

# Webometric Analysis of Selected Library Consortium Websites of India: An Evaluative Study

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## Abstract

*Nowadays, due to increase in the cost of the information resources, it is quite difficult for the libraries to procure all the information sources are required by the users. When the Library Consortium, for the dissemination of electronic resources got initiated, many institutional problems got solved by financial assistance to the university libraries. Many consortia in India are running well and many library consortium members are benefited too. The present study is an attempt to examine the websites of 9 Selected Library Consortia in India by analyzing the total number of webpages, domain authority, equity-links, internal & external links and based on that to calculate the web impact factor and to rank it. The study observed that Consortium like e-ShodhSindhu and DeLCon are the most popular among the 9 selected consortia of India.*

**Keywords:** Indian Library Consortiums, Link Analysis, Web Impact Factor, Webometrics, Websites

## 1. Introduction

Today websites have formed an essential part of communication and are used as an apparatus by individuals, organizations etc., not only to promote their capabilities but also to provide services to their clients. The web is a collection of webpages connected to each other using hyperlinks. The globalization has made a remarkable impact on the library consortium system and Internet is the constant source of energy for the organization to make its facilities and opportunities available globally. In order to achieve the goal, there is a need to have a website of each Indian consortium in order to perform well and stay in the competition. The primary goal of the consortium's website is to provide common access to electronic resources across the Internet and by forming a consortium

among libraries, it becomes possible to purchase information in stabilized and reasonable prices. Library consortia or consortium is now being overheard globally because of electronic or digital form of information. Consortia are all about sharing resources and improving access to information. These resources are shared among libraries that have common missions, goals and clients and act on those commonalities. When library consortia are formed, the existing environment about user's preferences and difficulties need to be studied. This study aims to investigate the Web Impact Factor (WIF), and the method applied in this type of research is the process of link analysis, which is a Webometric method. In this process, the number of pages, number of internal link pages, external link pages and various Web Impact Factors of Selected Library Consortium websites of India are taken under study.



### 1.1 Concept of Webometrics

In the World Wide Web (WWW), the web pages are the entities of information, with hyperlinks from them acting as citations. It is an information space, highly complex melded of all types of information carriers produced by all kinds of users. Bjorneborne and Ingwersen (2004) define webometrics as “the study of the quantitative aspects of the construction and use of information resources, structures and technologies on the web, drawing on bibliometric and informetric approaches.” Quantitative studies of the web have been named webometrics by Almind and Ingwersen (1997). The WIF was developed by Ingwersen (1998) to measure the impact of websites by the total number of links it receives. According to him, there are three types of WIF such as Simple, Internal and External ones. Garfield (1996) pointed out that the WIF is analogous to the Citation Impact Factor (CIF). The WIF is measured through the number of hyperlinks counts and number of webpages.

### 1.2 Library Consortium

Consortia or a Consortium is a Strategic Alliance of Institutions that have common interests. Consortium is a Latin word, meaning “partnership”, “association” or “society” and derives from **consors** ‘partner’, itself from con- ‘together’ and **sors** ‘fate’, meaning owner of means or comrade. It is a community of value creating entities, generating value through an aggregation of library units within and across organizations i.e., a group of libraries that agree to pool their resources by allowing the user of each institution some type of access to resources of all other institutions. Library consortia concepts came first time from academic libraries formed as consortia for the primary purpose of sharing printed materials. Historically, the common platform of library co-operation was the sharing of union catalogue, document delivery services, storage facilities,

collection development and human resources at local, national and regional level. Inter library loan services was also a form of co-operation wherein libraries agree to share their resources among the member libraries and that enabled them to borrow books, periodicals and other reading materials which were not available locally. The peaked up interest came up for co-operation was seen after when more number of libraries started getting automated and used computers for libraries. A consortium may be a formal or an enabled library consortia to expand both in formal agreement between two or more libraries based on a number and functions over their respected areas. Therefore, a consortium is “an agreement, common platform or goal, aiming to reduce costs per unit through or group (as of companies)formed to undertake formation of purchasing consortia. Some examples of Indian Consortium are as follows: e-ShodhSindhu (for higher education Institutions) FORSA (FORUM for Resource Sharing in Astronomy and Astrophysics), HELINET (Health Sciences Library & Information Network), IIM’s Library Consortia (The Indian Institute of Management), UGC-DAE Consortium for Scientific Research, etc.

### 2. Significance & Scope of Study

Websites are the primary source of information of an institution or organization through which users can access information from anywhere and at any time. A website is a collection of related webpages, images, video or other digital assets that are addressed with common domain name or IP address in an Internal Protocol based network. In this web centric world, webometric became an important segment in the field of Library and Information Science through which analysis of websites has been conducted by information professionals. Nowadays, via ICT-assisted dynamic environment, Library Consortia facilitate their library users, members, web

surfers in many ways to provide their services on finger tips. Library Consortium websites plays an important role in disseminating their informative resources. The number of studies have been conducted on webometric analysis in the field of library and Information Science in India but no study has been conducted to evaluate the websites of library consortium websites in India. Therefore, the present study is an attempt to analyze the websites of Selected Library Consortia in India to show the current status of their website and rank them according to their highest WIF. The findings

will help the librarians, members, users and webmaster in redesigning their websites to a more attractive and informative way. After analyzing the Web Impact Factor of Selected Library Consortium websites, it will help to list the top rank Library

Consortium among the selected consortia in India and will be useful for the users and other libraries.

The scope of the present study shall be limited to the Selected Library Consortia websites available in India. The study is confined to 9 Selected Library Consortia of India viz., **CeRA** (Consortium for e-Resources in Agriculture), **DeLCon** (Department of Biotechnology- Electronic Library Consortium), **e-ShodhSindhu** (Consortium for Higher Education Electronics), **FORSA** (Forum for Resource Sharing in Astronomy and Astrophysics), **HELINET** (Health Science Library & Information Network), **IIMC** (Indian Institute of Management Libraries Consortium), **MCIT** (Ministry of Communications and Information Technology), **NKRC** (National Knowledge Resource Consortium) and **UGC-DAE** (Consortium for Scientific Research). The details about these library consortia are given in Table 1.

**Table 1: Library Consortia websites**

(Source: <http://srflisindia.org/wp/?p=345>)

Sl.No.	Name of Indian Consortium	Area	Website	Year of Establishment
1	CeRA	e-Resources in Agriculture	<a href="http://cera.iari.res.in">http://cera.iari.res.in</a>	2007
2	DeLCon	Biotechnology- Electronic Library	<a href="http://delcon.gov.in/">http://delcon.gov.in/</a>	2009
3	E-Shodhsindhu	Higher Education Electronics	<a href="http://www.inflibnet.ac.in/ess/">http://www.inflibnet.ac.in/ess/</a>	2015
4	FORSA	Astronomy and Astrophysics	<a href="http://www.rri.res.in/htmls/library/forsa.html">http://www.rri.res.in/htmls/library/forsa.html</a>	1982
5	HELINET	Health Science Library & Information Network	<a href="http://www.rguhs.ac.in/digitallibrary/Helinet%20about%20us.html">http://www.rguhs.ac.in/digitallibrary/Helinet%20about%20us.html</a>	2003
6	IIMC	Indian Institute of Management Libraries	<a href="http://library.iima.ac.in/iimconsortium/iim/IIM_Calcutta.html">http://library.iima.ac.in/iimconsortium/iim/IIM_Calcutta.html</a>	2000
7	MCIT	Communication and Information Technology	<a href="http://mcitconsortium.nic.in/">http://mcitconsortium.nic.in/</a>	2005
8	NKRC	CSIR & DST	<a href="http://nkrc.niscair.res.in/">http://nkrc.niscair.res.in/</a>	2009
9	UGC-DAE	Scientific Research	<a href="http://www.csr.res.in/">http://www.csr.res.in/</a>	1990

### 3. Review of Literature

Joicy and Varghese (2011) studied the websites of Research and Development institutions in India. They evaluated how the R & D institutions in India present their content in the websites in which among the 246 R & D institutions, only 109 institutions have websites; out of 109, 77 (31.30 per cent) websites are properly functioning and are analyzed. The study revealed that majority of the R & D institutions in India provide informative links to contacts, copyright, news and events, RTI and history. Only few websites provide opportunity for user interaction in the form of feedback and majority of the R & D institutions websites are good to navigate and find information.

Jeyshankar (2011) conducted a webometric study on Link analysis and the web impact factor of 27 Indian Nationalized Banks' website and visualized that out of 27 Indian Nationalized Banks of India, 17 Nationalized Banks of India have the **.com** at the Top level domain; Allahabad Bank, Central Bank of India and Bank of Baroda rank top on the basis of number of webpages, link pages and in link pages; Andhra bank ranks first with regard to both self link and external link pages; State Bank of India has the highest Simple Web Impact Factor; Syndicate Bank has the first place with highest Self Link WIF followed by the UCO Bank and State Bank of India, whereas the State Bank of Hyderabad occupies first based on External Link WIF and Revised WIF. The study concluded that Nationalized Banks' websites are linked with each other and try to improve the ranking methodology by incorporating more variables like content analysis of the websites.

Kothainayaki and Gopalakrishnan (2011) evaluated the websites of 54 Agricultural universities in India

through webometric methods; of these 54, 44 are State Agricultural Universities (SAUs) and 10 are Central Universities, 5 Deemed Universities and 4 Central Universities with agricultural faculty. Their main objective of the study is to analyze the websites of universities in Tamil Nadu, to calculate the Google PageRank, Alexa Traffic Rank of Agricultural universities websites in India and rank them, to know the rich files i.e., .pdf, .ppt and .doc files only and to generate link-network diagrams of the Agricultural universities in India. The study concluded that a high proportion of links from those websites were directed within the universities' web space and recommend that refocus is required from webmasters of those universities to seek out and link possible websites that can harmonize the resources available in their institutions.

Yazdi and N.J Deshpande (2013) evaluated the 71 selected library associations' websites using 15 selected webometric criteria and ranking based on a scaling method & comparative means analysis (One Way ANOVA). The study found that majority of library association websites have "contact us" links, few have Frequently Answered Questions (FAQ) links. It also found that library association websites are categorized into three groups i.e., high, medium and low with significant differences within the three groups. Among 15 criteria, only four have no significant differences between three groups. These are heterogeneous based on 11 criteria. The Special Library Association website was ranked first, providing SLA TV which is a useful service for members. It concluded that the performance of library associations' websites is satisfactory.

Verma & Devi (2015) made a survey on content analysis of central universities' library websites of

North Eastern States of India. A checklist was designed and the library web pages were evaluated based on the previous evaluations of websites conducted by different authors. They found that all the library webpage of the Central University of North East state are different among themselves in many respects. It is also observed that there are universities which have a very few web pages and information available within.

Verma & Devi (2016) examined the web content and design trends of the Indian Institutes of Management (IIMs) libraries website. A checklist was designed and the library web-pages were evaluated based on the previous evaluations of websites conducted by different authors. The authors found that all the IIMs library webpage is different in themselves in many respects. Their study reveals that only 7 IIMs out of 12 IIMs have their separate library webpage. The other 5 IIMs, IIM Raipur, Rohtak, Ranchi, Udaipur and Shillong have a dedicated library page in their respective IIM websites.

Verma & Brahma (2016) analyzed the websites of 25 selected Non-Profit Organizations (NGOs) of Assam with an objective to analyze the domains, and calculate the number of webpages, link-equity, internal & external link and the web impact factor of selected NGOs websites. Their findings revealed that website of NGO Aakriti has the highest domain authority with 96(15.97%); AARANYAK has the highest Page Authority with 47(9.93%), External Equity Passing Links with 349 (56.93%), Total External Links with 386 (58.48%) and 8.21 EWIF; the Centre for North East Studies & Policy Research, Guwahati has got the highest Internal Equity-Passing Links with 964 (78.69%), Total Equity -

Passing Links with 1087(59.14%), Total Internal Links with 964 (78.69%), 29.43 SWIF and 26.05 IWIF. Thus it concluded that The Centre for North East Studies and Policy Research, Guwahati and AARANYAK gained the high profile among the selected NGOs websites in Assam.

Verma & Brahma (2017) conducted a study on webometric analysis of 10 Central universities in North East India. The study calculates the link pages, the number of webpages, and analyses the Web Impact Factor of Central universities in North East India and found that Tezpur University was in the highest position with Domain Authority of 77(21.75%), Page Authority of 61(14.35%), External Equity-Passing Links basis with 866(32.18%) and Total External Links with 1491 (29.96%); the Mizoram University has the highest Internal Equity-Passing Links with 2331(68.27%), Total Internal Links with 2426(69.03%), Total Links with 3843(45.27%), 83.54 SWIF, 52.73 IWIF and 30.80 EWIF and finally concluded that Mizoram University (MZU) ranks top among the Central Universities Websites in North East India.

#### **4. Methodology**

The research method used in this study is of observation. The data were collected from the library consortium websites using the tool open site explorer ([www.opensiteexplorer.org](http://www.opensiteexplorer.org)) which is a search engine optimization tool for links. It is a tool developed by Moz.com that helps to track the links leading to the website and is one of the essential tools that gives wealth of data by gathering, sorting and exporting link data easier than ever. It is built with speed and accessibility at the forefront and provides tremendous amount of information about the links to any page or site. The study identified

the websites of 9 selected library consortium in India. The study also identifies the individualized domains of selected library consortium in India.

## 5. Objectives

The objective of the present study is to analyze the websites of selected library consortia in India. The specific objectives of the study is to

- ❖ Analyze the URL of selected library consortia in India.
- ❖ Calculate the number of webpages, domain authority of selected library consortia in India.
- ❖ Evaluate the search engine performance of selected library consortia in India.
- ❖ Examine the link-equity of selected library Consortia in India.
- ❖ Find out the internal link and external link pages of selected library consortia in India
- ❖ Calculate the web impact factor of selected library consortia in India and rank them as per WIF.

## 6. Data Analysis

Domain Authority predicts the root domain's ranking potential, i.e., how well a website will rank on search engines. On the other hand, the Page Authority predicts the page's ranking potential i.e., how well a specific page will rank on search engines, whereas, Total linking root domains are the number of root domains that link to a page or domain is a measure of trust and can help predict higher ranking potential. Table 2 shows the Domain Authority, Page Authority and Total Linking Root domains of Library Consortia websites of India, in which the highest Domain Authority was occupied by e-ShodhSindhu with 56 (16.61%), followed by NKRC with 53 (15.72%) and CeRA with 47 (13.94%), while in regard with Page Authority, e-ShodhSindhu again occupies first place with 51 (21.33%), NKRC occupies second place with 47 (19.66%) and CeRA with 44 (18.41%) is in third place. The highest total Linking Root Domains was occupied by DeLCon with 11 RDs, followed by CeRA, e-ShodhSindhu, NKRC and UGC-DAE with total 7 RDs.

**Table 2: Domain Authority, Page Authority and Total Linking Root domains of Library Consortia**

Sl. No.	Name of Indian Consortium	Domain Authority (%)	Page Authority (%)	Total Linking Root domains (%)
1	CeRA	47 (13.94)	44 (18.41)	7 (17.5)
2	DeLCon	29 (8.60)	41 (17.15)	11 (27.5)
3	E-Shodhsindhu	56 (16.61)	51 (21.33)	7 (17.5)
4	FORSA	42 (12.46)	1 (0.41)	0
5	HELINET	42 (12.46)	20 (8.36)	1 (2.5)
6	IIMC	40 (11.86)	1 (0.41)	0
7	MCIT	8 (2.37)	1 (0.41)	0
8	NKRC	53 (15.72)	47 (19.66)	7 (17.5)
9	UGC-DAE	20 (5.93)	33 (13.80)	7 (17.5)
	Total	337	239	40

Equity-passing links are the links which pass value from one page to another. Internal Equity-Passing links are the links that come from pages on the same root domain generally consider to pass ranking value. External Equity-Passing links are those that search engines generally consider to pass ranking value that come from external websites. Table 3 illustrates the Internal Equity-Passing Links, External Equity-Passing Links and Total Equity- Passing Links of Library Consortia' websites of India and visualized that the highest Internal Equity-Passing Links was occupied by e-ShodhSindhu with 27,046 (99.34%), followed by CeRA with 171 (0.62%) in second place and HELINET with 6 (0.02%) in third. On the other hand, the highest External Equity- Passing Links was occupied by DeLCon with 666 (66.53%), second highest goes to NKRC with 261 (26.07%) and e-ShodhSindhu with 49 (4.89%) in third. Hence, the Total Equity- Passing Links of e-ShodhSindhu with 27,095 (95.99%) was the highest, followed by DeLCon with 666 (2.35%) and NKRC with 263 (0.93%).

Total Internal links are the links coming to a website from another website. Total External links are the links pointing out from a website, while Total links are the total amount of links to a site like all types of links including internal, external, followed and not followed. Table 4 depicts the Total Internal Links, Total External Links and Total Links of Library Consortia websites of India and found that Total Internal Links of e-ShodhSindhu with 27,046 (99.32%) occupies the first, followed by CeRA with 177 (0.64%) which occupies the second and HELINET with 6 (0.02%) was in third, while the Total External Links of DeLCon with 667 (66.17%) ranks top, followed by NKRC with 262 (25.99%) and e-ShodhSindhu with 49 (4.86%). Thus, the Total Links of e-ShodhSindhu with 27,095 (95.94%) got the highest, followed by DeLCon with 667 (2.36%) and NKRC with 264 (0.93%).

**Table 3: Internal Equity-Passing Links, External Equity- Passing Links and Total Equity- Passing Links of Library Consortia**

S.No.	Name of Indian Consortium	Internal Equity-Passing Links& %	External Equity-Passing Links& %	Total Equity-Passing Links& %
1	CeRA	171 (0.62)	16 (1.59)	187 (0.66)
2	DeLCon	0	666 (66.53)	666 (2.35)
3	E-Shodhsindhu	27,046 (99.34)	49 (4.89)	27,095 (95.99)
4	FORSA	0	0	0
5	HELINET	6 (0.02)	0	6 (0.02)
6	IIMC	0	0	0
7	MCIT	0	0	0
8	NKRC	2 (0)	261 (26.07)	263 (0.93)
9	UGC-DAE	0	9 (0.89)	9 (0.03)
	Total	27225	1001	28226

**Table 4: Total Internal Links, Total External Links and Total Links of Library Consortia**

S.No.	Name of Indian Consortium	Total Internal Links & %	Total External Links& %	Total Links& %
1	CeRA	177 (0.64)	16 (1.58)	193 (0.68)
2	DeLCon	0	667 (66.17)	667 (2.36)
3	E-Shodhsindhu	27,046 (99.32)	49 (4.86)	27,095 (95.94)
4	FORSA	0	0	0
5	HELINET	6 (0.02)	0	6 (0.02)
6	IIMC	0	0	0
7	MCIT	0	0	0
8	NKRC	2 (0)	262 (25.99)	264 (0.93)
9	UGC-DAE	0	14 (1.39)	14 (0.04)
	Total	27231	1008	28239

Followed Linking root domains are the number of root domains that have at least one followed link to a page or domain. It is a website that links to a particular website. Linking C Blocks refer to the part of IP address that's different. The same class C address means something that has the same third octet in the address. It indicates that the sites are all related to each other and on the same server. Table 5 shows the Followed Linking Root Domains and Linking C Blocks of Library Consortia websites of India and visualized that the Followed Linking Root Domains of DeLCon with 10 (27.77%) was the highest, followed by CeRA and e-ShodhSindhu with 7 (19.44%) and NKRC with 6 (16.66%). It also depicts the Linking C Blocks of Library Consortia websites and found that the highest Linking C Blocks was occupied by DeLCon with 11 (30.55%), followed by NKRC with 7 (19.44%) and CeRA and UGC-DAE with 6 (16.66%).

Table 6 provides the Linking domains of all 9 Library Consortia websites of India. It shows that CeRA got a total number of 7 linking root domains, in

which icar.org.in/ with 60 DA and 805 LRDs was the highest, DeLCon consortium has got total number of 11 linking root domains, in which flavors.me/ with 86 DA and 17,479 LRDs was the highest whereas, from the e-ShodhSindhu consortium got total number of 7 linking root domains, in which inflibnet.ac.in/ with 56 DA and 694 LRDs was the highest, while HELINET has got only 1 linking root domain i.e., rguhs.ac.in/ with 42 DA and 110 LRDs. Based on NKRC consortium, it has got total number of 7 linking root domains, in which niscair.res.in/ with 53 DA and 723 LRDs was the highest and UGC-DAE has also got total number of 7 linking root domains, in which google.co.in/ with 86 DA and 25,073 LRDs was the highest. While, consortia like FORSA, IIMC and MCIT has got zero LRDs.

**Table 5: Followed Linking Root Domains and Linking C Blocks of Library Consortia websites**

Sl. No.	Name of Indian Consortium	Followed Linking Root Domains & %	Linking C Blocks & %
1	CeRA	7 (19.44)	6 (16.66)
2	DeLCon	10 (27.77)	11 (30.55)
3	E-Shodhsindhu	7 (19.44)	5 (13.88)
4	FORSA	0	0
5	HELINET	1 (2.77)	1 (2.77)
6	IIMC	0	0
7	MCIT	0	0
8	NKRC	6 (16.66)	7 (19.44)
9	UGC-DAE	5 (13.88)	6 (16.66)
	Total	36	36

**Table 6: Linking domains of Library Consortia**

S.No.	Name of Indian Consortium	Linking Root Domain	Domain Authority	Linking Root Domains
1	CeRA	icar.org.in/	60	805
		iari.res.in/	47	260
		icar.gov.in/	42	52
		dare.nic.in/	39	70
		angrau.ac.in/	32	111
		dare.gov.in/	26	12
		btisnet.gov.in/	19	18
2	DeLCon	flavors.me/	86	17,479
		dbtindia.nic.in/	58	443
		iitg.ac.in/	49	333
		cdfd.org.in/	45	89
		icolc.net/	39	66
		nii.res.in/	37	108
		cus.ac.in/	30	97

S.No.	Name of Indian Consortium	Linking Root Domain	Domain Authority	Linking Root Domains
		nipgr.res.in/	29	72
		nabi.res.in/	27	33
		btisnet.gov.in/	19	18
		jntbgri.in/	22	16
3	E-Shodhsindhu	inflibnet.ac.in/	56	694
		lkouniv.ac.in/	41	126
		iitbbs.ac.in/	40	160
		nagpuruniversity.org/	33	90
		knowyourcollege-gov.in/	28	24
		cuh.ac.in/	28	36
		ssus.ac.in/	25	29
4	FORSA	-	-	-
5	HELINET	rguhs.ac.in/	42	110
6	IIMC	-	-	-
7	MCIT	-	-	-
8	NKRC	niscair.res.in/	53	723
		tifac.org.in/	48	566
		ncl-india.org/	40	163
		icolc.net/	39	66
		nistads.res.in/	37	151
		liswiki.org/	34	150
		cgcri.res.in/	32	73
9	UGC-DAE	google.co.in/	86	25,073
		ugc.ac.in/	67	1,279
		mhrd.gov.in/	64	1,205
		iitmandi.ac.in/	40	129
		eenadupratibha.net/	32	38
		mysarkarinaukri.com	21	26
		ancpatna.org	12	2

Web Impact Factor is the number of webpages in a website receiving links from other websites, divided by the number of webpages published in the site that are accessible to the crawler. The Simple Web Impact Factor (SWIF) is the ratio of links to the number of pages. Internal Web Impact Factor (IWIF) is the ratio of internal links within the site to number of pages. External Web Impact Factor (EWIF) is the ratio of links made from external sites to the target site, to the number of pages at the site. Table 7 exhibits the Web Impact Factor of 9 Library Consortia websites of India. The study analyses the Simple WIF, Internal WIF and External WIF. After calculating the WIF, it is observed that e-ShodhSindhu with 531.27 SWIF scores highest, followed by DeLCon with 16.26 SWIF which occupies the second place and NKRC with 5.61 SWIF occupies the third. On the basis of ranking of IWIF, it found that e-ShodhSindhu with 530.31 scores the maximum number of IWIF, followed by CeRA with 4.02 IWIF. In regard to the ranking of EWIF, the result visualized that DeLCon with 16.26 EWIF occupies at top position, followed by NKRC with 5.57 EWIF.

## 7. Findings

- ❖ Among the selected library consortia, e-ShodhSindhu tops with the highest Domain Authority and Page Authority with 56 (16.61%) and 51 (21.33%) respectively, while the second highest Domain Authority and Page Authority were occupied by NKRC with 53 (15.72%) and 47 (19.66%), followed by CeRA with 47 (13.94%) and 44 (18.41%) respectively.
- ❖ DeLCon with the highest total Linking Root Domains tops with 11 LRDs, followed by CeRA, e-ShodhSindhu, NKRC and UGC-DAE with total 7 LRDs.
- ❖ e-ShodhSindhu top with highest Internal Equity-Passing Links and Total Equity- Passing Links with 27,046 (99.34%) and 27,095 (95.99%) respectively. The second and third highest Internal Equity-Passing Links was occupied by CeRA with 171 (0.62%) and HELINET with 6 (0.02%) respectively, while on the basis of External Equity- Passing Links, DeLCon tops

**Table 7: Web Impact Factor**

S.No.	Name of Indian Consortium	Simple Web Impact factor (SWIF)	Internal Web Impact Factor (IWIF)	External Web Impact Factor (EWIF)
1	CeRA	4.38	4.02	0.36
2	DeLCon	16.26	0	16.26
3	E-Shodhsindhu	531.27	530.31	0.96
4	FORSA	0	0	0
5	HELINET	0.3	0.3	0
6	IIMC	0	0	0
7	MCIT	0	0	0
8	NKRC	5.61	0.04	5.57
9	UGC-DAE	0.42	0	0.42

with 666 (66.53%), followed by NKRC with 261 (26.07%) and e-ShodhSindhu with 49 (4.89%) in third. The second and third place in regard to Total Equity- Passing Links goes to DeLCon with 666 (2.35%) and NKRC with 263 (0.93%).

- ❖ e-ShodhSindhu once again tops with the highest Total Internal Links and Total Links of 27,046 (99.32%) and 27,095 (95.94%) respectively. The second and third place in regard to Total Internal Links was occupied by CeRA with 177 (0.64%) and HELINET with 6 (0.02%), while on the basis of Total External Links, DeLCon with 667 (66.17%) ranks at top, whereas, second and third place was occupied by NKRC with 262 (25.99%) and e-ShodhSindhu with 49 (4.86%). DeLCon with 667 (2.36%) Total Links and NKRC with 264 (0.93%) Total Links occupies second and third place.
- ❖ DeLCon tops with the highest Followed Linking Root Domains of 10 (27.77%), followed by CeRA and e-ShodhSindhu with 7 (19.44%) and NKRC with 6 (16.66%).
- ❖ The highest Linking C Blocks were occupied by DeLCon with 11 (30.55%), followed by NKRC with 7 (19.44%) and CeRA and UGC-DAE with 6 (16.66%).
- ❖ DeLCon consortium got the highest linking root domains with total number of 11, while consortia like CeRA, e-ShodhSindhu, NKRC and UGC-DAE have got a total number of 7 LRDs, HELINET with only 1 LRD and consortia like FORSA, IIMC and MCIT has got zero LRDs.
- ❖ e-ShodhSindhus cores highest with 531.27 SWIF and 530.31 IWIF, while DeLCon with 16.26 EWIF occupies at top position and second highest

with 16.26 SWIF. NKRC occupies second place with 5.57 EWIF and third place with 5.61 SWIF. CeRA with 4.02 IWIF occupies the second place.

## 8. Conclusion

In the present digital era, library consortia are the life line and their websites are the sole source of information for academic activities (teaching & research) in higher institutions because without library consortia, users and web surfers are not able to get the quality resources for their academic activities. This study provides information about the websites of selected Library consortia in India and the findings clearly show the present scenario of websites of selected Library consortia and found that e-ShodhSindhu and DeLCon are the most popular consortia among the selected ones. Rest of the consortia' websites need to be improve to make it more useful by the users. With the help of consortia, many institutional libraries are able to manage their information resources with limited budget. It has got more advantage when the Library consortia are interlinked with each other. The interlinking among consortia will enable to have good collaborations with various benefits.

## References

1. A.J, J and Varghese , R. R. (2011). Websites of Research and Development Institutions in India: A Webometric Study. *International Journal of Digital Library Services* , 1(2), 90-104.
2. Babu, B. R., Jeysankar, R., & Nageswara Rao, P. (2010). Websites of Central Universities in India: A Webometric Analysis. *DESIDOC Journal of Library & Information Technology*, 30(4), 1-11.

3. BJorneborn, L, and Ingwersen, P. (2001). Perspectives of Webometrics. *Scientometrics*, 50(1), 65-82.
4. Bjorneborn, L., & Ingwersen, P. (2004) Towards a basic framework for webometrics. *Journal of the American Society for Information Science and Technology*, 55: 1216–1227.
5. Jalal, S. K., Biswas, S. C., & Mukhopadhyay, P. (2010). Web Presence of Selected Asian Countries: A Webometric Study. *Collnet Journal of Scientometrics and Information Management*, 4(2), 1-12.
6. Jeysankar, R. (2011) Link Analysis and Web Impact Factor of Indian Nationalised Banks' Website: A Webometric Study. *International Journal of Information Dissemination and Technology*, 1(3) 171-179.
7. Kothainayaki, S and Gopalakrishnan, S. (2011). Webometric analysis of agricultural universities in India. *Indian Journal of Science and Technology*, 4(3), 207-214.
8. Noruzi, A. (2006). The web impact factor: a critical review. *The Electronic Library*, 24(4), 490-499.
9. Mukhopadhyay, P. (2004) Measuring Web Impact Factors: A Webometric Study based on the Analysis of Hyperlinks, (pp. 411-425). West Bengal: IASLIC.
10. Shukla, A and Tripathi, A. (2009). Webometric analysis of institutes of National importance in India. *IASLIC Bulletin*, 54, 165-180.
11. Shukla, A and Tripathi, A. (2015). *Webometric Studies and Libraries*. New Delhi: Ess Ess Publication.
12. Singh, K and Rao, V. B. (2008). An Overview of the Library Consortia in India. 6th Convention PLANNER (pp. 140-149). Nagaland: INFLIBNET.
13. Thanuskodi, S. (2012) A Webometric Analysis of selected Institutes of National Importance Websites in India. *International Journal of Library Science*, 1(1), 13-18.
14. Verma, M. K and Devi, K. K. (2016). Web Content and Design Trends of Indian Institutes of Management (IIMs) Libraries Website: An Analysis. *DESIDOC Journal of Library & Information Technology*, 36(4), 220-227.
15. Verma, M. K and Devi, K. K. (2016). Comparison of Design and Content Features of North-Eastern Hill University (NEHU) and Mizoram University (MZU) Websites: A Study. *World Digital Libraries*, 9(1), 19-32.
16. Verma, M. K and Brahma, K. (2017). A Webometric analysis of Selected Non-Profit Organizations (Ngos) Of Assam. *KIIT Journal of Library and Information Management*, 4(1), 63-72.
17. Verma, M. K and Brahma, K. (2017). Websites of Central Universities in North East India: A Webometric Analysis. *DESIDOC Journal of Library & Information Technology*, 37(3), 389-395.
18. Verma, M. K and Devi, K. K. (2015). Content Analysis of Central Universities Library Websites of North Eastern States of India: A Survey. *Journal of Research in Librarianship*, 2(5), 48-59.

19. Vijayakumar, M., Kannappanavar, B., & Kumar, K. S. (2012). Webometric Analysis of Web Presence and Links of SAARC Countries. *DESIDOC Journal of Library & Information Technology*, 32(1), 70-76.
20. Vijayakumar, M. (2012). Webometric Analysis of University Websites in Sri Lanka. *International Journal of Information Dissemination and Technology*, 2(3), 155-159.
21. Yazdi, F. A and Deshpande, N. (2013). Evaluation of selected library associations' web sites. *Aslib Proceedings: New Information Perspectives*, 65(2), 92-108.

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