

Webometric Analysis of National Library Websites of SAARC Countries

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Abstract

This study explored the Web Presence and Visibility of National Library Websites of SAARC Countries. Based on WISER ranking method, National library websites of SAARC countries were ranked. National Library of India secured top position in terms of Web presence. National Library of Bangladesh outscored other libraries in Webometric ranking and occupied the top position. The websites of all National libraries considered for the study lack rich files and scholarly content. Afghanistan was excluded from the study since its National library website could not be ascertained. The study recommends that Web masters should publish more content in the form of rich files and make available more scholarly content so as to improve the Web presence and visibility.

Key Words:- National libraries, SAARC, Webometrics, Websites

Introduction

National Library of a country is the most important institution preserving and disseminating its culture and heritage. National Library is an apex library which acts as the major archive of print and digital resources produced within a country. It also has the responsibility of providing national leadership in the affairs of library and information services.

With advancements in Information and Communication Technology, access to Internet and World Wide Web has become easier and more affordable than before. With easy availability of mobile devices and low-cost access to Internet, more and more number of users have started preferring websites over physical libraries as a source of information. In such a situation, libraries have the onus of developing and maintaining

responsive and resourceful websites in order to reach out to the user community. Since users have the tendency of using search engines to discover websites, the visibility of library websites through search engines impacts its usage.

Webometrics is an area of study which measures one or more quantitative aspects of websites. The knowledge of webometric analysis helps web masters in identifying the presence and visibility of their as well as competitors' websites and take necessary measures to improve the position of their websites to gain competitive advantage.

The present study is an attempt to explore the Web presence and visibility of national library websites of SAARC Countries.

SAARC

The South Asian Association for Regional Cooperation (SAARC) was established on 8

December 1985. SAARC comprises of eight Member States: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. The Secretariat of the Association was set up in Kathmandu on 17 January 1987 (*SAARC Secretariat*).

Ranking Web of Universities

The Ranking Web of Universities or Webometrics Ranking of World Universities is an initiative of the Cyber metrics Lab, a research group belonging to the Consejo Superior de Investigaciones Científicas (CSIC), Spain. "The original aim of the Ranking was to promote Web publication. Supporting Open Access initiatives, electronic access to scientific publications and to other academic material are primary targets. However web indicators are very useful for ranking purposes too as they are not based on number of visits or page design but on the global performance and visibility of the universities."("Objectives"). The Ranking Web of Universities has prescribed composite Webometric ranking indicators. These indicators are grouped into activity/presence indicator, and visibility/impact groups of indicators.

Review of Literature

Webometrics is now a well-established area of research. This is evident from the growing number of webometric studies found in various sources of scholarly literature. A good number of studies have been carried out on one or more quantitative aspects of websites with variations in methodology. From a systematic literature search in various sources of scholarly literature, it was found that although considerable research has been carried out in the area of Webometrics, only a few webometric studies were found with respect to websites of National libraries. This indicates that there is scope of conducting Webometric studies on websites of National

libraries. The following section presents a review of select webometric studies, with particular focus on National library websites.

An examination of websites of Select Asian Countries using AltaVista, Google and Yahoo! Search Engines (Jalal et al.) and their ranking as per WISER method found that China, Japan and India had significant Web presence among Asian Countries in terms of number of internet users. Japan had the highest number of web pages followed by China and South Korea. The highest number of links, both incoming and outgoing, were in .com domain.

Vijayakumar et al. investigated the Web presence and link structure of SAARC countries using Web Impact Factor and WISER Ranking Methods. The study found that India was in the first position among SAARC countries as per the WISER Ranking Method, while Sri Lanka occupied top position in respect of Web Impact Factor for external links.

A similar study (Walia and Gupta) on websites of Select National Libraries revealed that Library of Congress had the highest number of in-links, while National Library of Namibia had the lowest. Library of Congress secured top position in Web Impact Factor. National Library of Australia had highest number of rich files.

A study on National Library websites of SAARC countries by Verma and Brahma revealed that the website of National Library of India had the highest impact factor followed by National Library of Sri Lanka and National Library of Bhutan. The study used Open Site Explorer Optimization Tool for collection of data on hyperlinks.

Objectives

The primary objective of present study is to explore the Web Presence and Visibility of

National Library websites of SAARC countries. The study also aims at ranking of National library websites of SAARC countries based on Webometric indicators.

Scope and Methods

The present study covers National library websites of SAARC countries. The URL of each National Library was identified through search engine queries. The website of National Library of Afghanistan could not be ascertained. Though several search results using the search phrase “National Library of Afghanistan” directed to the website of Kabul University Library, no authentic information on Kabul University Library website could be found to ascertain the status of National

Library. Hence, it has been excluded from the study.

For collection and analysis of data, and ranking of websites, WISER Ranking Method (“Methodology”) has been used with certain modifications. Following methods have been adopted.

- **Selection of Websites:** For the present study, National library websites of SAARC countries have been selected. The URL of each National Library Website was found out using search engine queries. The functionality of websites has been manually checked by entering the URL on the address bar of the web browser. All websites were found functional.

Table 1. National Library Websites of SAARC countries

Sl. No.	SAARC Country	Name of National Library	URL of National Library Website
1	Bangladesh	National Library of Bangladesh	nanl.gov.bd
2	Bhutan	National Library of Bhutan	library.gov.bt
3	India	National Library of India	nationallibrary.gov.in
4	Maldives	National Library of Maldives	nlm.gov.mv
5	Nepal	Nepal National Library	nnl.gov.np
6	Pakistan	National Library of Pakistan	nlp.gov.pk
7	Sri Lanka	National Library of Sri Lanka	natlib.lk

- **Collection of Webometric data:** The data required for Webometric analysis was collected using Google search engine queries. Webometric analysis involves gathering data from the Web and analysing using Webometric methods. Under the present study, the data for the following Webometric ranking indicators has been collected using Google search engine queries:
 - **Size:** Total Number of Web Pages of a website indexed by Google.
 - **Visibility:** The total number of unique external links received (inlinks) by a site as obtained from Google search.
 - **Rich files:** Rich files are complete and independent items in different formats, such as Adobe Acrobat (.pdf), Microsoft word (.doc and .docx), Microsoft PowerPoint (.ppt and .pptx), and Adobe Postscript (.ps and .eps). The number of each type of rich files is obtained by using Google search.
 - **Google Scholar:** Number of results on Google Scholar for the items hosted on a website.

Table 2. Google Search Strategies for collecting Webometric data

Data Required	Google Search Strategy
Size: Total Number of Web Pages of a website indexed by Google	<i>site:url</i> <i>site: natlib.lk</i> will retrieve the total number of web pages of the URL natlib.lk indexed by Google.
Visibility: Total Number of External In-links (excluding the self-inlinks)	<i>linkdomain:url –site:url</i> <i>linkdomain:natlib.lk –site:natlib.lk</i> will retrieve the total number of ‘external’ inlinks to natlib.lk indexed by Google
Rich Files: Number of rich files on a website indexed by Google	<i>Site:url filetype:rich file format</i> <i>site:natlib.lk filetype:pdf</i> will retrieve the number of pdf file on the URL natlib.lk indexed by Google. Similarly, data can be collected on other rich file formats: doc, docx, ppt, pptx, ps, eps.
Google Scholar: Number of items of a website indexed by Google Scholar	<i>site:url</i> on Google Scholar site <i>site:natlib.lk</i> on Google Scholar site will retrieve the number of items on the URL natlib.lk indexed by Google Scholar.

Of the above indicators, Size, Rich Files and Google Scholar constitute the Activity/Presence indicators. Visibility is the Impact Indicator. These variables are log-normalized before combining according to a ratio 1:1 between activity/presence and visibility/impact groups of indicators. This means that after log-normalizing the values, weights are assigned for each indicator as follows: Visibility $\frac{1}{2}$ or 50%; Size, Rich Files, and Google Scholar $\frac{1}{6}$ or 16.67% each.

Log-normalization, assignment of weights & Webometric Ranking

The data obtained from Google search engine was log-normalized using Log-10 method and weighted in the proportion 1:1 between Visibility/Impact Indicator and Activity/Presence group of indicators. The sum of weighted values of the four indicators is the Webometric Index Value. Websites were ranked on the basis of Webometric Index Value in the descending order.

Results and Discussion

Table 3. Webometric data of National libraries of SAARC countries

URL of National Library Website	Size	Visibility	Rich Files	Scholar
nanl.gov.bd	2770	271000000	0	0
library.gov.bt	232	2910	23	0
nationallibrary.gov.in	104000	6490	59	0
nlm.gov.my	148	213	52	1
nnl.gov.np	72	21	57	1
nlp.gov.pk	198	1530	129	0
natlib.lk	3970	0	96	0

Table 3 presents the basic Webometric data of websites of National Libraries of SAARC countries. National Library of India has the highest number of web pages (104000) indexed by Google. Other websites have very meagre number of web pages indexed by Google as compared to National Library of India. In terms of rich files, National Library of Pakistan secures top position. National Library of Maldives and National Library of Nepal each have only one item on Google

Scholar. National Library of Bangladesh, Bhutan, India, Pakistan and Sri Lanka do not have any item on Google Scholar. This indicates lack of scholarly content on National library websites of SAARC countries.

For Webometric ranking, this data is log-normalized and weighted. The log-normalized, weighted data and Webometric ranks have been listed in Table 4.

Table 4. Log-normalized, Weighted Webometric data and Webometric ranks

Website URL	LNS	LNV	LNR	LNSc	WSV	WVW	WRV	WScV	Webometric Index Value	Webometric Rank
nanl.gov.bd	3.44	8.43	0.00	0.00	0.57	4.22	0.00	0.00	4.79	1
nationallibrary.gov.in	5.02	3.81	1.77	0.00	0.84	1.91	0.30	0.00	3.04	2
library.gov.bt	2.37	3.46	1.36	0.00	0.39	1.73	0.23	0.00	2.35	3
nlp.gov.pk	2.30	3.18	2.11	0.00	0.38	1.59	0.35	0.00	2.33	4
nnl.gov.np	1.86	1.32	1.76	0.00	0.31	0.66	0.29	0.00	1.26	5
nlm.gov.mv	2.17	2.33	1.72	0.00	0.36	1.16	0.29	0.00	1.00	6
natlib.lk	3.60	0.00	1.98	0.00	0.60	0.00	0.33	0.00	0.93	7

LNS: Log-normalized Size value LNV: Log-normalized Visibility value LNR: Log-normalized Rich files value LNSc: Log-normalized Scholar value WSV: Weighted Size Value WVW: Weighted Visibility Value WRV: Weighted Rich files Value WScV: Weighted Scholar Value

Table 4 shows the Webometric ranks of National Library Websites. The data on the four Webometric ranking indicators obtained from Google search engine queries has been log-normalized using log-10 method. Specific weights have been assigned to each indicator as described in the earlier section. The sum of weighted values of the four Webometric ranking indicators gives the Webometric index value. The websites have been ranked in the descending order of webometric index value. National Library of Bangladesh stands first in Webometric ranking, while National Library of Sri Lanka is placed last. None of the National Library

websites performs well in terms of *Scholar* value.

Conclusion

The study has made an attempt to explore the web presence and visibility of National Library Websites of SAARC countries. The websites have been ranked based on webometric ranking indicators. The study has found that National Libraries of SAARC countries have poor web presence. They also lack scholarly content. Web masters of National Libraries should take necessary measures to enhance the Rich file and scholarly content in order to improve the web

presence and visibility of these websites. This calls for uploading and publishing information on the websites in various rich

file formats. Further, more scholarly content should be made available on National library websites, so as to improve their visibility.

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