

BRIC: Academic web contents in the four largest emerging economies

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Introduction

BRIC is a term coined (Wilson & Purushothaman, 2003) to define the four countries with the fastest growing economies: Brazil, Russia, India and China. Although there are important differences among them, they can be considered as representative of several regions, political and economic systems and also of R&D and academic structures.

Recently this “region” has attracted bibliometric attention (Zitt et al, 2006).

Methodology

The names and web addresses of the universities have been collected from the Catalogue of Universities by country of the Webometrics Ranking (http://www.webometrics.info/university_by_country_select.asp) that includes only universities with their own independent institutional web domain (10,953 in January 2007). The total number of BRIC domains is 1,674 (15.3%, or about one sixth of the total) distributed as shown in Table 1.

Table 1. Distribution by country (HE institutions with independent web domain)

Country	Universities
Brazil	196
Russia	315
India	262
China	901

Hong Kong universities (15 with .hk domain) have been excluded of the analysis as they behave differently and very prominently. In fact, as many as 6 of them appeared in Top 25 of the combined list. Some Chinese research institutions (under .ac.cn subdomain) offering higher education have been excluded as this is not their primary objective. Finally, the 131 domains appearing among the Top 2000 world list were chosen for further analysis. Details about how Webometrics Rank is build are described in Aguillo *et al.* (2006). Only 130 universities are represented as St. Petersburg University still maintains two different domains (*spbu.ru* and *pu.ru*). The irregular use of domain names by the Indian universities that changed URL addresses frequently decreasing then their link visibility can explain the low number of universities of this country in this study (Table 2).

Table 2. Population analyzed

Country	Universities
China	70
Brazil	34
Russia	21(+1)
India	5

The link analysis (Ortega *et al.*, 2007) was performed from data obtained during January 2007 from Yahoo search engine (search.yahoo.com) according to the following strategy:

linkdomain:univA site:univB

An adjacency matrix was built for the 131 institutional domains and analysed with UCINET 6.1 and graphically represented with NetDraw 2.2.

Results

Webometrics ranking (Table 3) take into account both the volume of information (number of pages, rich files and entries in Google Scholar –Table 4-) published in the webdomain and the visibility measured by the number of external inlinks.

Table 3. Top 20 BRIC universities

WR	University
97	Univ Sao Paulo
190	Univ Est Campinas
190	Beijing Univ
232	Moscow State Univ
281	Univ Fed Santa Catarina
336	Tsinghua Univ
402	Univ Fed Rio de Janeiro
421	Univ Fed Rio Grande Sul
529	Zhejiang Univ
557	Univ Fed Minas Gerais
562	Pont Univ Catol Rio de Janeiro
565	Shanghai Jiao Tong Univ
597	Univ Brasilia
633	Indian Inst Technol Bombay
635	Univ Est Paulista
665	Univ Sci & Technol China
670	Indian Inst Sci Bangalore
677	Nanjing Univ
688	Shandong Univ
711	Fudan Univ

Table 4. Number of rich files and Scholar (scholar.google.com) records

	.pdf	.doc	.ppt	.ps	Scholar
Total	418,172	254,683	59,419	14,924	131,206
Median	1330	1540	260	3	292
Min	41	128	9	0	4
Max	51600	9270	4970	2360	20200

In the Figure 1 the points shape show the nationality of each university, the size shows the percentage of English language pages over the total amount of web pages.

Conclusions

Large universities in the BRIC are among the Top ranked according to the Web indicators. For this small group there is a clear commitment to Open Access initiatives through web publication. As shown in Figure 1 there is a large overlap of this group with those universities that use extensively English in their web pages, bridging the four countries' academic webspace. If universities of English speaking countries, especially US ones, will

be added as outliers, we can conjecture that a more interconnected network will be obtained.

References

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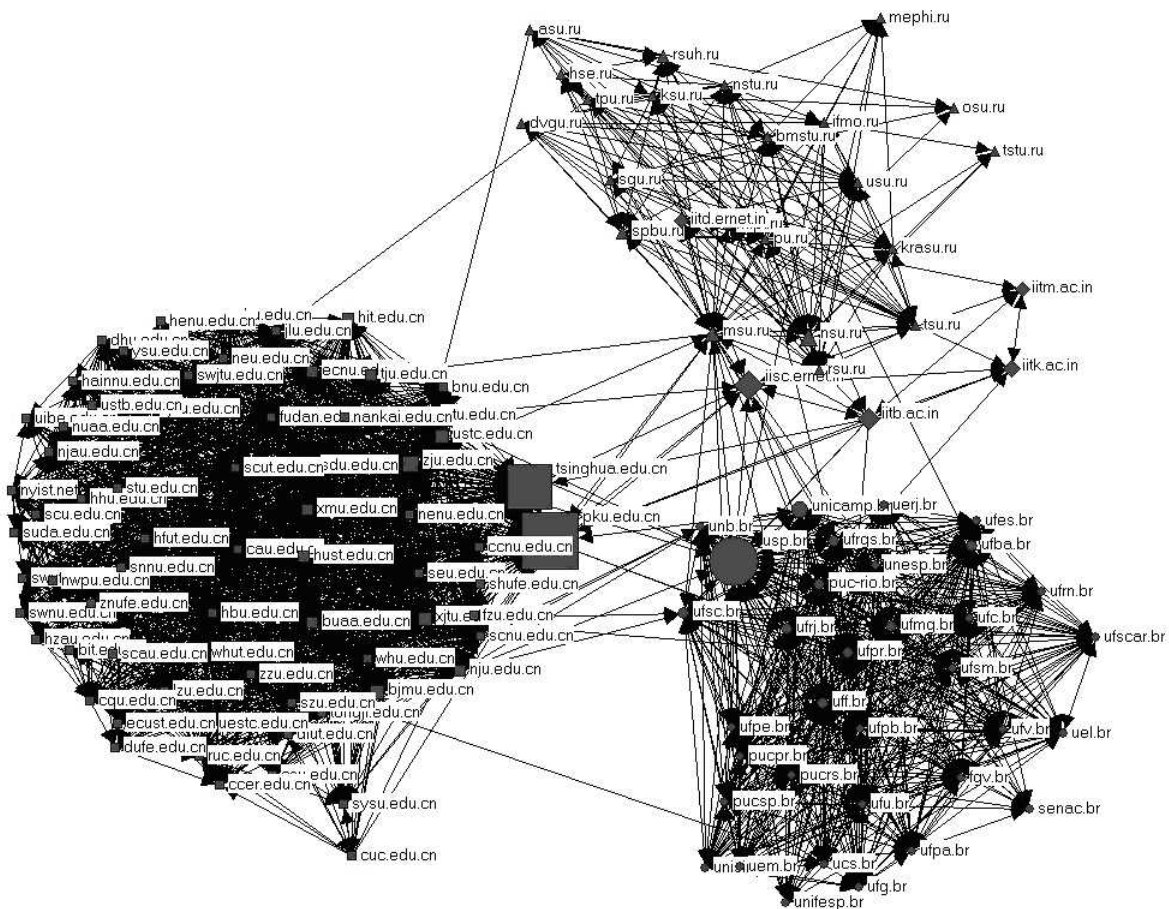


Figure 1: Link analysis of the BRIC universities