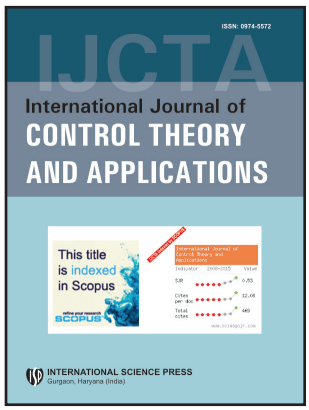

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Ranking of Scientific Visibility of Latin American Universities

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Abstract: The ranking of universities published on the web by both Webometrics and Scimago are considered measures of internationally recognized visibility, in which variables related to the dissemination of scientific contents are measured. The present work explores these classifications of visibility of the Latin American universities as well as a documentary revision of the same ones. There are divergences between countries that are considered similar, even, between universities of the same country. As a result, it is necessary to analyze the variables that affect the visibility of Latin American universities, especially those related to research, that affect their efficiency in this process of international scientific positioning.

Keyword: Visibility, universities, scientific research, Latin America.

1. INTRODUCTION

The comparative positioning of Universities, according to their visibility, is not a recent practice, the first Ranking appeared in the USA in 1983. The purpose of this research is to reflect the quality of the Universities, for competitive and commercial purposes, depending on the visibility they have The results of their investigations. Although the purpose of universities is a teaching role, what is shown as a reflection of their quality and the purpose of their evaluation is the result of their research.

Since the birth of the first Scientific Review, bibliometric factors have been used to evaluate the impact that the editions and their articles have, ie their use, among these are indexes such as ISI, Scopus (currently under the platform Scimago), Scielo and others. With the Web and the Open Access movement, with the Berlin Declaration of 2003, researchers now have not only publications in scientific journals (tariffs and restricted access) but also Open Access Digital Magazines and Repositories (known as The site for the Autocitas), seeking to reach an increasing number of readers, reducing editorial costs. The repositories are web sites (usually located in university portals) where the research works carried out by the scientific community (of teachers and students) are published, which have been evaluated by a defense process. Including a new role to the Universities, the one

of having portals that allow to guarantee the protection of their intellectual patrimony and the dissemination of knowledge.

Within the rankings until now developed through the Wed is the Webometrics and Scimago, the first for the weighting of Universities and the second of the Magazines. It emphasizes the importance of being in this evaluation and the position. The Webometrics platform in its January 2017 edition, ranked 11,996, of which approximately 30% are Latin American. Highlighting the importance of quality university education for the development of nations and the world.

There are several strategies that, from the perspective of Universities (and the use of its portal), the teachers-researchers, students and country can be made to enter, maintain or stagger in the World Ranking. It will always reflect the doubt of which of the actions to be implemented will be more efficient.

The purpose of this paper is to explore these visibility classifications of the Latin American universities as well as to perform a documentary review of them. The structure of the article is divided in the development, which shows the revision of the visibility of the University Institutions and the Web ranking (Webometrics) and the Scimago. Finally, the results highlight the Top 10 of the world and the Top 100 of Latin America, as these have been distributed by countries.

2. DEVELOPMENT

(a) The Visibility of University Institutions

Universities currently must reflect their activity on the Web, to guarantee their intellectual heritage and the dissemination of knowledge, without editorial intermediaries and at a lower cost [1]. In spite of criticism, the Web came to be developed as the main means of disseminating information, with special importance in the academic development of Higher Education or University, of research and extension. Compared with the 1990s, today's universities are characterized by having a homogeneous interface, a solid content architecture and by implementing advanced interactive services [2].

University strategic plans and their policies seek to target open access and place their presence on the Web, as internal and external communication pillars that support university life [3,4]. The different stages of communication (production, application and transmission) can be seen in the teaching, research and extension functions, which must be visible and useful to the academic community. In addition, visibility requires measurement through indicators that allow it to be evaluated and comparisons between universities.

The evaluation of university quality, measured through its production and documentary use, is not recent. The measurement of bibliographic citations and articles in paper journals begins to be used in various media. However, the massive use of the Web brings additional advantages, such as measuring the number of queries and word documents and evaluating their presence and visibility through their web domain [5].

Cybernetic measurements have also served to establish a ranking among universities, among other things, that serves as a useful for the election of students, often for commercial purposes. Among these Ranking, the webometrics is a system dedicated to the measurement of the visibility on the web of the Universities of the World, according to [5,6]. It is published on a semiannual basis and makes a ranking of the Universities in function of the use given in the Web. Now not only for the quality of the information that is used, but for its impact. This has made universities competitively seek to establish strategies and policies for users to increase the use of materials published there. Among these is:

(a) Include in its portals the publications of the works carried out in the form of Digital Repository of Open Access.

(b) Integrate with social networks like Facebook, Instagram, Twitter and others

(c) To ensure that all administrative processes of the University are carried out through its portal.

(d) Encourage its researchers and develop technological competencies so that their findings are published formally on the Web

In addition, research has been carried out to establish policies and plans that allow the University to remain and increase the impact of its publications and, in this way, the Ranking.

(b) The Web Ranking of Universities (Webometrics) and Scimago

The University comparison or Ranking is not new, referred to as one of its beginnings in the USA, in some statistical reports of United Stated Bureau Education in 1870, and is not since 1983, with the publication of the US News & Word Report (USNWR), Which begins to be as we know it today [7]. The idea of the Ranking is to evaluate the university quality through the use of bibliometric (currently, cybernetic) indicators that allow classification in an order. With the exchange and emigration of students and the commercialization of education, the idea of Ranking grows as a support tool.

[6, 12] shows recent studies on Ranking and visibility of documentation on the Web. In this table the authors, year of publication, the object and nature of the study, the temporality, the scope and the type of Ranking used for the classification are highlighted. It can be seen that 55% of the studies performed are cross-sectional and only 18.75% are temporary. The transversal ones allow to analyze the behavior among themselves of the units of studies and the temporary ones as has been the evolution in the time of each one of these of them. There are different types of Ranking used for comparison, among which are the search engines like Google (in different versions), Yahoo and YouTube. In addition, Webometrics and SCImago, as specially designed tools for developing these Rankin.

The first to establish a Ranking were the US Universities in 1983 with the publication of the US News & Word Report (USNWR). According to the World Ranking Web of Universities published by Webometrics in January of 2017, out of a total of 11,995 universities reported, the ten (10) first Universities of the world, nine (9) are of the United States, being headed by Harvard University. With regard to Latin America, 3,680 universities account for 30.7%. Figure 1 shows the distribution of the Latin American Ranking, highlighting those countries with more than 50 universities reported on the website. It is observed that 66% of universities reported correspond to Brazil and Mexico.

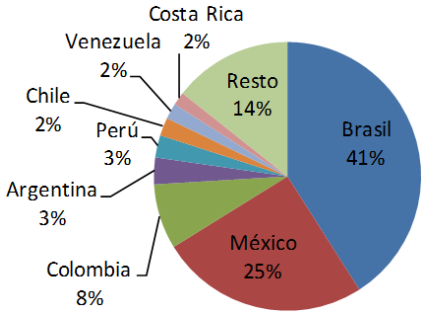

Figure 1: Web Ranking of Latin American Countries with over 50 Universities Reported
Source: **Webometrics (2017)**

The University Webometrics (RWU) is an initiative of the Cybermetry Laboratory, a research group belonging to the Higher Council for Scientific Research (CSIC), to measure Web presence and visibility of institutions [5, 6]. Since 2004, it is published two (2) times a year, one at the end of January and the second at the end of July. For the January 2017 publication of the webometrics, 11,996 Universities were classified worldwide. This ranking is based on Google Scholar Citations (GSC), which is a bibliographic database, free and useful for bibliometric purposes. Provides the number of citations received for the items included. Its current size is more

than 200 million unique documents. This is almost three (3) times the current coverage of competitors such as WoS/Clarivate or Scopus/Elsevier (Webometrics, 2017). The GSC is a tool for establishing author profiles, using a Google account to begin collecting your publications and associated metrics.

On the other hand the SCImago Journal & Country Rank is an evaluation portal of magazines and countries based on the information contained in the Scopus database [8]. Both the ranking of journals and the impact index offered by this platform are increasingly used to evaluate and analyze the universities and their scientific publications in the face of accreditation and evaluation of research activity [9].

In the Top 100 of Latin American Universities in RWU, 82 correspond specifically to universities in Brazil, Mexico, Chile and Argentina (see Table 1 and Figure 2). The remaining 18 universities are distributed among nine countries. The world ranking of the publication of the first 100 Latin American universities ranged from position 63 to 1886, offering a range of different characteristics such as institution, country situation, visibility on the web, among others. It can be seen, for example, as Chile with 80 universities, 12 are in the Top 100 (15%), however Mexico with 929 universities reported, only 16 reach this visibility (2%). One wonders what are the variables that influence the efficiency of this visibility of Latin American universities, notorious even among universities of the same country, in the case of this Web Ranking.

In order to analyze and understand these rankings, efforts have been made by the countries of this region to define indicators, strategies and policies to increase them, among which are the National Autonomous University of Mexico (UNAM) [4], the Universities of Peru [10] and Peralta et al. (2011) and Hernández-Ferraraz and others (2012) of the Central University "Marta Abreu" of Cuba [8,16]. Considering these efforts, it is advisable to study how the dissemination and scientific networks of the Latin American universities influence the impact of this classification.

Table 1
Top 100 Latin American countries in the Ranking Web Universities (RWU), and their respective data of the Scimago Country Ranking (SCR)

	Rankin Webometrics			*Scimago Country Ranking*		
Country	*Quantity. Universities*	*Total Universities*	*Country*	*Quantity. Universities*	*Total Universities*	*Country*
Latín America (LA)	*In Top 100*	*Reported*	*LATIN AMÉRICA*	*In Top 100*	*Reported*	*LATIN AMÉRICA*
Brasil	43	3%	1507	41,0%	669280	48,3%
México	16	2%	929	25,2%	232828	16,8%
Chile	12	15%	80	2,2%	101841	7,3%
Argentina	11	9%	118	3,2%	159172	11,5%
Colombia	6	2%	289	7,9%	60402	4,4%
Venezuela	3	4%	70	1,9%	33780	2,4%
Puerto Rico	2	5%	39	1,1%	13841	1,0%
Perú	2	2%	99	2,7%	14434	1,0%
Cuba	1	4%	28	0,8%	31690	2,3%
Trinidad y Tobago	1	10%	10	0,3%	5037	0,4%
Costa Rica	1	2%	59	1,6%	9177	0,7%
Jamaica	1	5%	22	0,6%	4750	0,3%
Uruguay	1	3%	40	1,1%	13702	1,0%
Other country LA.	0	0%	390	10,6%	36075	2,6%
TOTAL			3680	100,0%	1386009	100,0%

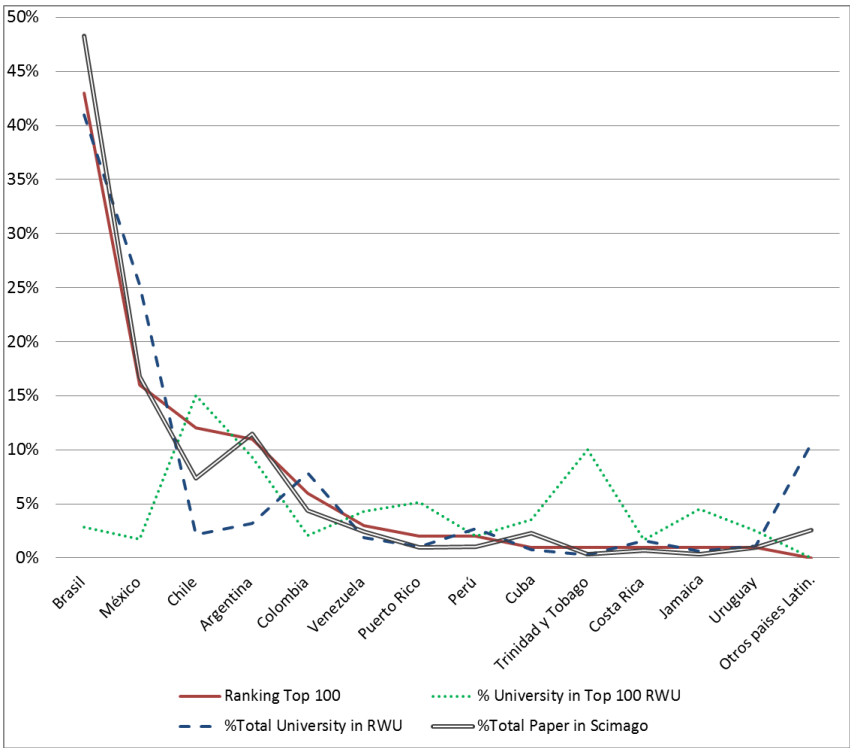

Figure 2: Top 100 Latin American countries in the Ranking Web Universities (RWU), and their respective data of the Scimago Country Ranking (SCR)

3. CONCLUSIONES

According to the webometrics platform, in its January 2017 edition, 11,996 Universities were classified in the World, of which approximately 30% are Latin American. Of these, the Top 100 shows the following distribution, that the 41; 25.2 and 7.9%, are distributed among countries such as Brazil, Mexico and Colombia, respectively. Nevertheless, it is advisable to carry out studies of the variables that influence the efficiency of the universities regarding their visibility, for the design of institutional improvement actions. Chile, is seen as a successful case, with 80 universities occupying the third place in the Web ranking with 15% of them, and the fourth place in Scimago, standing out favorably in relation to countries with more universities. There is also a consistent effort of visibility of the universities regarding their classification in both web ranking.

The revision of the visibility of the University Institutions and the web ranking (Webometrics) and the Scimago, demonstrate the efforts made by regions, countries and institutions to be included, maintained and positioned in these indicators, which are a reflection of the quality of the Research, which merit the definition of institutional guidelines to improve the classification and visibility of universities.

REFERENCES

[1] Nuñez, Luís; Torrens, Rodrigo; Vargas, Henry (2008). Repositorios institucionales y apropiación tecnológica. SABER ULA. Disponible en http://www.saber.ula.ve/handle/123456789/16742

[2] Pinto, Molina; Alonso, José; Cordón-García, José; Figuerola, Carlos; García, Javier; Fernández, Viviana; Gomez, carme; Zazo, Ángel (2003). Visibilidad de la investigación de las universidades españolas a través de sus páginas web en el ámbito del espacio europeo de enseñanza superior: análisis, evaluación y mejora de la calidad. Disponible en https://gredos.usal.es/jspui/handle/10366/56140

[3] Rodríguez-Ponce, Emilio; Pedraja-Rejas, Liliana (2008). Dirección estratégica en Universidades: Un estudio empírico en Instituciones Iberoamericanas. Interciencia. Vol. 34. No. 6. Pp 413-418.

[4] Laufer, Miguel (2009). Cómo desanimar el conocimiento. Editorial. Interciencia. Vol. 34. No. 1. Pp 5.

[5] Aguillo, Isidro; Ortega, José; Prieto, José; Granadino, Begoña (2007). Revista española de documentación científica. Vol 30. No. 1. Pp 49-60.

[6] E. Aguado-López, R. Rogel-Salazar, Rosario; A. Becerril-García; G. Zapata. Presencia de las Universidades en la Red: La brecha digital entre Estados Unidos y el resto del mundo. Revista Universidad y sociedad del conocimiento. Vol. 6. No. 1. Pp 1-17. 2009.

[7] Orduña-Malea, Enrique; Serrano-Cobos, Jorge; Ontalba-Ruipérez, José; Lloret-Romero, Nuria (2010). Presencia y visibilidad web de las universidades públicas españolas. Revista española de Documentación Científica, Vol 33, No 2. Disponible en: http://redc.revistas.csic.es/index.php/redc/article/view/554

[8] Hernández-Ferreras, Kiria; Cárdenas-de-Baños, Lissette; Fundora-Maribal, Jorge; Dorta-Contreras, Alberto (2012). Aspectos que influyen en la visibilidad de la producción científica de las universidades médicas cubanas. Revista ACIMED. Vol. 23. No. 2. Pp 210-2014.

[9] Aguillo, Isidro. Evaluación de la presencia en el Web de la UNAM y otras Universidades Mexicanas. Revista Digital Universitaria. Vol. 6. No. 8. Pp 2-9.2005

[10] Vilchez-Roman, Carlos; Espíritu-Barrón, Edmundo (2009). Artículos científicos y visibilidad: combinación impostergable y oportunidad que debe aprocecharse. Biblios. No 3.5. Pp 2-9.

[11] Peralta, María; Solís, Francisco; Peralta, Manuel (2011). Visibilidad e impacto de la producción científica de la Universidad Central "Marta de Abreu" durante el período 200-2008. Revista Cuban a de ACIMED. Vol. 22. No. 1. Pp 60-78.

[12] Scimago Journal & Country Rank (Marzo, 2017). World Report. Disponible en http://www.scimagojr.com/worldreport.php

[13] Webometrics (Enero, 2017). Ranking Web de Universidades. Disponible en: http://www.webometrics.info/es

[14] Formación Universitaria. SCImago. *Form. Univ.* [online]. 2012, Vol. 5, No. 5 [citado 2017-03-10], pp. 1-1. Disponible en: http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0718-50062012000500001&lng=es&nrm=iso.

[15] [AMELEC JESUS VILORIA SILVA, "Use of the Data Envolvent Analysis to Determine the Correct Management of the Economic Resources of a Country" . En: Ghana Ieee Transactions On Magnetics ISSN: 0018-9464 ed: Institute of Electrical and Electronics Engineers. v.2 fasc.n/a p.422 - 428, 2009.

[16] E. Villa, R. Pons and Y. Bermúdez, "Metodología para la gestión del proceso de investigación de un programa universitario". INGE CUC, Vol. 9, No. 1, pp. 65-82, Jun, 2013.