

# Webometric Analysis of Top Ten Asian and Indian Universities

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## Abstract

The paper tries to assess all the existing ranking systems which are used to rank higher educational institutions. The aim of the paper is to provide sufficient background to design and develop a new ranking system for a country. An attempt has been taken to find out the reasons of low ranking of Indian universities with respect to the world university ranking through webometric analysis of top ten Indian and Asian universities. A comparative study of top Ten Indian Universities and Asian universities is made with respect to significant web indicators, which are frequently used in ranking purpose. The results found that there is a significant difference of values of webpages, backlinks, rich files, Google Scholar and research publications between these top Ten Asian Universities and Indian universities.

**Keywords:** Webometric Analysis, University Ranking, Indian Universities, Asian Universities

## 1. Introduction

Due to the impact of globalization on higher education, government and funding bodies for academic accountability, the concept of ranking system for higher academic education has been grown up especially after 1990s. The global ranking of higher educational institutes especially university systems is a mammoth task. Besides, there is no universally accepted methodology to be followed for ranking the universities. Previously, bibliometric indicators like counting citations, number of published article, student-teacher ratio, number of award received, score of impact factor etc. were adopted to rank the universities or institutions or persons based on their achievements. But, with the tremendous advancement of transformation of print media to digital media and the popularity of Internet paved way to generate the new methodology for ranking the universities. Few international initiatives on ranking the universities were: 1. Academic Ranking of World Universities

(ARWU), Shanghai; 2. Center for College Affordability and Productivity, USA; 3. Global Universities Ranking, Russia; 4. Macleans, Canada; 5. Ranking Forum of Swiss Universities; 6. Ranking Web of Universities by Cybermetrics Lab<sup>1</sup> (webometrics.info); 7. Times Higher Education Ranking etc. In fact, India does not have any Universities been placed with top ten in the existing Ranking System. Therefore, the objective of present study is to provide background to develop a ranking system to rank Indian universities using webometric indicators. The scope of the study pertaining to the research study is limited to the webometric analysis of top Ten Asian Universities and top Ten Indian Universities.

## 2. Objectives

The research problems may be delineated into following objectives in order to understand in a better way. Followings are some of the objectives mentioned below:

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- To find out the suitable ranking indicators for developing new ranking system for India;
- To compare top ten Asian universities with top ten Indian Universities using appropriate webometric indicators;
- To find out the reasons of wide disparity in ranking;
- To find out the scope for improvement for the ranks of Indian Universities.

### 3. Methodology

#### 3.1 Selection of Universities

Under the methodology, only top ten Indian and Asian universities have been selected based on results of Ranking Web of Universities (RWU), July 2015 made available at webometrics.info by Cybermetrics Lab, Spain. Following table shows the list of universities along with countries and domain names.

#### 3.2 Data Collection

In order to collect the data on various web indicators, different methods and syntaxes were used. Data collection process was conducted during August 15-20, 2015. The

main web indicators are webpages, backlinks, rich files, publications, Google Scholar, referring IPs, referring domains, crawled pages etc. Number of **webpages** was collected from Google using syntax like site:iitkgp.ac.in. **Rich Files** are the combination of fourtypes offiles (.pdf, .docx,. doc and .ppt). These data were collected from www.google.com as against each domain of selected universities using the syntax like site:iitkgp.ac.infiletype:pdf. On the other hand, **Google scholar values** were collected for all the years. Web of Science (WoS) was chosen to collect research publications data. Backlinks data was collected from **ahrefs.com**. With the help of ahrefs.com, backlinks, referring IPs, referring domains, crawled pages were also collected.

#### 3.3 Data Analysis and Interpretation

All the data collected during the period were plotted in Microsoft excel for analysis. Simple statistical calculation has made to have a clear idea about the indicator and it helps to compare between Asian and Indian universities. Tabular and graphical representations of data are also made to provide the clear idea and the concepts underlying it, which leads to the formation and development of the new ranking methods specifically suitable for India.

**Table 1.** List of top ten Indian and Asian Universities with Domain Name

| Sl. No. | Country     | Name of Universities                        | Domain          |
|---------|-------------|---|-----------------|
| 1.      | Taiwan      | National Taiwan University                  | ntu.edu.tw      |
| 2.      | China       | Peking University                           | pku.edu.cn      |
| 3.      | China       | Tsinghua University China                   | tsinghua.edu.cn |
| 4.      | South Korea | Seoul National University                   | snu.ac.kr       |
| 5.      | Japan       | University of Tokyo                         | u-tokyo.ac.jp   |
| 6.      | China       | Zhejiang University                         | zju.edu.cn      |
| 7.      | Hong Kong   | University of Hong Kong                     | hku.hk          |
| 8.      | China       | Shanghai Jiao Tong University               | sjtu.edu.cn     |
| 9.      | Japan       | Kyoto University                            | kyoto-u.ac.jp   |
| 10.     | China       | Xiamen University                           | xmu.edu.cn      |
| 11.     | India       | Indian Institute of Technology Bombay       | iitb.ac.in      |
| 12.     | India       | Indian Institute of Technology Madras       | iitm.ac.in      |
| 13.     | India       | Indian Institute of Technology Kanpur       | iitk.ac.in      |
| 14.     | India       | University of Delhi                         | du.ac.in        |
| 15.     | India       | Indian Institute of Technology Delhi        | iitd.ac.in      |
| 16.     | India       | Indian Institute of Technology Kharagpur    | iitkgp.ac.in    |
| 17.     | India       | Anna University                             | annauniv.edu    |
| 18.     | India       | Punjab University                           | puchd.ac.in     |
| 19.     | India       | Cochin University of Science and Technology | cusat.ac.in     |
| 20.     | India       | Indian Institute of Science Bangalore       | iisc.ernet.in   |

Source: www.webometrics.info, Ranking Web of Universities, July 2015

## 4. Approaches to University Ranking

In this section, some major and popular International university ranking systems have been discussed and critically analyzed for the purpose of designing and developing a new ranking system in the context of Indian academic environment, especially university system.

### 4.1 Academic Ranking of World Universities (ARWU)

Academic Ranking of World Universities (ARWU) is the first world university ranking. This is non-webometric ranking system because most of the indicators used in this ranking system are non-webometric by nature.

#### 4.1.1 Essence of ARWU

The Academic Ranking of World Universities (ARWU) is developed by the Center for World-Class Universities and the Institute of Higher Education of Shanghai Jiao Tong University, China. It has been functioning since June 2003. It is updated annually and published the ranks of more than 1000 universities every year<sup>1</sup>.

#### 4.1.2 Indicators of ARWU

ARWU system consists of six indicators to rank universities. These indicators are mentioned below:

In this methodology of ranking, equal importance is given to publications, citation, highly cited researchers and staff winning Nobel prizes. In this method, 30% weightage is given to Nobel Prize and Field Medals. Per capita academic performance has been given weightage of 10% but it is not having any clear cut guidelines how to calculate the academic performance of an institute.

#### 4.1.3 Measuring the Suitability of Indicators in ARWU

The suitability of indicators used in this system has been judged from the point of view of inclusion of some indicators from existing methods to new method namely 'Webometric Ranking of Indian University (WRIU)', which has been designed and developed, partly on the basis of indicators taken from various ranking methods and partly on the basis of some new indicators suitable for Indian university system<sup>2</sup>

Table 3 tries to analyze critically the indicators and on the basis of this, all indicators have been categorized into three groups:

**Table 2.** Indicators in ARWU

| Sl. No.      | Indicators   | Weights     |
|--------------|--|-------------|
| 1            | Alumni of an institution winning Nobel Prizes and Fields Medals                                  | 10%         |
| 2            | Staff of an institution winning Nobel Prizes and Fields Medals                                   | 20%         |
| 3            | Highly cited researchers   | 20%         |
| 4            | Papers published in Nature and Science   | 20%         |
| 5            | Papers indexed in Science Citation Index (SCI)-expanded and Social Science Citation Index (SSCI) | 20%         |
| 6            | Per capita academic performance of an institution  | 10%         |
| <b>Total</b> |  | <b>100%</b> |

**Table 3.** Suitability of indicators in ARWU

| <i>May not be suitable to apply</i>  |  |
|--|--|
| <ul style="list-style-type: none"> <li>Alumni of an institution winning Nobel Prizes and Fields Medals.</li> <li>Staff of an institution winning Nobel Prizes and Fields Medals.</li> <li>Papers published in Nature and Science.</li> </ul> | <ul style="list-style-type: none"> <li>Most of the Indian universities are not having any alumni winning Nobel Prize.</li> <li>Majority of faculty members are not having publications in Nature and Science.</li> </ul> |
| <i>May be suitable to apply with modification</i>  |  |
| <ul style="list-style-type: none"> <li>Papers indexed in Science Citation Index (SCI) and Social Science Citation Index.</li> <li>Highly cited researchers.</li> </ul>   | <i>Reasons</i>   |
|  | <ul style="list-style-type: none"> <li>SCI and SSCI are very authentic and reputed databases. Therefore, papers and citations from these databases may be included.</li> </ul>   |
| <i>No indicators may be included as it is basis</i>  |  |

- Some indicators may not be suitable under any circumstances in the Indian university environment;
- Some indicators may be suitable with some modifications in Indian university environment, and lastly;
- A few indicators may be applied to the new ranking system on as it is basis.

## 4.2 Times Higher Education (THE) Ranking

This is non-webometric ranking system because most of the indicators used in this ranking system are non-webometric by nature.

### 4.2.1 Essence of Times Higher Education (THE)

The Times Higher Education World University Ranking<sup>2</sup> is a popular ranking system. It publishes a list of top 400 universities in the world covering six broad subject categories such as engineering and technology, life science, clinical, pre-clinical and health, physical sciences, social sciences and arts and humanities. This is based on data provided by Thomson Reuters from 15 countries across every continent for a period of 10 months. The overall rankings are based on 13 distinct parameters as categorized under teaching, research, citation, industry income and international mix.

### 4.2.2 Indicators of Times Higher Education (THE)

Following indicators are used in Times Higher Education World University Ranking. The detailed methodology<sup>3</sup> is available by Ann Mroz, editor of *THE*.

**Table 4.** Indicators in THE ranking system

| Sl. No.      | Indicators                            | Weights     |
|--------------|---------------------------------------|-------------|
| 1            | Citation                              | 30.0%       |
| 2            | Research                              | 30.0%       |
| 3            | Teaching Learning Environment         | 30.0%       |
| 4            | International Mix (Staff and Student) | 7.5%        |
| 5            | Industry Income                       | 2.5%        |
| <b>Total</b> |                                       | <b>100%</b> |

THE published its result of university ranking since last seven years using above indicators. In this ranking system, 90% weightage is allotted to teaching, research and citation. The teaching learning environment consists of reputation survey, staff-student ratio, PhD awards for students and staff, and institutional income.

### 4.2.3 Measuring the Suitability of Indicators in THE

Following table explains the suitability of indicators for inclusion in the WRIU and some indicators may not be suitable for determination of ranking in WRIU. The reasons are given in the concerned table. The methodology for ranking belongs to QS-THE produced by Quacquarelli Symonds, a company specializing in education and study.

**Table 5.** Suitability of indicators in THE ranking system

| <i>May not be suitable to apply</i>  | <i>Reasons</i>  |
|--|---|
| <ul style="list-style-type: none"> <li>• Industry Income</li> <li>• International mix</li> </ul>     | <ul style="list-style-type: none"> <li>• In Indian context, International students and faculty may not be much relevant indicators because most of these universities do not have foreign faculty and students.</li> <li>• Industry income is also not prime factor, as most of our universities have no scope for earning income from industry.</li> </ul> |
| <i>May be suitable to apply with modification</i>  | <i>Reasons</i>  |
| <ul style="list-style-type: none"> <li>• Teaching</li> <li>• Research</li> <li>• Citation</li> </ul> | <ul style="list-style-type: none"> <li>• These are very much suitable for ranking the universities. Although these are suitable but some sub-components like number of PhD awards and number of students are not in a position to consider due to some limitations.</li> </ul>  |
| <i>The Indicator "Citation" may be included as it is basis</i>                                       |   |

## 4.3 Ranking Web of Universities (RWU)

This method has been developed by Cybermetric Lab (webometrics.info) headed by Isidoro Aguillo. It is a webometric ranking method because all indicators used in the methodology are web-based.

### 4.3.1 Essence of RWU

The Webometrics Ranking of World Universities is an initiative of the Consejo Superior de Investigaciones Científicas (CSIC), research body in Spain. The Cybermetrics Lab, part of CSIC, concentrates on the quantitative analysis of Web since 1997. The purpose is to measure the scientific communication on the web

through web indicators. The performance of websites can be measured through combining the results obtained by various web indicators. Almind and Ingwersen<sup>3</sup> proposed Web Impact Factor (WIF) that combines the number of external inlinks and the number of webpages of website.

#### 4.3.2 Indicators in RWU

There are only four indicators used in this approach. Following table shows the indicators with corresponding weights:

**Table 6.** Indicators in Ranking Web of Universities

| Sl. No.      | Indicators | Weights     |
|--------------|------------|-------------|
| 1            | Size       | 30%         |
| 2            | Visibility | 50%         |
| 3            | Rich Files | 15%         |
| 4            | Scholar    | 15%         |
| <b>Total</b> |            | <b>100%</b> |

Table 6 reflects that highest weightage i.e. 50% is given to visibility, which is calculated through counting the number of inlinks and equal weightage is given to rich files and Google Scholar.

#### 4.3.3 Measuring Suitability of indicators in RWU

Following table 7 examines the suitability of indicators to find out some components, which may be suitable to design 'Webometric Ranking of Indian University (WRIU)' system, which was proposed in the PhD Thesis<sup>2</sup>.

**Table 7.** Suitability of indicators in RWU system

| <i>May not be suitable to apply</i>   | <i>Reasons</i>  |
|---|---|
| <ul style="list-style-type: none"> <li>No indicators are unsuitable</li> </ul>  | <ul style="list-style-type: none"> <li>All components are very much suitable in webometric ranking</li> </ul>   |
| <i>May be suitable to apply with modification</i>   | <i>Reasons</i>  |
| <ul style="list-style-type: none"> <li>Size</li> <li>Visibility</li> <li>Rich File</li> <li>Google Scholar</li> </ul> | <ul style="list-style-type: none"> <li>All four components are very much suitable because these are the fundamental pillars in webometric ranking parameter</li> <li>These are key well-known indicators for measuring the website performance</li> </ul> |
| <b>All four indicators (size, visibility, rich file and Google scholar) may be included as it is basis</b>            |   |

All the above four components have been accepted in new methodology i.e. WRIU with some modifications in the weights as explained later.

## 5. Analysis and Results

### 5.1 Country-wise Distribution of Top Ten Universities

Table 8 shows the distribution of top ten universities in Asia. It is found that China is having five universities (i.e. 50%) under the list of top Ten Asian Universities followed by Japan with two universities (20%). On the other hand, surprisingly, there were no universities from India.

**Table 8.** Distribution of top ten universities in Asia

| Sl. No.      | Country     | Name of Universities |
|--------------|-------------|----------------------|
| 1.           | China       | 5                    |
| 2.           | Japan       | 2                    |
| 3.           | Taiwan      | 1                    |
| 4.           | South Korea | 1                    |
| 5.           | Hong Kong   | 1                    |
| 6.           | India       | 0                    |
| <b>Total</b> |             | <b>10</b>            |

Source: www.webometrics.info

### 5.2 Webpages

The face of the institutes or organization is the website. The basic unit of a website is webpages. The information on all the activities like admission, academic programmes, curriculum, educational activities, faculty and students, facilities and infrastructure, campus, placement, advertisement, news and announcements, recruitments etc of universities are being reflected through its website.

**Table 9.** Comparison of webpages for Indian and Asian universities

| Description                | Webpages        | Percentage (%) |
|----------------------------|-----------------|----------------|
| Top 10 Asian Universities  | 2,66,59,000     | 91             |
| Top 10 Indian Universities | 26,66,400       | 9              |
| <b>Total</b>               | <b>29325400</b> | <b>100</b>     |

The data provided above reflects that there is a huge gap in terms of number of webpages of Asian and Indian universities.

### 5.3 Publications

Publications are indicators of research output of an organization. Based on the data collected from Web of Science (WOS) dated August 25, 2015 for the period of last five years [2010-2014], it has been found that there are 49721 articles published by top ten Indian universities,



whereas 3,31,303 articles published by top ten Asian universities for the period of last five years.

**Table 10.** Comparison of publications for Indian and Asian universities

| Description                | Publications Last five Years [2010-2014] | Percentage (%) |
|----------------------------|--|----------------|
| Top 10 Asian Universities  | 3,31,303                                 | 86.95          |
| Top 10 Indian Universities | 49,721                                   | 13.05          |
| <b>Total</b>               | <b>3,81,024</b>                          | <b>100</b>     |

It clearly implies from the above table that there is a 73% gap or difference in publications between Top Ten Indian Universities and Top 10 Asian Universities during the period of 2010-2014.

### 5.4 Google PageRank (PR) and Alexa Rank

PageRank is a link analysis algorithm, developed by Larry Page and Sergey Brin at Stanford University, used by Google search to rank the websites. PageRank was named after Larry Page. It works on the philosophy of counting the number and quality of links.

Alexa Rank is a numerical score for your website from alexa.com based on total visits and a number of other ranking parameters, including pageviews and frequency of visits from users with the Alexa toolbar installed.

The Page rank<sup>4</sup> and Alexa rank have been retrieved from <http://checkpagerank.net/index.php>. Dated August 30, 2015. The first rank ‘National Taiwan University’ in Asia has PageRank (8) and Alexa rank (8495) whereas first rank of Indian University ‘Indian Institute of Technology Bombay’ has PageRank (9) and Alexa rank (11475).

### 5.5 Rich File

The values of Rich files have been collected from [www.google.com](http://www.google.com) using the syntax i.e. `site:iitb.ac.in filetype:pdf`. Table 11 provides the total figure of rich files of top ten Asian and Indian universities respectively.

It shows that more than 84% of rich files are from Asia’s top ten universities whereas the same value for India is slightly more than 15%. It implies that there is a huge difference of rich files i.e. approximately 70%.

**Table 11.** Comparison of rich files for Indian and Asian universities

| Description                | Rich Files     | Percentage (%) |
|----------------------------|----------------|----------------|
| Top 10 Asian Universities  | 1793278        | 84.46          |
| Top 10 Indian Universities | 329911         | 15.54          |
| <b>Total</b>               | <b>2123189</b> | <b>100</b>     |

Figure 1 reflects that IIT Kharagpur (8,797) has the lowest value of rich file whereas IISc Bangalore has the highest rich file value (58,992) dated 19 Aug 2015.

### 5.6 Comparison of Google Scholar Value

Google provided pioneering steps in discovering scholarly information<sup>5</sup>. Although the coverage of Google is extremely good, the archival collection of reputed publishers is not being included till many years since its launches. As Google did not index beyond a particular size of file (say 1 M-byte), it would be difficult to display beyond Google’s limit<sup>6</sup>.

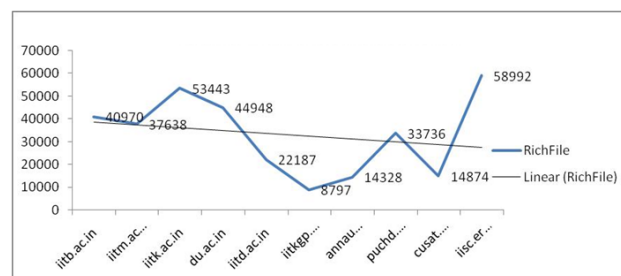
**Table 12.** Comparison of Google Scholar value between India and Asia

| Sl. No. | Top 10 Universities | Google Scholar | Percentage |
|---------|---------------------|----------------|------------|
| 1       | Asia                | 7327300        | 94.93      |
| 2       | India               | 391400         | 5.07       |
|         | <b>Total</b>        | <b>7718700</b> | <b>100</b> |

Table 12 shows the comparison of Google Scholar value between Asia and India. It has been found that for the case of Asia, Google Scholar’s value (73,27,300) was 90% more than Indian universities (3,91,400) on an average.

### 5.7 Global Rank and URL Rating of Universities of Asia and India (ahrefs.com<sup>7</sup>)

A website’s search engine ranking depends on many factors. Among them, the important one is quality backlinks. The more quality backlinks a page receives, the higher search engine ranking will be for that page. So, how to get quality backlinks? Quality backlinks implies getting more links from high page rank webpages. **URL Rating** measures the impact of all backlinks. The task of URL Rating is like Google Page Rank (PR). The following table shows that IIT Bombay got URL Rating (36), which is a bit higher than IIT Madras’s URL Rating (33).



**Figure 1.** Rich file for top ten Indian Universities.

The x-axis indicates domain names of top ten Indian universities and y-axis represents number of rich files, as clearly indicates in the label of the figure.

Table 13 (a) shows that IISc Bangalore has the lowest URL Rating (30) whereas Panjab University has highest URL Rating (47). In fact, it is found that there is more disparity in URL Rating among Indian universities as compared to Asian Universities.

Table 13 (b) shows that Kyoto University has the lowest URL Rating (31) whereas University of Hong Kong has highest URL Rating (44).

## 5.8 Referring Pages and Backlinks

This section mainly discusses the referring and backlinks. In order to understand the concept of various types of links, some important terminologies are given below with their values, for the case of IIT Kharagpur.

### 5.8.1 Referring Pages

There are 62,062 external web pages (18 August 2015) containing at least one backlink that links to iitkgp.ernet.in (or any sub domain).

### 5.8.2 Total Backlinks

There are 76,718 external backlinks found on the referring pages that link to iitkgp.ernet.in (or any sub-domain).

### 5.8.3 Crawled Pages

There are 95,374 unique pages (18 August 2015) visited by the Ahrefs crawler on iitkgp.ernet.in (or any sub-domain). These pages are stored in the index and are used to build all our reports.

### 5.8.4 Referring IPs

There are 2,763 unique IP addresses containing at least one backlink that links to iitkgp.ernet.in (or any subdomain). Note that there can be multiple domains in a single IP address.

### 5.8.5 Referring Subnets

There are 2,245 unique IP subnet address containing at least one backlink that links to iitkgp.ernet.in (or any subdomain). Note that there can be multiple IP addresses in a single subnet.

**Table 13.** (a) Comparison of URL Rating of Indian Universities

| Sl. No. | Domain        | Global Rank | URL Rating | DomainRating |
|---------|---------------|-------------|------------|--------------|
| 1       | iitb.ac.in    | 15564       | 36         | 64           |
| 2       | iitm.ac.in    | 22853       | 33         | 63           |
| 3       | iitk.ac.in    | 18879       | 38         | 64           |
| 4       | du.ac.in      | 33232       | 42         | 62           |
| 5       | iitd.ac.in    | 38666       | 33         | 61           |
| 6       | iitkgp.ac.in  | 68115       | 38         | 59           |
| 7       | annauniv.edu  | 45911       | 35         | 61           |
| 8       | puchd.ac.in   | 138186      | 47         | 57           |
| 9       | cusat.ac.in   | 194936      | 36         | 56           |
| 10      | iisc.ernet.in | 5578        | 30         | 68           |

**Table 13.** (b) Comparison of URL Rating of Asian Universities

| Sl. No. | Domain          | Global Rank | URL Rating | Domain Rating |
|---------|-----------------|-------------|------------|---------------|
| 1       | ntu.edu.tw      | 3720        | 33         | 69            |
| 2       | pku.edu.cn      | 3031        | 36         | 70            |
| 3       | tsinghua.edu.cn | 2340        | 35         | 70            |
| 4       | snu.ac.kr       | 10900       | 39         | 65            |
| 5       | u-tokyo.ac.jp   | 1689        | 34         | 71            |
| 6       | zju.edu.cn      | 5929        | 38         | 68            |
| 7       | hku.hk          | 4770        | 44         | 68            |
| 8       | sjtu.edu.cn     | 5835        | 35         | 68            |
| 9       | kyoto-u.ac.jp   | 2866        | 31         | 70            |
| 10      | xmu.edu.cn      | 10207       | 33         | 66            |

### 5.8.6 Referring Domains

There are 3,574 domains containing at least one backlink that links to iitkgp.ernet.in (or any subdomain).

- The above value has been retrieved from google.com on Aug 19, 2015 against each top ten universities, for Asia and India. site:iitkgp.ac.in file:pdf

### 5.9 Dofollow and Nofollow Type's Backlinks: Asia and India

Search Engines Optimization (SEO) follows various types of links terminology like onindex, doindex, nofollow, dofollow etc. Two important links are dofollow and nofollow<sup>8</sup>. **Dofollow**, usually, all the hyperlinks are dofollow. Examples of dofollow links for the case of IIT Kharagpur will be <a href="http://www.iitkgp.ac.in/">IIT Kharagpur</a>

**Nofollow** is an HTML attribute value used to instruct search engines bots that a hyperlink should not influence the link target's ranking in the search engine's index. It is intended to reduce the effectiveness of certain types of search engine spam, thereby improving the quality of search engine results and preventing spamdexing from occurring in the first place. This is a concept introduced by Matt Cutts and Jason Shellen in the year 2005.

Examples of nofollow links, for the case of IIT Kharagpur, will be like <a href="http://www.iitkgp.ac.in/" rel="nofollow">IIT Kharagpur</a>. Alternatively, by adding meta tag like <meta name="robots" content="nofollow" />, it is possible to make whole page as nofollow. Nofollow link attribute are used to stop passing link-juice.

The main difference between Nofollow and Dofollow links are like Nofollow links will stop the link juice from spreading to other pages. But dofollow link enforces Google spiders to follow the link and index the page.

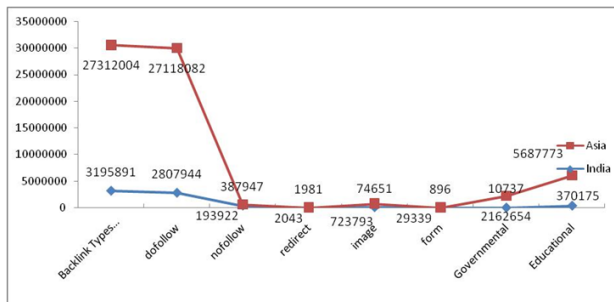


Figure 2. Dofollow and nofollow type's backlinks.

The x-axis indicates various types of backlinks for Asian and India and y-axis represents number of backlink types.

## 6. Observation and Findings

Some of the findings of the study are mentioned below:

- **Backlinks** of Indian Universities are only 2% as compared to values of Asian Universities;
- Indian Universities are having only 3% **Referring Pages** with respect to top ten Asian Universities.
- **Webpages:** There is 65% more webpages in Asian Universities than Indian Universities.
- It clearly implies from the above table that there is a 73% gap or difference in **publications** between Top Ten Indian Universities and Top 10 Asian Universities during the period of 2010-2014.
- The Table 13A shows that IISc Bangalore has the lowest URL Rating (30) whereas Panjab University has the highest URL Rating (47).
- In fact, it is found that there is more disparity in URL Rating among Indian universities as compared to Asian Universities.
- It shows that more than 84% of rich files are from

Table 14. Referring pages and backlinks for Asian and Indian universities

| Country           | India   | Asia      | Total     | Percentage |
|-------------------|---------|-----------|-----------|------------|
| Referring Pages   | 2364816 | 67176391  | 69541207  | 3.40       |
| Backlinks         | 3207653 | 154225840 | 157433493 | 2.04       |
| Crawled Pages     | 5658914 | 35550961  | 41209875  | 13.73      |
| Referring IPs     | 55303   | 240690    | 295993    | 18.68      |
| Referring Domains | 69590   | 276343    | 345933    | 20.12      |

Source: http://ahrefs.com



Asia's top ten universities whereas the same value for India is slightly more than 15%. It implies that there is a huge difference of rich files i.e. approximately 70%.

- Figure 1 reflects that IIT Kharagpur (8,797) has the lowest value of rich file whereas IISc Bangalore has the highest rich file value (58,992) dated 19 Aug 2015.

## 7. Conclusion

The webometric analysis of selected (twenty universities - 10 from Asia and 10 from India) provides a solid research foundation to choose some web indicators at the time of developing webometric ranking system for India. It is worthwhile to mention here that low ranking of Indian universities in the World are due to having poor values of some important web indicators including research publication. Therefore, it may be learned from this study to publish more and more research results/projects undertaken/ innovation research etc. to the website of the universities or institutes. Continuous updating of the website and delivering important information to the stakeholders through the website may enhance the rank of the university.

## 8. References

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