

## A webometric analysis of National Libraries' websites in South Asia

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The study analyses the number of web pages, link pages and calculates the Web Impact Factor i.e., Simple Web Impact Factor, Internal Link Web Impact Factor and External Link Web Impact Factor of National Libraries in South Asian countries and ranks the websites as per the WIF. The study used Open Site Explorer optimization tool and search engine for links. The result visualized that National Library of India leads with highest Domain Authority (15.27%) and Page Authority (14.48%), the National Library of Sri Lanka (88.65%) got the highest Internal Equity-Passing Links, National Library of India (84.96%) has the highest External Equity-Passing Links and Total Equity-Passing Links with 83.69%. The National Library of Sri Lanka has the highest (88.65%) Total Internal Links and National Library, India has the highest Total External Links (84.04%) and Total Links (82.80%). The Web Impact Factor of National Library of India is the highest followed by National Library of Sri Lanka and National Library of Bhutan among the other national libraries websites.

**Keywords:** National libraries; Webometrics; Web impact factor; World Wide Web; Link analysis; South Asia

### Introduction

Rapid advances in information technologies have changed the role of libraries as well as information professionals. As a result, libraries have to deal with new challenges, competitors, expectations and demands. Libraries are redesigning services and information products to add value to their services and to satisfy the changing information needs of the user community. Traditional libraries are still dealing with largely printed materials which are bulky and expensive. At present, information seekers are no longer satisfied with only printed materials. They want to supplement the printed information with more dynamic electronic resources. The demands for digital information are increasing day by day. Libraries shifted their role from being custodians of the collection-based traditional information resources to being providers of access-based digital information resources. Libraries have to disseminate and facilitate access to the variety of information to their users' through their websites.

National libraries around the world maintain their websites which are used to offer a wide range of information services consistent with their wide range of activities, as compared to other types of libraries.

A National Library is a library specifically established by the government of a country to serve as the preeminent repository of information for that country. Unlike public libraries, these rarely allow citizens to borrow books. Often, they include numerous rare, valuable, or significant works.

A National Library has the duty of collecting and preserving the literature of the nation emanating from both within and outside the country. The functions and purpose of National Library differ from country to country as they are "subject to political agendas which change, often more rapidly than for public or academic libraries<sup>1</sup>." One of the unique privileges of the National Library of a country is to receive by law all print and non-print materials produced by the country.

The term webometrics was first coined by Almind and Ingwersen<sup>2</sup>. The term webometrics is a coinage from two modern English words, "web" and "metric". The web is a short name of WWW. On the other hand, metrics has to do with counting or measurement. A website is a collection of images, related web pages, videos or other digital assets which are addressed relative to a common Uniform Resource Locator (URL). It consists of IP address or domain

name and the root path ('/') in an Internet Protocol-based network. According to Bjerneborn and Ingwersen<sup>3</sup>, the definition of webometrics is "the study of quantitative aspects of the construction and use of information resources, structures and technologies on the web, drawing on bibliometric and informetric approaches."

This definition covers the construction side and usage side of the web which embraces four main areas of webometrics study:

- a) Web page content analysis
- b) Web link structure analysis (e.g. Hyperlink, Self link and External link)
- c) Web usage analysis (e.g. exploiting log files for users searching and browsing behavior), and
- d) Web technology analysis (including search engine performance)

According to Thelwall<sup>4</sup>, Webometrics is the study of web-based content with primarily quantitative methods for social science research goals using techniques that are not specific to one field of study, which emphasizes the development of applied methods for use in the wider social sciences. Webometrics covers research of all network based communication using informetric or other quantitative measures.

### Web Impact Factor

The WIF provides quantitative tools for ranking, evaluating, categorizing, and comparing web sites, top-level domains and sub-domains. WIFs are the part of the methodology of Webometrics. The WIF is a form of measurement used to determine the relative standing of websites in particular fields, or a country; for instance, academic websites in a country. The higher the impact factor, the higher the perceived reputation of the web site. A WIF is a measure of the frequency with which the "average web page" in a web site has been linked at a given point in time. In general, a website with a higher impact factor may be considered to be more prestigious or of a higher quality than those web sites with a lower impact factor. Thus, the greater the number of link pages to a website, the greater the WIF will be.

The three types of links are-

1. The Simple WIF, the ratio of all links to the number of pages.

2. The Internal WIF, the ratio of internal links within the site to a number of pages.
3. The External WIF, the ratio of links made from external sites to the target site to a number of pages at the site.

### National Libraries in South Asian Countries

This study makes a webometric analysis of National Libraries websites in South Asian Countries. The South Asian Association for Regional Cooperation (SAARC) is the regional intergovernmental organization and geopolitical union of nations in South Asia. Its member states include Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. The idea of regional cooperation in South Asia was first raised in November 1980. The purpose of SAARC seeks to promote the welfare of the peoples of South Asia, strengthen collective self-reliance, promote active collaboration and mutual assistance in various fields, and cooperate with international and regional organizations.

This study examined the websites of 8 National Libraries of South Asian Countries. The study aimed at to build a kind of ranking of National Libraries websites by measuring their WIF. The study of the ranking will help the reader to identify and compare the National Libraries websites in South Asia by their WIF. The list of National Libraries of South Asian Countries along with the websites is given in Table-1.

### Review of literature

Babu, Jeyshankar and Rao<sup>5</sup> examined 40 central universities websites in India. They investigated website domains, webpages and link pages and calculated the simple web impact factor, self-link web impact factor, external link web impact factor and revised web impact factor for Central universities in India and ranks the websites as per the WIF. Haneefa and Venugopal<sup>1</sup> examined the contents of 28 National Library websites in Asia. Their analysis found that the National Library websites of Asian countries have a common pattern of content and design. Also, only 6 National Library websites have deployed one or more web 2.0 technologies.

Islam and Alam<sup>6</sup> have carried out a webometric study of private universities in Bangladesh. They examined 44 private university websites in

Table 1—National Libraries in South Asian Countries

Sl. no.	National Library	Websites	Year of establishment	Location/ Country
1	National Library of Afghanistan - Kabul University	www.ku.edu.af	1932	Kabul, Afghanistan
2	National Library of Bangladesh	www.nlb.gov.bd	1972	Dhaka, Bangladesh
3	National Library of Bhutan	www.library.gov.bt	1967	Thimphu, Bhutan
4	National Library of India	www.nationallibrary.gov.in	1953	Alipore, India
5	National Library of Maldives - QaameeKuthubukhaana	www.nlm.gov.mv	1945	Galolhu Male, Maldives
6	Nepal National Library	www.nnl.gov.np	1957	Patan, Nepal
7	National Library of Pakistan	www.nlp.gov.pk	1951	Islamabad, Pakistan
8	National Library of Sri Lanka	www.natlib.lk	1970	Colombo, Sri Lanka

Source: [https://en.wikipedia.org/wiki/List\\_of\\_national\\_and\\_state\\_libraries](https://en.wikipedia.org/wiki/List_of_national_and_state_libraries)

Bangladesh and identified the number of link pages, web pages and calculated the Absolute Web Impact Factor (WIF) and Overall Web Impact Factor (WIF). They found that some private universities in Bangladesh have the higher number of web pages but their link pages are very small in number.

Jalal, Biswas and Mukhopadhyay<sup>7</sup> conducted a webometric study on Web Presence of Selected Asian Countries. The paper concentrated on the Web presence and visibility of websites of Asian countries. They found that China, Japan and India occupy highest web presence amongst Asian countries based on the total number of effective Internet users. Khan and Shehzad<sup>8</sup> examined the National Library websites of Bangladesh, India, Iran, Pakistan and Sri Lanka. In the study, thirty-five web analysis parameters factors were used for the evaluation of websites. Also, different parameters factors were designed to assess the websites of the National Libraries of Bangladesh, India, Pakistan, Singapore and Sri Lanka. They found that the website of National Library Board of Singapore ranked 1<sup>st</sup> and National Archives and National Library of Bangladesh ranked last.

Madhusudhan and Prakash<sup>9</sup> carried out a webometric study on websites of Indian Institute of Technology (IIT). The study explored different characteristics of linking analysis of sixteen IIT websites. IIT Bombay and IIT Madras secured 1st position and 2nd position respectively in WIF (in-link) as well as in world rank; whereas, WIF (in-link) position of IIT Rajasthan shows one position better rank than the world ranking i.e. 15th position.

Thanuskodi<sup>10</sup> conducted a webometric study of the library websites of selected institutes of national importance in India. The study found that general

information about homepage features are more in IITs and least in ISICAL and IISc. Walia and Gupta<sup>11</sup> have analyzed the usability of homepage of websites of National Libraries in Asia with regard to their general features of the website, URL, window title, date and time, navigation, content, search and graphic and animation. Their findings revealed that the National Library of Japan ranked first among 23 National Libraries of Asia. Zeinolabedini, Maktabifard and Osareh<sup>12</sup> conducted a study on collaboration analysis of 38 world National Library websites via webometric methods and found that United States of America, Australia and United Kingdom were the popular and most visible National Library websites.

The above review of literature shows that number of webometric studies have been carried out to measure the websites of many institutes including National Libraries, but no detailed study have been conducted to evaluate the National Libraries' websites of South Asian countries. Therefore, this study is an attempt to fulfill the gap of research by studying the of National Libraries' websites in South Asian Countries.

### Objectives of the study

- To analyse the domains of National Libraries websites of South Asia;
- To calculate the number of web pages of National Libraries websites of South Asia;
- To examine the link-equity in websites of National Libraries under study;
- To find out internal and external link pages of websites of National Libraries under study; and

- To calculate the web impact factor of simple link, internal link and external link pages of National Libraries websites in South Asia.

**Methodology**

For the present study, data were collected from the websites of National Libraries in South Asian Countries using a checklist methods. The data were collected during 1<sup>st</sup> to 15<sup>th</sup> November 2016. The checklist included general information, domain, web pages, websites, and links. The study identified websites of 8 National Libraries in South Asian countries. This study used open site explorer ([www.opensiteexplorer.org](http://www.opensiteexplorer.org)) and website optimization for collecting raw data. The present study is confined to study websites of National Libraries in South Asian Countries viz., National Library of Afghanistan - Kabul University; National Library of Bangladesh; National Library of Bhutan; National Library of India; National Library of Maldives – Qaumeer Kuthubukhaana; Nepal National Library; National Library of Pakistan; National Library of Sri Lanka. The links of National Libraries website are listed in Table 1.

**Method of calculating Web Impact Factor**

Distribution of Data by SWIF has been calculated by the following formula:

$$SWIF = \frac{\text{Total No. of Links}}{\text{Total No. of Web pages}}$$

Distribution of Data by IWIF has been calculated by the following formula:

$$IWIF = \frac{\text{Total No. of Internal Links}}{\text{Total No. of Web pages}}$$

Distribution of Data by EWIF has been calculated by the following formula:

$$EWIF = \frac{\text{Total No. of External Links}}{\text{Total No. of Web pages}}$$

**Analysis**

There are 8 National Libraries in as many countries of South Asia. Table 2 shows the domain and page authorities of National Libraries websites. Domain authority measures the predictive ranking of entire domains or sub-domains. It is a measure of the power of a domain name and is one of many search engine ranking factors. It is a quality score developed by Moz (tool for measuring, monitoring and evaluating the onsite and off-site aspects of a website’s level of search engine optimization) that predicts how well a website will rank on search engines. Page authority is a quality score developed by Moz that predicts how well a specific page will rank on search engines. A high page authority score means the page has the potential to rank well in search engine results. It is found that the domain authority of National Library of India is in the highest position with 42(15.27%) among the websites, followed by Afghanistan with 41(14.90%) and Pakistan with 39(14.18%). The page authority of National Library of India is the highest with 52(14.48%), the second highest goes to National Library of Afghanistan with 50 (13.92%), followed by Nepal and Pakistan with 49(13.64%).

Table 3 illustrates the Just-Discovered and Established Links of National Library websites. The Just-Discovered links report helps anyone to identify recently created URLs and links. These are typically indexed within few hours to a day of being published that shows the newest links. The Established links are

Table 2—Domain authority and page authority

Sl. no.	Library	Domain Authority	Page Authority
1	National Library of Afghanistan - Kabul University	41 (14.90%)	50 (13.92%)
2	National Library of Bangladesh	13(4.72%)	27 (7.52%)
3	National Library of Bhutan	35 (12.72%)	46 (12.81%)
4	National Library of India	42 (15.27%)	52 (14.48%)
5	National Library of Maldives – Qaumeer Kuthubukhaana	30 (10.90%)	40 (11.14%)
6	Nepal National Library	38 (13.81%)	49 (13.64%)
7	National Library of Pakistan	39 (14.18%)	49 (13.64%)
8	National Library of Sri Lanka	37 (13.45%)	46 (12.81%)
	Total	275	359

(Source: Data were collected and analyzed from respective National Library websites through online tool- [www.opensiteexplorer.org](http://www.opensiteexplorer.org) )

Table 3—Just-Discovered and Established Links

Sl. no.	Library	Just-Discovered (in 60 days)	Established Links (Root domains out of Total links)
1	National Library of Afghanistan - Kabul University	0	45(125)
2	National Library of Bangladesh	0	1(143)
3	National Library of Bhutan	2	80(397)
4	National Library of India	7	105(7926)
5	National Library of Maldives – Qaume Kuthubukhaana	0	18(67)
6	Nepal National Library	1	61(168)
7	National Library of Pakistan	1	102(280)
8	National Library of Sri Lanka	1	91(466)

(Source: Data were collected and analyzed from respective national library websites through online tool- [www.opensiteexplorer.org](http://www.opensiteexplorer.org) )

Table 4—Internal Equity-Passing Links, External Equity-Passing Links and Total Equity-Passing Links

Sl. no.	Library	Int. Equity-Passing Links	Ext. Equity- Passing Links	Total Equity- Passing Links
1	National Library of Afghanistan - Kabul University	0	87 (0.93%)	87 (0.92%)
2	National Library of Bangladesh	0	143 (1.53%)	143 (1.51%)
3	National Library of Bhutan	7 (4.96%)	383 (4.11%)	390 (4.12%)
4	National Library of India	0	7912 (84.96%)	7912 (83.69%)
5	National Library of Maldives - Qaumeekuthubukhaana	6 (4.25%)	46 (0.49%)	52 (0.55%)
6	Nepal National Library	0	163 (1.75%)	163 (1.72%)
7	National Library of Pakistan	3 (2.12%)	256 (2.74%)	259 (2.73%)
8	National Library of Sri Lanka	125 (88.65%)	322 (3.45%)	447 (4.72%)
	Total	141	9312	9453

(Source: Data were collected and analyzed from respective national library websites through online tool- [www.opensiteexplorer.org](http://www.opensiteexplorer.org) )

the number of links created with domain authority, page authority and just discovered links. And the result visualized that the Just-Discovered Links of National Library of India is 7, followed by Bhutan with 2. The Established Links of National Library of India with 105 is the highest, followed by Pakistan with 102 and Sri Lanka with 91.

Table 4 illustrates the ranking of National Library websites on the basis of Internal Equity-Passing Links, External Equity-Passing Links and Total Equity-Passing Links. The Equity-Passing Links are the Links which pass value from one page to another (From Page A to Page B). Internal Equity-passing links are the links pointing to pages inside your website. External Equity- Passing Links are the links pointing from another domain to a page on your website.

Total Equity-Passing Links are the total amount of equity-passing links. It found that the Internal Equity-Passing Links of Sri Lanka with 125(88.65%) occupies the first place followed by Bhutan with

7 (4.96%) and Maldives with 6(4.25%). The External Equity-Passing Links of National Library of India ranked first with 7912(84.96%) followed by Bhutan with 383(4.11%) and Sri Lanka with 322(3.45%). The Total Equity-Passing Links of National Library of India occupies the first position with 7912(83.69%) followed by Sri Lanka with 447(4.72%) and Bhutan with 390(4.12%).

Table 5 illustrates the ranking of National Library websites on the basis of Total Internal Links, Total External Links and Total Links. The Internal links are the hyperlinks on a webpage to another web page resource such as an image or document, on the same website or domain. The External links are hyperlinks that point at any domain other than the domain the link exists on (source). The Total links are the total amount of links to a site. This would be all types of links etc.

The Total Internal Links of National Library of Sri Lanka is 125 (88.65%) and it occupies the first place followed by Bhutan with 7(4.96%) and Maldives with

6(4.25%). The Total External Links of National Library of India with 7926(84.04%) ranks first followed by Bhutan with 390(4.13%) and Sri Lanka with 341(3.61%). The Total Links of India again with 7926(82.80%) occupies the first place followed by Sri Lanka with 466(4.86%) and Bhutan with 397(4.14%).

Table 6 shows the Followed Linking Root Domains, Total Linking Root Domains and Linking C Blocks of National Libraries websites of South Asian Countries. Linking Root Domains are the number of unique domains linking to your domain or page. Multiple backlinks (inbound links) from a single domain will be grouped and counted as one linking root domain. Followed Linking Root Domains is a website that links to you. Total Linking Root Domains are the number of web pages that links to you that include the followed linking root domains. Linking C Blocks refers to the part of the IP address that's different. It is a hint to Google that the sites are all related to each other and on the same server.

The Followed Linking Root Domains of National Library of India with 97(21.08%) is the highest,

followed by Pakistan with 94(20.43%) and Sri Lanka with 79(17.17%). The Total Linking Root Domains of National Library of India once again with 20.87% occupies first place followed by Pakistan with 20.27% and Sri Lanka with 18.09%. The Linking C Blocks of National Library of India with 23.02% has the highest, followed by Pakistan with 19.40% and Sri Lanka with 17.43%.

Table 7.1 shows the Individualized Domains of National Library of Afghanistan, Kabul University in South Asia. The Domain Authority of **un.org/** with 99 and Linking Root Domains with 113,741 is the highest. Table 7.2 illustrates the Individualized Domains of National Library of Bangladesh in which **nanl.gov.bd/** has the Domain Authority of 36 and Linking Root Domains of 84. Table 7.3 shows the Individualized Domains of National Library of Bhutan. The result depicts that the Domain Authority of **dmoz.org/** with 94 and Linking Root Domains with 42,728 is the highest.

Table 7.4 illustrates the Individualized Domains of National Library of India. The result visualized that

Table 5—Total Internal Links, Total External Links and Total Links

Sl. no.	Library	Total Internal Links	Total External Links	Total Links
1	National Library of Afghanistan - Kabul University	0	125 (1.32 %)	125 (1.30%)
2	National Library of Bangladesh	0	143 (1.51%)	143 (1.49%)
3	National Library of Bhutan	7 (4.96%)	390 (4.13%)	397 (4.14%)
4	National Library of India	0	7926 (84.04%)	7926 (82.80%)
5	National Library of Maldives - Qaumees Kuthubukhaana	6 (4.25%)	61 (0.64%)	67 (0.70%)
6	Nepal National Library	0	168 (1.78%)	168 (1.75%)
7	National Library of Pakistan	3 (2.12%)	277 (2.93%)	280 (2.92%)
8	National Library of Sri Lanka	125 (88.65%)	341 (3.61%)	466 (4.86%)
	Total	141	9431	9572

(Source: Data were collected and analyzed from respective national library websites through online tool- [www.opensiteexplorer.org](http://www.opensiteexplorer.org) )

Table 6—Followed Linking Root Domains, Total Linking Root Domains and Linking C Blocks

Sl. no.	Name of the National Library	Followed Linking Root Domains	Total Linking Root Domains	Linking C Blocks
1	National Library of Afghanistan - Kabul University	40 (8.69%)	45 (8.94%)	33 (10.85%)
2	National Library of Bangladesh	1 (0.21%)	1 (0.19%)	1 (0.32%)
3	National Library of Bhutan	76 (16.52%)	80 (15.90%)	42 (13.81%)
4	National Library of India	97 (21.08%)	105 (20.87%)	70 (23.02%)
5	National Library of Maldives – Qaumees Kuthubukhaana	15 (3.26%)	18 (3.57%)	13 (4.27%)
6	Nepal National Library	58 (12.60%)	61 (12.12%)	33 (10.85%)
7	National Library of Pakistan	94 (20.43%)	102 (20.27%)	59 (19.40%)
8	National Library of Sri Lanka	79 (17.17%)	91 (18.09%)	53 (17.43)
	Total	460	503	304

(Source: Data were collected and analyzed from respective national library websites through online tool- [www.opensiteexplorer.org](http://www.opensiteexplorer.org) )

Table 7.1—Individualized Domains of National Library of Afghanistan, Kabul University

Sl. no.	Linking Root Domain Names	Domain Authority	Linking Root Domains
1	un.org/	99	113,741
2	ox.ac.uk/	93	59,776
3	wes.org/	78	2,435
4	affrc.go.jp/	75	6,404
5	blogfa.com	75	21,023

Table 7.2—Individualized Domains of National Library of Bangladesh

Sl. no.	Linking Root Domain Name	Domain Authority	Linking Root Domains
1	nanl.gov.bd/	36	84

Table 7.3—Individualized Domains of National Library of Bhutan

Sl. no.	Linking Root Domain Name	Domain Authority	Linking Root Domains
1	dmoz.org/	94	42,728
2	lonelyplanet.com/	90	38,679
3	mentalfloss.com/	85	19,117
4	hawaii.edu/	84	32,685
5	ndl.go.jp/	83	8,860

Table 7.4—Individualized Domains of National Library of India

Sl. no.	Linking Root Domain Name	Domain Authority	Linking Root Domains
1	weebly.com/	95	532,149
2	dmoz.org/	94	42,728
3	columbia.edu/	94	73,322
4	adwee.com/	93	44,258
5	fc2.com/	89	229,809

Table 7.5—Individualized Domains of National Library of Maldives, QaameeKuthubukhaana

Sl. no	Linking Root Domain Name	Domain Authority	Linking Root Domains
1	ndl.go.jp/	83	8,860
2	interq.or.jp/	71	13,143
3	nationsonline.org/	65	2,370
4	clio-online.de/	58	789
5	mhrys.gov.mv/	43	1,393

the Domain Authority of **weebly.com/** with 95 and Linking Root Domains with 532,149 is the highest. Table 7.5 illustrates the Individualized Domains of

Table 7.6—Individualized Domains of Nepal National Library

Sl. no.	Linking Root Domain Name	Domain Authority	Linking Root Domains
1	dmoz.org/	94	42,728
2	hawaii.edu/	84	32,685
3	ndl.go.jp/	83	8,860
4	worldatlas.com/	77	6,230
5	conservation-us.org/	73	2,075

Table 7.7—Individualized Domains of National Library of Pakistan

Sl. no.	Linking Root Domain Name	Domain Authority	Linking Root Domains
1	loc.gov/	97	93,794
2	dmoz.org/	94	42,728
3	u.tokyo.ac.jp/	85	24,472
4	freeservers.com/	85	17,247
5	hawaii.edu/	84	32,685

Table 7.8—Individualized Domains of National Library of Sri Lanka

Sl. no.	Linking Root Domain Name	Domain Authority	Linking Root Domains
1	unesco.org/	96	74,573
2	163.com/	95	127,070
3	hawaii.edu/	84	32,685
4	ndl.go.jp/	83	8,860
5	ifla.org/	83	5,184

National Library of Maldives, Qaamee Kuthubukhaana. The result shows that the Domain Authority of **ndl.go.jp/** with 83 and the Linking Root Domains of **interq.or.jp/** with 13,143 has the highest. Table 7.6 depicts the Individualized Domains of Nepal National Library. The result found that the Domain Authority of **dmoz.org/** with 94 and Linking Root Domains with 42,728 is the highest. Table 7.7 depicts the Individualized Domains of National Library of Pakistan. The result shows that the Domain Authority of **loc.gov/** with 97 and Linking Root Domains with 93,794 is the highest. Table 7.8 shows the Individualized Domains of National Library of Sri Lanka. The result found that the Domain Authority of **unesco.org/** with 96 and Linking Root Domains of **163.com/** with 127,070 has the highest.

Table 8 gives the Web Impact Factor of National Libraries websites of South Asian Countries which includes the Simple Web Impact Factor (SWIF), Internal Web Impact Factor (IWIF) and External Web Impact Factor (EWIF). National Library of India

Table 8—Web Impact Factor

Sl. no.	Name of the National Library	SWIF	IWIF	EWIF
1	National Library of Afghanistan - Kabul University	2.5	0	2.5
2	National Library of Bangladesh	5.29	0	5.29
3	National Library of Bhutan	8.63	0.15	8.47
4	National Library of India	152.42	0	152.42
5	National Library of Maldives – Qaumeer Kuthubukhaana	1.67	0.15	1.52
6	Nepal National Library	3.42	0	3.42
7	National Library of Pakistan	5.71	0.06	5.65
8	National Library of Sri Lanka	10.13	2.71	7.41

occupies the first place with 152.42 SWIF, followed by Sri Lanka which occupied the second place with 10.13 SWIF and the third place goes to Bhutan with 8.63 SWIF. On the basis of Internal Web Impact Factor (IWIF), the National Library of Sri Lanka occupies first place with 2.71 IWIF, followed by National Library of Bhutan and National Library of Maldives with 0.15 IWIF. On the basis of External Web Impact Factor (EWIF), the National Library of India occupies the first place with 152.42 EWIF, followed by Bhutan which occupied the second place with 8.47 EWIF and the third place goes to Sri Lanka with 7.41 EWIF.

### Major Findings

1. National Library of India leads with the highest Domain (15.27%) and Page Authority (14.48%), whereas, National Library of Afghanistan scored second highest Domain (14.90%) and Page Authority (13.92%).
2. The National Library of Sri Lanka leads with the highest Internal Equity-Passing Links (88.65%) and Total Internal Links (88.65%), while National Library of Bhutan got second highest Internal Equity-Passing Links (4.96%) and External Equity-Passing Links (4.11%).
3. The National Library of India again leads with the highest External Equity-Passing Links (84.96%), Total Equity-Passing Links (83.69%), Total External Links (84.04%) and Total Links (82.80%).
4. The second highest Total Internal Links (4.96%) and Total External Links (4.13%) goes to Bhutan, while the second highest Total Equity-Passing Links (4.72%) and Total Links (4.86%) was occupied by Sri Lanka.

5. On the basis of Simple Web Impact Factor (SWIF), the National Library of India occupies the first place with 152.42 SWIF, followed by Sri Lanka with 10.13 SWIF and Bhutan with 8.63 SWIF. In the ranking, on the basis of Internal Web Impact Factor (IWIF), the National Library of Sri Lanka occupies first place with 2.71 IWIF, followed by National Library of Bhutan and National Library of Maldives with 0.15 IWIF. On the basis of External Web Impact Factor (EWIF), the National Library of India occupies the first place with 152.42 EWIF, followed by Bhutan with 8.47 EWIF and Sri Lanka with 7.41 EWIF.

### Conclusion

The study attempted to rank national library websites by measuring their WIF. Expectedly, the Web Impact Factor of National Library of India is the highest. It is followed by National Library of Sri Lanka and National Library of Bhutan among the other National Libraries websites. Clearly, users visit the websites of the National Libraries for their information needs.

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