this research.

With these parameters and cut-outs above, it was confirmed that its contents were theoretical-conceptual and pertinent to the researched topic. Finally, there were 23 international studies dealing with the implications of the academic rankings for higher education, published as of 2010; Such as: Anonymous (2010), Arimoto (2015), Bowman and Bastedo (2011), Catwell and Taylor (2013), Chang et al. (2015), Hicks (2012), Hou et al. (2015), Huang (2015), Igarashi and Saito (2014), Knight (2015), Lee and Lee (2013), Marginson (2014), Matthews (2012), Moruku (2013), Nisar Connell (2013), Postiglione (2015), Safón (2013), Soh and Ho (2014), Tham (2013), Wilkins and Houisman (2012), and Yonezawa and Shimmi (2015). This final set of selected studies was analyzed in two sections: bibliographic description and implications in higher education.

## **Bibliographic description of the selected articles**

For the construction of this bibliographic description, the following aspects of the 23 selected papers were highlighted: countries of academic linkage of the authors; scientific journals of its publication; bibliographical references; and academic rankings cited.

### **Academic linkage**

The observation of the academic linkage of the authors, cited on the selected studies, showed a distribution of researchers from different parts of the world. This study considered the academic linkage of the main author of each study, independently of the number of signatory researchers, as it appears in the international bases researched.

The table 1 presents data from year of publication, country of academic linkage and name of the main author of the scientific articles selected by the parameters of this research. The USA and England show the largest number of published articles. The third highest frequency is from Japan, whose context will be dealt with more in section 3. Asia appears with more articles from authors from several countries. Finally, it should be highlighted the absence of articles by authors with academic ties in other countries, also with a university tradition, such as Germany and France, and the absence of authors with academic ties in Latin American countries.

### **Periodicals of selected publications**

The review of the journals where the selected articles were published shows a concentration in the journal Higher Education, with 11 of the articles published. Higher Education, also called The International Journal of Higher Education and Educational Planning, is the leading

international scientific publication in higher education, and is produced by Springer International Publishing (SPRINGER, 2016a). Scientometrics has published 3 journals and presents itself as an international journal focusing on quantitative aspects of science, also by Springer International Publishing (SPRINGER, 2016b). The other articles were published in the periodicals: Culture Sociology, European Journal of Education, Journal of Asian and African Studies, Journal of Studies in International Education, Nature, and Research Policy.

**Table 1** - Academic linkage countries of authors of selected scientific papers

Regiões	Países	#	2010	2011	2012	2013	2014	2015
	África do Sul	1			Matthews			
	Nigéria	1				Moruku		
África		2			1	1		
	Canadá	1						Knight
	EUA	5	Bowman e Bastedo		Hicks	Cantwell e Taylor	Igarashi e Saito	Nisar
Américas		6	1		1	1	1	2
	China	1						Postiglione
	Coréia do Sul	1				Lee e Lee		
	Japão	3						Arimoto; Huang; Yonezawa e Shimmi
	Malásia	2				Tham	Tan e Goh	
	Singapura	1					Soh e Ho	
	Taiwan	2			Hou et. al.			Chang et. al.
Ásia		10			1	2	2	5
	Espanha	1				Safón		
	Inglaterra	4	Anonymous		Wilkins e Housman	O'Connell	Marginson	
Europa		5	1		1	2	1	
Total		23	2	0	4	6	4	7



### **Bibliographic references of selected scientific articles**

The survey of the bibliographical references of the selected scientific works totaled more than 2,000 citations, among articles, books, national and international entities, public agencies, universities, academic rankings, electronic addresses of public and private institutions, among others. Such quantity and diversity of bibliographic references seems to stem from the wide range of implications that international rankings generate for higher education and for society at large in various systems, contexts, and countries.

The table 2, above, shows the authors cited in 10 or more of the articles surveyed. To mitigate self-citing effects, only one quotation per author was counted for each article researched. The number of citations, the name of the main author of the references, his / her country and institution of academic or professional relationship, shall be checked when the articles are published, and the work cited for the oldest and the most recent year. The three authors with the highest number of citations are from countries of Anglo-Saxon origin - Australia, USA and Ireland - where international rankings are published and used the longest. The most cited author, is the Australian Simon Marginson, was linked to the University of Melbourne until November 2013, when he moved to England. There are two American authors and one Moroccan, linked to institutions in the United States. Four Dutch authors, two of them linked to the University of Leiden, where there is an important international academic ranking. Finally, there is a Chinese author, a Korean, and an Italian. Table 2 shows that the cited authors had most of their articles published in this 21st century.

### **International academic rankings quoted**

The verification of the most cited global academic rankings in the selected scientific articles - considered a single ranking count — showed the THE ranking in all works, since it was used for research criteria and

for being one of the most well-known academic rankings. The ARWU ranking, produced by Shanghai University in China, is the second most prominent, with 18 unique citations, as it appears as a very prestigious ranking, especially in Asia and Oceania. The QS Ranking, of the British company Quacquarelli Symonds, is the third of this list, with 17 citations, with good in Europe and in countries ibero-Americans. The other rankings, in order of frequency, are the SIR, from the Spanish group SCImago, and Leiden from the Dutch university of the same name, with 6 and 4 citations.

**Table 2** - Most cited authors in selected scientific articles, with number of citations, academic linkage and years of cited articles

Publicações	No.	2010	2011	2012	2013	2014	2015
High Education	11	Bowman	-	Wilkins	O'Connell	Soh Tan	Arimoto Chang Huang Nisar Postiglione Yonezawa
Scientometrics	3	-	-	Hou Matthews	Safón	-	-
Outros	9	Anonimous	-	Hicks	Cantwell Lee Moruku Tham	Igarashi Marginson	Knight
<b>Total</b>	<b>23</b>	<b>2</b>	<b>-</b>	<b>4</b>	<b>6</b>	<b>4</b>	<b>7</b>

## Implications of academic rankings in higher education

The complete reading of the 23 theoretical-conceptual articles selected in this research identifies several implications for higher education and educational systems. These implications were identified and organized in three complementary groups: internationalization and competition; governance and autonomy; and productivity and quality.

## Internationalization and competition

International academic rankings can reinforce perceptions of prestige and relevance of HEIs best placed in their classifications, causing implications within and outside these institutions. Igarashi and Saito (2014), from a Bourdieu's sociological perspective, speak of the capacity of rankings to confer symbolic capital to universities, their managers, teachers and students worldwide. The authors identify the interaction between global academic rankings and cosmopolitanism; Because the presence of world-class universities of the World Class Universities (WCU), confers symbolic capital to the localities that house them, making them more prestigious, culturally, socially and economically.

Knight (2015) highlights the importance of internationalization for new formatting of WCU models and higher education systems in the world, and observes the phenomenon of global academic rankings as an inducer of university internationalization. This author proposes a model of analysis of the WCUs of three types: classic; subsidiaries; and co-funded. The first generation is that of an internationalized university, which receives students and researchers from various countries at its facilities, such as with major American and British universities such as Harvard, Columbia and Oxford. The second generation, called the branch model, is where international universities establish themselves in other countries, with their own teaching and research units or representative offices. Knight (2015) located 210 branches of international universities in 2011, most of them in Asia and the Middle East, and 78 were of American origin. Among the examples presented by the author is the University New York University, with branches in Shanghai (China), Abu Dhabi (United Arab Emirates) and in 11 other countries. Co-founded international universities constitute the third and most recent generation of WCUs. They work independently from their headquarters and in direct collaboration with their partners - usually universities with a tradition in the local market. Examples include the Singapore University

of Technology and Design (SUTU), associated with the Massachusetts Institute of Technology (MIT).

Asia appears as the continent where global rankings most have implications in the 21st century, within and outside the academic community. Lee and Lee (2013) note the efforts of the government and universities in South Korea to gain greater prominence in international academic rankings. In a study on higher education in Malaysia, Tan and Goh (2014) identify three key issues for the internationalization of their universities: receiving foreign students; Have articles in international publications; And gain better positions in global academic rankings. Tham (2013) also carried out a study of the Malaysian case and reached a similar diagnosis. This author suggests some alternatives for Malaysian universities to improve their position in international academic rankings; Such as bringing Nobel-laureate teachers as visitors and lecturers on regular courses, and giving academic staff experiences abroad to broaden their knowledge and network of contacts. Hou et al. (2012) also observed several Asian universities under pressure from their national governments to become WCUs. This effort requires a lot of financial and human resources for universities, but there are not enough resources for all candidate universities.

Huang (2015) identifies in China the most eloquent case of public policy focused on higher education today. In 1994, the Chinese government launched the 211 Project, which set the goal of having 100 Chinese universities of world reference in the 21st century and, in 1999, the 985 Project, with the explicit aim of developing Chinese WCUs. Incubated universities received resources close to U \$ 4 billion, only for the initial period of 1999 and 2003. The projects mentioned reached the entire Chinese teaching and research system; A large-scale merger of universities, specialized colleges, research institutes and hospitals into university structures was promoted. In addition, the Chinese government supported thousands of undergraduate and graduate students abroad, partnerships with foreign researchers and universities, and encouraged the adoption of teaching and management practices close to the world's most prestigious universities. In another study, Postiglione (2015) notes

the difficulty of Chinese universities in balancing their efforts in teaching and research. Heavy government incentives and pressure for HEIs to take the lead in global academic rankings. The author identified a direct relationship between the placement of the universities in the rankings and the maintenance of the researchers, in a policy of “last in the ranking, first to be fired” — from the original “last ranked, first to be fired” (POSTIGLIONE, 2015, p. 237). This situation makes academics look for better working conditions outside of Chinese WCUs, both in the business sector and abroad.

In a study on Nigeria's higher education system, Moruko (2013) reports that the federal government has stated its intention to raise the role of universities in the cultural, social and economic development of that African country; and improve their rankings in global academic rankings. However, the government did not provide the expected support and, on the contrary, proposed the privatization of public universities and adopted a model of accreditation of educational institutions and courses. In view of this situation, HEIs were compelled to seek self-support, especially through the commercialization of teaching.

Marginson (2014) notes that academic rankings present the risk of being stuck in circular behavior, where a good reputation leads to good ratings and a better future reputation for top-ranked universities in the form of a “Halo effect”. Bowman and Bastedo (2011) explore the theory of anchoring to suggest that university rankings in academic rankings influence their institutional reputation. O'Connell (2013) examined different research on academic rankings, according to his theoretical perspectives, and identified that a majority were of technical and normative studies and dealt with methodological aspects of the international rankings. In a study on the implications of the prestige of universities and their academics, Safón (2013) suggests the existence of factors of mutual influence between the results of the ARWU and THE rankings. For Cantwell and Taylor (2013), as academic rankings become more prominent, research has examined whether this phenomenon creates greater

inequality among universities, disfavoring less prestigious institutions or with less funding available.

### **Governance and autonomy**

One way for governments to influence research in universities is through research financing systems based on performance indicators. Hicks (2011) has identified several of these systems in operation in the UK, Spain, Czech Republic, Hong Kong, China, Australia, Poland, Portugal, Italy, New Zealand, Belgium, Norway, Sweden, Finland, Denmark, and the United States. These public financing systems have as main characteristics: focus on increasing the quantity and productivity of university research; Replacement of the traditional chain of command and control, from government to university, by market incentives; Management by projects, with devolution of resources, in case of not achieving the expected performance; Government as a policy maker and research services contractor, with the institutions; And increasing the accountability of managers and researchers. This researcher identifies that government funding systems for research are influenced by academic rankings and by their own university performance indicators. This author also highlights the relationship between academic rankings and student decisions and their financial implications for universities, when he states: "universities pay close attention to rankings and their prestige is entirely rational as potential students use rankings to Decide on their destinations, especially at the undergraduate level, and since the money follows the students".

In the United States, in 2013, according to Nisar (2015), President Barack Obama has launched a new strategy to make higher education more accessible to the middle class. Although this policy had several components, this researcher considered payment for performance as its central element. According to the author's study, although they had incentive systems for teaching and university research, the United States had never had a federal public system of monitoring

higher education. Based on the theoretical perspective of game ecology, this study indicates the American failure to establish public funding policies based on academic performance due to the complexity inherent in higher education where the government lacks the power to impose goals that conflict with other goals of HEIs - especially for the best ranked universities in the rankings.

Yonezawa and Shimmi (2015) note major challenges for Japanese universities to seek world class status in the 21st century, as they see in their low ranking in global academic rankings. These authors indicate that the construction of Japanese WCUs implies a greater concentration of other traditional higher education systems are subject to the implications of global academic rankings. Editorial published by the scientific journal *Nature* (ANONIMOUS, 2010) notes that in the period 2007 to 2010, the government of then-President Nicolas Sarkozy set targets to put two French universities among the Top 20 and 10 among the Top 100 Of the ARWU and THE rankings. The publication drew attention to the excessive influence of academic rankings in decision making in higher education systems; However, acknowledged that, whether or not they agree, international academic rankings are about to stay, both for universities and for the scientific community.

### **Quality and productivity**

In an article dealing with the expansion of higher education in Taiwan - from 348,290 students enrolled in 1984 to 1,345,000 in 2013 — Chang et al. (2015) discuss the quality of this system. Two large universities were surveyed, where there was strong governmental pressure to become WCUs, through increased publication of scientific papers. The teachers' research effort had presented positive results, with those institutions surveyed presenting an average annual production of 2.6 publications per faculty member. However, a questionnaire applied to undergraduate students of these universities presented an average negative

concept of -1.25% for teaching activities, to a minimum of 2%, showing strong dissatisfaction among students with their quality. These authors conclude that the balance between quality teaching and research in higher education has become a major challenge in Taiwan and around the world.

Soh and Ho (2015) conducted a comparison exercise between the situation of higher education in Hong Kong and Singapore, based on their performance in the international academic rankings, and observed the universities of both countries facing international competition, through the search for the international academic rankings. Postiglione (2015) considered the situation of the educational system in Hong Kong more favorable than that of Mainland China, highlighting the high degree of university autonomy, high internationalization and the preservation of the position of national universities in the face of international competition in Market.

Japan's universities also find it difficult to get better positions in international academic rankings. According to Arimoto (2015), for this to happen, Japanese HEIs would have to increase the production and productivity of their international publications. This author believes that the following actions could produce such an effect: increase the exposure of universities to a market valuation mechanism; To foster the greater exchange of experiences and productions of Japanese researchers with the international academic community; To allow discussions and decisions from the bottom up in public universities, still very traditional and hierarchical; Increase research focus for academic productivity; And give more space and time to research for younger academics from universities, who usually have high relative teaching load, to the detriment of research. This author reflects on the difficulties in the formation of new researchers, which reach Japan and other systems of higher education based on traditionalisms, and which prejudice the expectation of better positions of their universities in academic rankings (ARIMOTO, 2015, p. 170).

In a study of the ranking of South African universities in international academic rankings, Matthews (2012) notes that some of the 23 universities in the country appear in the global rankings. However, in an



erratic and inconsistent manner, not allowing analysis and verification of the quality of institutions by these instruments. The major challenges of these institutions would be to increase their academic productivity and internationalization by improving their performance in number and quality of publications, obtaining more quotations from their published articles, increasing the number of graduate students, and Greater reception of foreign students and researchers.

A study by Wilkins and Houisman (2012) on business schools in the UK has shown that research also plays a decisive role in the classification of HEIs in global academic rankings as well as in more specific ones. In order to achieve the best rankings, these institutions should have peer-reviewed scientific journals and periodical journals based on established academic criteria, based on known theories, and contributing to broader international scientific knowledge. These authors note that rankings positioning directly affects the prestige and institutional reputation of business schools, and that these are key factors in attracting students, faculty, researchers, and funders.

## **Final considerations**

Nóbrega-Therrien and Therrien (2004, p. 15) say that the constructing the state of the question process coexists with the complexity and plurality of views brought by various authors, especially in the field of the humanities. The contemporary world exacerbates these differences and challenges the researcher to unravel the meaning of the multiple rationalities and logics that happen in it. This survey of the state of the question about the implications of academic rankings for universities, based on 23 articles selected in the international academic literature, also revealed this context of complexity and plurality. Multiple perspectives regarding this social phenomenon are presented for different contexts and countries, and the various implications of the global academic

rankings in higher education could be identified and organized into three broad groups: internationalization and competition; governance and autonomy; and quality and productivity.

These scientific articles allow us to identify several relevant implications of the phenomenon of global academic rankings in higher education. These include: a) the high symbolic capital generated for universities, professors, students and, also, for the localities that house the best classified institutions in these rankings; b) the expansion of IES internationalization models, based on the best performing universities in the global academic rankings; c) the use of rankings in public policies to stimulate the development of new world-class universities, especially in Asia; d) the stimulation of scientific publications in peer-reviewed international journals, highly valued by global academic rankings; and e) the emergence of public and private funding constraints related to the performance of HEIs in these classifications. This set of implications, which may present nuances in different national education systems, seems to show that global academic rankings will continue to be relevant and have new implications for higher education in the world.

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