

## Standardization of the institutional address

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The development of different forms of communication and transportation during the past century triggered a phenomenon known as globalization. One of the most striking and unexpected features of globalization has been the international exchange of students, whom have considered foreign universities as the following step towards their education. Since universities are considered the culmination of a long process of human development, the search for an institution that will fulfill the students' expectations has turned complex (Nakpodia 2009). In their search for information about the massive array of universities worldwide, prospective students usually seek for university websites as one of the primary sources of accurate information (Simoes and Soares 2010). Even though these websites have become a frequent tool to enquire relevant information about undergraduate/post-graduate and R&D activities, the students still face certain hesitation as they are conscious that the contents displayed on the website may not reflect the quality of the education imparted.

Thus, the increasing importance of higher education has led to the construction of university rankings that are developed for individual countries and/or globally as is the case of the times higher education (THE) world university rankings and the QS world university ranking. As reported by Sauder and Espeland (2009), these rankings have been shown to affect the final decision of prospective students. The fact that the best-qualified students enroll on top-ranked universities has forced institutions to improve various indicators that are measured by each individual ranking. Nevertheless, one indicator that is present throughout all rankings considers the output on R&D that is estimated by the published articles. In both rankings, research outcome and citations are accountable for a considerable percentage of the final score assigned to each assessed institution. Given the relevance that institutional affiliations have, some questions arise. Have the institutions standardized their affiliation on published documents to ensure maximizing their outcome? Have databases, such as Web of Science (Thomson Reuters) and Scopus (Scimago),

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standardized the institutional affiliation from the published documents so that the research productivity of any institution is not undermined?

To answer these questions, I created two datasets using all the articles published in a 5-year period (2006–2010) that included at least one address registered to Chile. From the Web of Science database a total of 24,383 records were collected, whereas 26,994 records were retrieved from the Scopus database. The discrepancy in the total number of records was anticipated, due to the number of scholarly journals indexed by each database (Leydesdorff et al. 2010). Nevertheless, both datasets had to be manually curated to evaluate the research performance of each institution. Since the names of the institutions derived from the Spanish language, the data registered by each database was at times entered as variant names. And this is where we have a problem.

For instance, the top-ranked university of Chile in terms of publications is Universidad de Chile as indicated by Web of Science and Scopus. However, a detailed analysis of its records revealed some inaccuracies. The record of an article extracted from Web of Science that was written by Al-Ghawi and Uauy (2009) partially included one of the addresses leaving out the host institution, in this case Universidad de Chile. A similar imprecision was detected in Scopus as reflected in the article authored by Tobar et al. (2010), record which did not include Universidad de Chile as the host institution. Table 1 summarizes a set of variant names registered by Web of Science and Scopus for Universidad de Chile, including the number of records that were retrieved using each variant name as the search query. As can be seen, the quantity of records associated to variant names in Scopus may disturb a detailed analysis of an institution research performance. For instance, 304 records were registered to an institute within the university (Instituto de Nutricion y Tecnologia de los Alimentos), and not to the university. In the case of Web of Science, the majority of variant names were linked to the host institution. Nevertheless, this database presented a few typographical errors that were not present in Scopus. As an example, Web of Science registers Universidad Catolica del Norte as “Univ Catholic Norte” but it was found within the dataset as “Univ Catolic Norte” on three occasions and as “Univ Cattolica Norte” three separate times. This is not the first time such issues have been reported. In fact, Vieira and Gomes (2009) previously informed of wrongly registered addresses for documents affiliated to two Portuguese universities. However, the success rate in identifying

**Table 1** Five most common variant names and records registered for Universidad de Chile within Scopus and Web of Science

Scopus		Web of Science	
University affiliation	Records	University affiliation	Records
Universidad de Chile	5,509	Univ Chile	6,752
Facultad de Medicina de la Universidad de Chile	847	Hosp Clin Univ Chile	113
Instituto de Nutricion y Tecnologia de los Alimentos	401	Inst Nutr and Food Technol	127
Hospital Clinico de la Universidad de Chile	419	Clin Hosp Univ Chile	10
Facultad de Medicina de la Universidad de Chile Instituto de Ciencias Biomedicas	402	INTA	9
Universidad de Chile Facultad de ciencias Quimicas y Farmaceuticas	352	Hosp Clin Jose Joaquin Aguirre	8
Curated total	7,103		6,844

Data extracted from 2006–2010

publications for both universities ranged between 96 and 99 % using both databases independently. In our case, Web of Science had a 98.7 % success rate in identifying the publications from Universidad de Chile as opposed to Scopus' success rate, which was only 77.6 %. According to Scimago (2009), the Scopus affiliation identifier used by the database “disambiguates name variants, automatically identifying and matching an organization with all of its research output”. This does not seem to be working properly as the algorithms are not identifying the name of the institution in four out of the five name variants listed on Table 1.

One should keep in mind that in some occasions the authors of the documents were responsible for the generation of institutional variant names. In fact, all Chilean institutions were accountable for not using a unique institutional affiliation signature (Krauskopf 2012). Since both databases register the institutional address detailed on each publication, this clearly produces a detrimental effect for Chilean universities—more at a time when university rankings have become so relevant for students considering higher education studies.

There is an increasing need to standardize the institutional address for universities worldwide, but this action should emerge from the institutions as part of a publication policy. Each university should indicate to its members a unique institutional affiliation signature, which will define and reinforce the institutional identity. The exchange of this information with Thomson Reuters and Scimago will undoubtedly improve the statistics obtained by all users, including university rankings. In addition, the authors of each article ought to be accountable for checking that their own work has been registered without any mistakes by the databases.

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