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Website of High Courts in India: a Webometric Study

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Abstract

Website is an electronic information wall of an organization. This paper highlights the various web impact factors, scores and ranking of the websites of high courts in India. The study also found the other important outputs like page size of the websites, access speed score of websites, load time and daily page use time of the website have been reflected in this study and give idea about quality of the websites. The webometric tools like Alexa, Google page rank, Neil Patel SEO analysis, Google search engine and SocScibot4 are used for data collection and designing In-link, Out-link and mapping visualization of this sites.

Keywords: *High courts' websites in India, Webometrics, Web Impact Factor, Web Link, web Mapping.*

Introduction

High court is a dependable institution to every Indian citizen, because it controls the society by constitutional law. High court makes good society for person. Every Indian citizen adhere this institution for disturb less life. 25 high courts at the state and union territory level of India. We can access any legal information from high courts' website. Every high courts' website link to self website, other high courts' website, and link to other institutions.

The webometric is to measure the impact of website by the number of links and followers. It can be defined as the ratio of in-link, out-link to a high courts' websites and measure to the number of pages, size of pages at the websites. The present paper attempts to analyses and rank high courts' website on the basis of Alexa, Google page rank, Neil patel SEO, Google Search Engine and SocSciBot4. Mapping of the link using SocSciBot4 is also the forte of this paper.

Literature Review

Thelwall (2001) studied academic Web crawler to study links to six UK universities. He explained the links between UK, Australia and New Zealand universities where both crawler and Altavista were used. The number of academic staff members were used to represent the size of university replacing webpage as WIF denominator.

Mukhopadhyay (2002) had discussed the field of webometrics and Web Impact Factor (WIF) in the educational institutions in India. He explained the external link for WIF.

Thelwall (2002) studied that a comparison of sources of links for academic web impact factor calculations. It has been demonstrated that several versions of the metric can produce results that correlate with research rating of British universities.

Mukhopadhyay (2004) found out external the result of webometrics investigation at different levels of domain system. He had shown the calculation of web impact factor for Top Level Domain (ccTLD), Sub Level Domain related to education and research. He discussed Generic Top Level Domain (gTLD), International Top Level Domain (iTLD) and Country Code Top Level Domain (ccTLD). He had also shown the ranking of Indian Institutes of Management (IIMs) and Indian Institutes of Technology (IITs) in India. He suggested a new idea of webometrics.

Noruzi (2005) have revealed about his work on different types of the web impact factors (WIF) for universities from Iran and concluded a new method of measurement for web impact factor. Altavista used for WIF of Iranian universities and calculated by dividing link counts by the number of pages for each university at a given point of time. These WIFs were then compared to study the impact factor, visibility and influence of the Iranian universities' web sites.

Jalal, Biswas and Mukhopadhyay (2008) discussed the link analysis for the state universities of West Bengal that IIT Kharagpur, the first rank among the universities based on Wireless Information System for Emergency Responders indicator and Uttar Banga Krishi Vishwavidyalaya, got the last position from the point of view of webometric ranking.

Jeysankar and Ramesh Babu (2009) examined websites of 45 universities in Tamil Nadu comprising 27 State universities and 18 private universities. They investigated domain systems of the websites, analysed the number of web pages and link pages, and calculated the simple WIF, self link WIF, external link WIF and revised WIF. They ranked the websites according to their WIF. They concluded on two things – web impact factor and analysis of link structures of web links through network diagram.

Jalal, Biswas and Mukhopadhyay (2010) had analyzed in their hyperlink study for the selected Indian universities. They discuss the web impact factors for Indian universities' websites. SocSciBot 3.0 is used to generate link data in order to develop or from micro-link topology under study.

Objectives

The general objective of this paper is that an evaluation be made among the High courts' websites to find out their ranking as per different parameters, the detail objectives are as follows:

- i. To calculate Web impact factor to all High Courts' Websites in India.
- ii. To find out the most enriched High courts' websites.
- iii. To evaluate the websites on the basis of different parameters and ranking them.
- iv. To find out the major component of the web sites like total number of web pages, total links (self-link or in-link or back link and out link or external link).
- v. To visualize link mapping among the High courts' websites in India.

Methodology

High courts' websites have been taken from official website of Supreme Court, Wikipedia and different search engine. All the selected high court websites are analyzed with help of online tools like Alexa (<https://www.alexa.com/siteinfo>), Neil pateal's SEO analyser (<https://neilpateal.com/seo-analyzer/>), Google page rank (<https://checkpagerank.net>) and Google (<http://google.com>). The collected data were analyzed and discussed keeping in view the objectives of the study after the data collection. SocSciBot 4 (<http://socscibot.wlv.ac.uk/>) is also used to visualize the link network and mapping of the website.

A methodology is followed in two parts:

1. Webometric study includes find out web impact factors, rank analysis using tools and techniques.
2. Visualization and network link analysis among the High Courts' websites.

The data collection method extensively use of five special keywords like -

- (i) site:URL/site address,
- (ii) link:URL/site address,
- (iii) link:URL/site address AND site:URL/site address,
- (iv) link:URL/site address AND NOT site:URL/site address and
- (v) link:URL/site address NOT site:URL/site address

By using Google search engine. The five Boolean search statement methods are used to collect data for each High Courts' Websites in India.

Table-1: Explanation of special keywords using this dissertation

Special Keywords	Explanation
site:URL/site address	Retrieve the number of WebPages at the website under a URL/website or domain name.
link:URL/site address	Retrieve the number of WebPages with a hyperlink with the specified URL/website or domain name
link:URL/site address AND site:URL/site address	Retrieve the number of WebPages under a URL/website or domain name which provides hyperlinks to this URL/website or domain name, i.e. self – links pages (links from the same website).
link:URL/site address AND NOT site:URL/site address	Retrieve the number of WebPages not under a URL/website or domain name, i.e. external - link pages.
link:URL/site address NOT site:URL/site address	Retrieve the number of links incoming from other websites, i.e. inlink / backlink pages

By using Google search engine. The Google search engine supports all the above special keywords to retrieve the data.

Data Collection

State and Union Territory are 36 in India but there are 25 high courts at the state and union territory level of India.

Table-2: High courts by states/union territories

State/UT	Principal of State/UT	Court	Official Website
Andaman and Nicobar Island	Port Blair	Calcutta High Court	http://www.calcuttahighcourt.gov.in
Arunachal Pradesh	Itanagar	Gauhati High Court	http://www.ghcitanagar.gov.in
Andhra Pradesh	Amaravati	Andhra Pradesh High Court	http://www.hc.ap.nic.in
Assam	Gauhati	Gauhati High Court	http://www.ghconline.nic.in
Bihar	Patna	Patna High Court	http://www.patnahighcourt.bih.nic.in
Chandigarh	Chandigarh	Punjab and Haryana High Court	http://www.highcourtchd.gov.in
Chhattisgarh	Bilaspur	Chhattisgarh High Court	http://www.highcourt.cg.gov.in
Dadra and Nagar Haveli	Mumbai	Bombay High Court	http://www.bombayhighcourt.nic.in
Daman and Diu	Mumbai	Bombay High Court	http://www.bombayhighcourt.nic.in
National Capital Territory of Delhi	New Delhi	Delhi High Court	http://www.delhihighcourt.nic.in
Goa	Panaji	Bombay High Court	http://www.hcbombayatgoa.ni.in
Gujarat	Ahmedabad	Gujarat High Court	http://www.gujarathighcourt.nic.in
Haryana	Chandigarh	Punjab and haryana High Court	http://www.highcourtchd.gov.in
Himachal Pradesh	Shimla	Himachal Pradesh High Court	http://www.hphighcourt.nic.in
Jammu and Kashmir	Srinagar/Jammu	Jammu and Kashmir High Court	http://www.jkhighcourt.nic.in
Jharkhand	Ranchi	Jharkhand High Court	http://www.jharkhandhighcourt.nic.in
Karnataka	Bangalore	Karnataka High Court	http://www.hck.gov.in
Kerala	Kochi	Kerala High Court	http://www.highcourtofkerala.nic.in

Lakshadweep	Kochi	Kerala High Court	http://www.highcourtofkerala.nic.in
Madhya Pradesh	Jabalpur	Madhya Pradesh High Court	http://www.mphe.in
Maharashtra	Mumbai	Bombay High Court	http://www.bombayhighcourt.nic.in
Manipur	Imphal	Manipur High Court	http://www.hcmimphal.nic.in
Meghalaya	Shillong	Meghalaya High Court	http://www.meghalayahighcourt.nic.in
Mizoram	Aizawl	Gauhati High Court	http://www.ghcazlbench.nic.in
Nagaland	Kohima	Gauhati High Court	http://www.kohimahighcourt.gov.in
Odisha	Cuttack	Orissa High Court	http://www.orissahighcourt.nic.in
Puducherry	Chennai	Madras High Court	http://www.hcmadras.tn.nic.in
Punjab	Chandigarh	Punjab and Haryana High Court	http://www.highcourtchd.gov.in
Rajasthan	Jodhpur	Rajasthan High Court	http://www.hcraj.nic.in
Sikkim	Gangtok	Sikkim High Court	http://www.highcourtofsikkim.nic.in
Tamil Nadu	Chennai	Madras High Court	http://www.hcmadras.tn.nic.in
Telangana	Hyderabad	Telangana High Court	http://www.hc.ts.nic.in
Tripura	Agartala	Tripura High Court	http://www.thc.nic.in
Uttar Pradesh	Allahabad	Allahabad High Court	http://www.allahabadhighcourt.in
Uttarakhand	Nainital	Uttarakhand High Court	http://www.highcourtofuttarakhand.gov.in
West Bengal	Kolkata	Calcutta High Court	http://www.calcuttahighcourt.gov.in

The distribution of High Courts' Websites in India is given in the Table-2. Almost 36 Indian states and Union Territory but there are 25 high courts. Dadra and Nagar Haveli, Daman and Diu, Goa and Maharashtra are under the Bombay high court. Andaman and Nicobar Island and West Bengal are under the Calcutta high court. Arunachal Pradesh and Assam are under the Gauhati High Court. Gujarat, Mizoram and Nagaland are under the Gauhati High Court. Kerala and Lakshadweep are under the Kerala High Court. Puducherry and Tamil Nadu are under the Madras High Court. Chandigarh, Haryana and Punjab are under the Punjab and Haryana High Court.

Data collection from webometric tools i.e. Alexa, Google Page Rank and SEO Analyzer.

Table-3: Results from Alexa

Court's Name	URL/Website	Global Rank	Rank in India	Bounce Rate of Visitors	Daily Page Views Per Visitors	Daily Time of Site	Average load time of Sites(Sec.)
Allahabad High Court	http://www.allahabadhighcourt.in	12067	956	42.50%	3.38	3:47h	0.562
Andhra Pradesh High Court	http://www.hc.ap.nic.in	39974	2332	35.80%	3.80	4:60h	0.332
Bombay High Court	http://www.bombayhighcourt.nic.in	33738	2186	19.80%	8.46	7:44h	0.557
Calcutta High Court	http://www.calcuttahighcourt.gov.in	117386	9847	44.60%	2.20	2:51h	1.776
Chhattisgarh High Court	http://www.highcourt.cg.gov.in	20499	1028	35.60%	3.05	2:60h	1.448
Delhi High Court	http://www.delhihighcourt.nic.in	39835	2570	34.70%	3.95	4:13h	0.582
Gauhati High Court	http://www.ghcazlbench.nic.in	1076080	73082	47.80%	4.10	2:15h	Not found
Gujarat High Court	http://www.gujarathighcourt.nic.in	114268	8240	63.20%	1.80	1:42h	0.961
Himachal Pradesh High Court	http://www.hphighcourt.nic.in	147463	22615	60.40%	1.70	2:17h	0.791
Jammu and Kashmir High Court	http://www.Jkhighcourt.nic.in	329092	18333	40.20%	2.40	2:23h	Not found
Jharkhand High Court	http://www.jharkhandhighcourt.nic.in	169249	13301	52.30%	2.00	1:45h	1.188

Karnataka High Court	http://www.hck.gov.in	3033766	Not found	Not found	1.00	1:58	Not found
Kerala High Court	http://www.highcourtofkerala.nic.in	190076	13478	75.10	1.60	1:00h	0.295
Madhya Pradesh High Court	http://www.mphc.in	977092	55997	17.20%	3.00	5:32h	Not found
Madras High Court	http://www.hcmadras.tn.nic.in	25046	1794	47.10%	2.87	3:13h	1.233
Manipur High Court	http://www.hcmimphal.nic.in	590545	45160	65.00%	1.50	1:21h	Not found
Meghalaya High Court	http://www.meghalayahighcourt.nic.in	1294061	209712	47.00%	2.10	2:35h	Not found
Orissa High Court	http://www.orissahighcourt.nic.in	238248	15918	53.70%	2.10	3:05h	Not found
Patna High Court	http://www.patnahighcourt.bih.nic.in	2619	164	42.90%	4.19	9:11h	0.749
Punjab and Haryana	http://www.highcourtchd.gov.in	90768	4897	61.70%	1.60	2:32h	1.332
Rajasthan High Court	http://www.hcraj.nic.in	60032	3532	25.20%	3.11	3:45h	1.276
Sikkim High Court	http://www.highcourtofsikkim.nic.in	589692	47115	31.00%	8.50	8:31h	Not found
Telangana High Court	http://www.hc.ts.nic.in	65567	5952	20.30%	3.76	5:22h	0.455
Tripura High Court	http://www.thc.nic.in	1255865	184342	73.60%	1.50	1:02h	Not found
Uttarakhand High Court	http://www.highcourtofuttarakhand.gov.in	419861	45823	60.90%	2.10	1:31h	Not found

Table-4: Results from Google Page Rank

Court's Name	URL/Website	GPR
Allahabad High Court	http://www.allahabadhighcourt.in	5/10
Andhra Pradesh High Court	http://www.hc.ap.nic.in	6/10
Bombay High Court	http://www.bombayhighcourt.nic.in	6/10

Calcutta High Court	http://www.calcuttahighcourt.gov.in	4/10
Chhattisgarh High Court	http://www.highcourt.cg.gov.in	5/10
Delhi High Court	http://www.delhihighcourt.nic.in	6/10
Gauhati High Court	http://www.ghcazlbench.nic.in	3/10
Gujarat High Court	http://www.gujarathighcourt.nic.in	5/10
Himachal Pradesh High Court	http://www.hphighcourt.nic.in	5/10
Jammu and Kashmir High Court	http://www.jkhighcourt.nic.in	4/10
Jharkhand High Court	http://www.jharkhandhighcourt.nic.in	5/10
Karnataka High Court	http://www.hck.gov.in	2/10
Kerala High Court	http://www.highcourtofkerala.nic.in	5/10
Madhya Pradesh High Court	http://www.mphc.in	3/10
Madras High Court	http://www.hcmadras.tn.nic.in	6/10
Manipur High Court	http://www.hcmimphal.nic.in	4/10
Meghalaya High Court	http://www.meghalayahighcourt.nic.in	4/10
Orissa High Court	http://www.orissahighcourt.nic.in	4/10
Patna High Court	http://www.patnahighcourt.bih.nic.in	6/10
Punjab and Haryana	http://www.highcourtchd.gov.in	5/10
Rajasthan High Court	http://www.hcraj.nic.in	5/10
Sikkim High Court	http://www.highcourtofsikkim.nic.in	4/10
Telangana High Court	http://www.hc.ts.nic.in	4/10
Tripura High Court	http://www.thc.nic.in	4/10
Uttarakhand High Court	http://www.highcourtofuttarakhand.gov.in	4/10

Table-5: Results from SEO Analyzer

Court's Name	URL/Website	Page Size	Load Time (Sec.)
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Allahabad High Court	http://www.allahabadhighcourt.in	0.9KB	0.82
Andhra Pradesh High Court	http://www.hc.ap.nic.in	67.13KB	2.60
Bombay High Court	http://www.bombayhighcourt.nic.in	0.20KB	6.33
Calcutta High Court	http://www.calcuttahighcourt.gov.in	528.3KB	3.87
Chhattisgarh High Court	http://www.highcourt.cg.gov.in	80.3KB	2.00
Delhi High Court	http://www.delhihighcourt.nic.in	200.2KB	3.27
Gauhati High Court	http://www.ghcazlbench.nic.in	38.3KB	2.09
Gujarat High Court	http://www.gujarathighcourt.nic.in	887.4KB	6.90
Himachal Pradesh High Court	http://www.hphighcourt.nic.in	23.8KB	0.72
Jammu and Kashmir High Court	http://www.jkhighcourt.nic.in	300.9KB	5.57
Jharkhand High Court	http://www.jharkhandhighcourt.nic.in	810.0KB	14.76
Karnataka High Court	http://www.hck.gov.in	613.6KB	6.07
Kerala High Court	http://www.highcourtofkerala.nic.in	145.1KB	2.68
Madhya Pradesh High Court	http://www.mphc.in	8.2KB	0.95
Madras High Court	http://www.hcmadras.tn.nic.in	970.5KB	5.41
Manipur High Court	http://www.hcmimphal.nic.in	308.1KB	3.21
Meghalaya High Court	http://www.meghalayahighcourt.nic.in	Not found	Not found
Orissa High Court	http://www.orissahighcourt.nic.in	432.8KB	4.26
Patna High Court	http://www.patnahighcourt.bih.nic.in	Not found	Not found
Punjab and Haryana	http://www.highcourtchd.gov.in	Not found	Not found
Rajasthan High Court	http://www.hcrnj.nic.in	554.7KB	5.28
Sikkim High Court	http://www.highcourtofsikkim.nic.in	2.0MB	5.88
Telangana High Court	http://www.hc.ts.nic.in	28.8KB	3.05
Tripura High Court	http://www.thc.nic.in	282.1KB	3.10
Uttarakhand High Court	http://www.highcourtofuttarakhand.gov.in	161.2KB	8.23

Scope

This study examined and explored into the High courts' Websites in India: a webometric study. There are 25 High courts' Websites in India. The study aimed to find out the various types of WIF of the websites of High courts in India. The paper to establish a ranking of these websites by measuring their WIF. The paper of the ranking will help the readers, students, researchers to compare and identify High courts' Websites in India by their WIF. The paper study of the ranking will help to compare and identify High courts' Websites in India by their WIF for which High courts' Websites in India is best and popular.

Webometrics

'Webometrics' is combination of two words, 'web' and 'metrics'. 'web' indicates websites and 'metrics' means parameters for measurement of quantitative performance. It is analysis of the indicators used to compare the performance of different components. The term webometrics was first coined by Almind and Ingwersen on 1997.

The concept of webometrics is concerned with measuring aspects of the web i.e. websites, web pages, parts of web pages, words in web pages, hyperlinks, web search engines.

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" (Thelwall, 2009).

Web Impact Factor (WIF)

Web Impact Factor is a one of the quantitative indicators i.e. the average link frequencies of measuring idea.

Impact Factor is calculated in bibliometrics, it is a measure of the influence of a site across the entire Web calculated according to the number of link from other sites, Measuring and Mapping the World Wide Web through Web Hyperlinks.

- The ratio of all links to the number of pages, i.e. the simple WIF.
- The ratio of self links within the site to the number of pages, i.e. the self link WIF.
- The ratio of links made from external sites to the target site, to the number of pages at the site, i.e. the external Link WIF.

- The ratio of self links made incoming other sites, i.e. the In-Link WIF.

High Courts in India

In 1861 the Indian High Courts Act 1861 was enacted to create high courts for different state and union territory. The oldest high courts in India are Bombay High Court, Madras High Court, Allahabad High Court and Calcutta High Court.

There are 25 high courts at the state and union territory level of India, which together with the Supreme Court of India at the national level, comprise the country's judicial system. Each high court has jurisdiction over a state, a union territory or a group of states and union territories. Below the high courts is a hierarchy of subordinate courts such as the civil courts, family courts, criminal courts and various other district courts. High courts are instituted as constitutional courts under Part VI, Chapter V, Article 214 of the Indian constitution.

Table 6: Selection of Search Engine

Keywords	Yahoo	Google	Hotbot	Exalead	Bing
site:URL/site address	√	√	√	√	√
Link:URL/site address	×	√	√	√	×
Link:URL/site address AND site:URL/site address	×	√	√	×	×
Link:URL/site address AND NOT site:URL/site address	×	√	×	√	×
Link:URL/site address NOT site:URL/site address	×	√	√	√	×

Webometric studies use advance query of commercial search engine to obtain hyperlink counts. There are many search engine are available and some of them primary search engine are Yahoo (<https://www.yahoo.com>), Google (<https://www.google.com>), Hotbot (<https://www.hotbot.com>), Exalead (<https://www.exalead.com>) and Bing (<https://www.bing.com>). For this research work we have formulated five special keywords for accessing the number of web pages, number of hyperlink web pages, number of self link pages, number of external pages and number of in-link pages.

Table-7: List of the special keywords for collecting the data

Syntax	Explanation	Example
site:URL/site address	To find the all web pages under specific domain (NWP)	site:shodhganga.inflibnet.ac.in
Link:URL/site address	To find the number of link webpages /hyperlink pages (LWP)	link:shodhganga.inflibnet.ac.in
Link:URL/site address AND site:URL/site address	To find the Self-link web pages (SLWP)	link:shodhganga.inflibnet.ac.in AND site:shodhganga.inflibnet.ac.in
Link:URL/site address AND NOT site:URL/site address	To find the External-link web pages (ELWP)	link:shodhganga.inflibnet.ac.in AND NOT site:shodhganga.inflibnet.ac.in
Link:URL/site address NOT site:URL/site address	To find the In-link web pages (ILWP)	link:shodhganga.inflibnet.ac.in NOT site:shodhganga.inflibnet.ac.in

Google (<http://www.google.com>) search engine is used for collecting data at this study. Google was used to find the approximate number of pages in each website that link to one another. The Google query is based upon the vocabulary of the domain names of webpage URLs. The Google has been used to search and collect data. The data collection method extensively makes use of five special key words like site:URL/site address, link:URL/site address, link:URL/site address AND site:URL/site address, link:URL/site address AND NOT site:URL/site address and link:URL/site address NOT site:URL/site address from Google Search engines. The five Boolean search statement methods used to collect data for each High Courts' Website.

Calculation of Web Impact Factor (WIF)

Now, we have shown the calculation Simple Web Impact Factor(SWIF), Self Link Web Impact Factor (SLWIF), External Link Web Impact Factor (ELWIF) Inn Link Web Impact Factor (ILWIF) or Revised Web Impact Factor (RWIF).

The WIF provides quantitative tools for ranking, evaluating, categorizing, and comparing web sites, top-level domains and sub-domains. There are three types of link. Outgoing links from web pages are here named external links or outlinks, links coming into a site from other sites inlinks or backlinks, and links within the same site self-links. There are types of WIF: Simple WIF, external-ink WIF, self-link WIF and in-link (revised) WIF.

Simple WIF =
$$\frac{\text{Total number of links / hyperlinks (external-link and self-link web pages) (LWP)}}{\text{Total number of web pages (NWP)}}$$

(SWIF)

External-link WIF =
$$\frac{\text{Total number self-link web pages}}{\text{Total number of web pages (NWP)}}$$

(ELWIF)

Self-link WIF =
$$\frac{\text{Total number of external-link web pages}}{\text{Total number of web pages (NWP)}}$$

(SLWIF)

Inlink / Revised WIF =
$$\frac{\text{Total number of in-link web pages}}{\text{Total number of web pages (NWP)}}$$

(ILWIF / RWIF)

Table-8: Simple Web Impact Factor for High courts' Websites in India

Courts' Name and URL	NWP	LWP	SWIF	Ranked by SWIF
Andhra Pradesh High Court, http://www.hc.ap.nic.in	355	1470000	41408.45	1
Telangana High Court, http://www.hc.ts.nic.in	202	1210000	5990.10	2
Patna High Court, http://www.patnahighcourt.bih.nic.in	721	921000	1277.39	3
Tripura High Court, http://www.thc.nic.in	1470	750000	510.20	4
Kerala High Court, http://www.highcourtofkerala.nic.in	2110	302000	143.13	5
Gujarat High Court, http://www.gujarathighcourt.nic.in	861	101000	117.31	6
Chhattisgarh High Court, http://www.highcourt.cg.gov.in	6020	568000	94.35	7
Karnataka High Court, http://www.hck.gov.in	1250	82700	66.16	8
Orissa High Court,	2320	105000	45.26	9

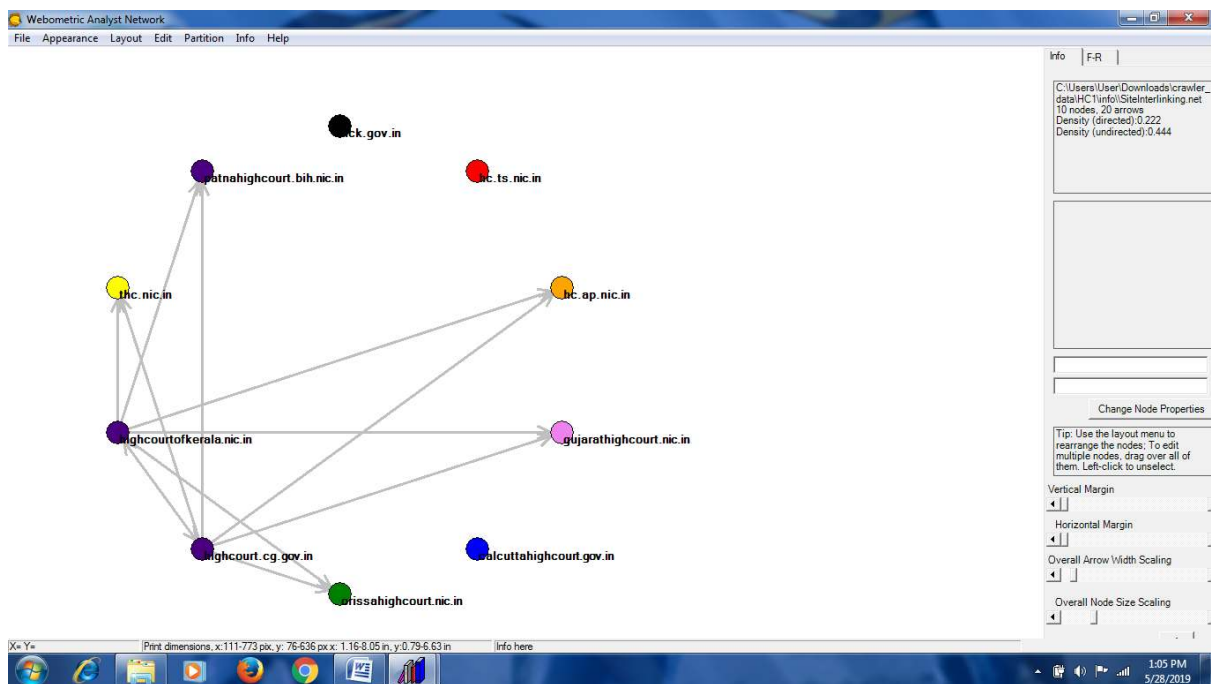
http://www.orissahighcourt.nic.in				
Calcutta High Court, http://www.calcuttahighcourt.gov.in	1950	82900	42.51	10
Jammu and Kashmir High Court, http://www.jkhighcourt.nic.in	3320	130000	39.16	11
Uttarakhand High Court, http://www.highcourtofuttarakhand.gov.in	2760	95100	34.46	12
Sikkim High Court, http://www.highcourtofikkim.nic.in	2030	56100	27.64	13
Madras High Court, http://www.hcmadras.tn.nic.in	1240	34000	27.42	14
Meghalaya High Court, http://www.meghalayahighcourt.nic.in	3330	41300	12.40	15
Rajasthan High Court, http://www.hcraj.nic.in	1850	19100	10.32	16
Manipur High Court, http://www.hcmimphal.nic.in	980	10100	10.31	17
Himachal Pradesh High Court, http://www.hphighcourt.nic.in	1710	16700	9.77	18
Madhya Pradesh High Court, http://www.mphc.in	10900	70200	6.44	19
Jharkhand High Court, http://www.jharkhandhighcourt.nic.in	5080	21500	4.23	20
Punjab and Haryana, http://www.highcourtchd.gov.in	21300	80400	3.77	21
Bombay High Court, http://www.bombayhighcourt.nic.in	40000	107000	2.68	22
Allahabad High Court, http://www.allahabadhighcourt.in	195000	386000	1.98	23

Delhi High Court, http://www.delhihighcourt.nic.in	340000	166000	0.49	24
Gauhati High Court, http://www.ghcazlbench.nic.in	517	186	0.36	25

(NWP=Number of Web Page, LWP=Link of Web Page, SWIF=Simple Web Impact Factor)

The Table-8 illustrates the rank distribution of High courts' websites in India according to their Simple Web Impact Factor (SWIF). Dividing the number of link pages by number of web pages, the Simple Web Impact Factor for each High courts' websites has been calculated. High courts' websites occupies the first place with 41408.45 (Andhra Pradesh High Court) Simple Web Impact Factor. The second and third place goes to Telangana High Court and Patna High Court respectively. Gauhati High Court (SWIF= 0.36) is ranked 25th position.

Figure-1: Link Network Diagram –Links between top ten Websites of High courts in India by SWIF



The Figure-1 reveals that maximum links are shown between Kerala High Court and Chhattisgarh High Court. But Karnataka High Court, Telangana High Court and Calcutta High Court are not linking with one another High Courts.

Table-9: Self Link Web Impact Factor for High courts' Websites in India

Court's Name and URL	NWP	SLWP	SLWIF	Ranked by SLWIF
Meghalaya High Court, http://www.meghalayahighcourt.nic.in	3330	45200	13.57	1
Uttarakhand High Court, http://www.highcourtofuttarakhand.gov.in	2760	1650	0.60	2
Madras High Court, http://www.hcmadras.tn.nic.in	1240	415	0.33	3
Patna High Court, http://www.patnahighcourt.bih.nic.in	721	177	0.25	4
Gauhati High Court, http://www.ghcazlbench.nic.in	517	121	0.23	5
Karnataka High Court, http://www.hck.gov.in	1250	219	0.18	6
Sikkim High Court, http://www.highcourtofsikkim.nic.in	2030	332	0.16	7
Orissa High Court, http://www.orissahighcourt.nic.in	2320	291	0.13	8
Bombay High Court, http://www.bombayhighcourt.nic.in	40000	4710	0.12	9
Manipur High Court, http://www.hcmimphal.nic.in	980	120	0.12	9
Calcutta High Court, http://www.calcuttahighcourt.gov.in	1950	212	0.11	10
Gujarat High Court, http://www.gujarathighcourt.nic.in	861	93	0.11	10
Chhattisgarh High Court, http://www.highcourt.cg.gov.in	6020	532	0.09	11
Kerala High Court,	2110	176	0.08	12

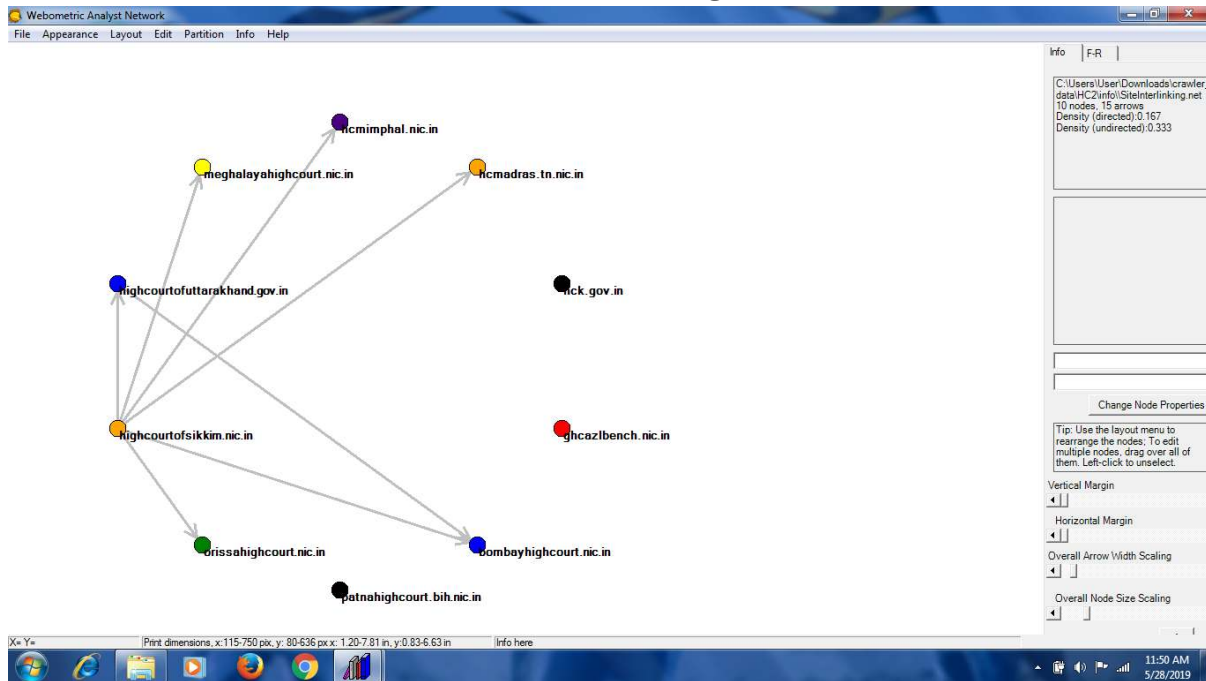
http://www.highcourtofkerala.nic.in				
Rajasthan High Court, http://www.hcraj.nic.in	1850	139	0.08	12
Jharkhand High Court, http://www.jharkhandhighcourt.nic.in	5080	347	0.07	13
Himachal Pradesh High Court, http://www.hphighcourt.nic.in	1710	87	0.05	14
Telangana High Court, http://www.hc.tap.nic.in	202	08	0.04	15
Jammu and Kashmir High Court, http://www.jkhighcourt.nic.in	3320	126	0.04	15
Punjab and Haryana, http://www.highcourtchd.gov.in	21300	856	0.04	15
Tripura High Court, http://www.thc.nic.in	1470	59	0.04	15
Allahabad High Court, http://www.allahabadhighcourt.in	195000	1160	0.01	16
Andhra Pradesh High Court, http://www.hc.ap.nic.in	355	03	0.01	16
Delhi High Court, http://www.delhihighcourt.nic.in	340000	4710	0.01	16
Madhya Pradesh High Court, http://www.mphc.in	10900	88	0.01	16

(NWP=Number of Web Pages, SLWP=Self Link Web Pages, SLWIF=Self Link Web Impact Factor)

The ranking of High courts' websites in India is based on their Self Link Web Impact Factor as shown in the Table-9. Dividing the number of Self Link pages by number of web pages, the Self Link Web Impact Factor for each High courts' websites has been calculated. High courts' websites occupies the first place with 13.57 (Meghalaya High Court) Self Link Web Impact Factor. The second and third place go to Madras High Court and Uttarakhand High Court respectively. Allahabad High Court, Delhi High Court, Andhra Pradesh High Court

and Madhya Pradesh High Court are jointly (SLWIF= 0.01) ranked 16th position i.e. last position.

Figure-2: Link Network Diagram –Links between top ten Websites by High Court websites in India according to SLWIF



Maximum links are between Sikkim High Court and Bombay High Court, and between Uttarakhand High Court and Bombay High Court. But Gauhati High Court, Karnataka High Court and Patna High Court are not linked with one another High Courts.

Table-10: In-Link Web Impact Factor for High courts' Websites in India

Court's Name and URL	NWP	ILWP	RWIF	Ranked by RWIF
Meghalaya High Court, http://www.meghalayahighcourt.nic.in	3330	41200	12.37	1
Gauhati High Court, http://www.ghcazlbench.nic.in	517	134	0.26	2
Uttarakhand High Court, http://www.highcourtofuttarakhand.gov.in	2760	645	0.23	3
Patna High Court, http://www.patnahighcourt.bih.nic.in	721	120	0.17	4
Madras High Court, http://www.hcmadras.tn.nic.in	1240	185	0.15	5

Karnataka High Court, http://www.hck.gov.in	1250	117	0.14	6
Orissa High Court, http://www.orissahighcourt.nic.in	2320	315	0.14	6
Manipur High Court, http://www.hcmimphal.nic.in	980	123	0.13	7
Bombay High Court, http://www.bombayhighcourt.nic.in	40000	4170	0.10	8
Calcutta High Court, http://www.calcuttahighcourt.gov.in	1950	187	0.10	8
Chhattisgarh High Court, http://www.highcourt.cg.gov.in	6020	578	0.10	8
Sikkim High Court, http://www.highcourtofsikkim.nic.in	2030	176	0.09	9
Kerala High Court, http://www.highcourtofkerala.nic.in	2110	167	0.08	10
Himachal Pradesh High Court, http://www.hphighcourt.nic.in	1710	80	0.05	11
Rajasthan High Court, http://www.hcraj.nic.in	1850	99	0.05	11
Telangana High Court, http://www.hc.tap.nic.in	202	08	0.04	12
Punjab and Haryana, http://www.highcourtchd.gov.in	21300	790	0.04	12
Tripura High Court, http://www.thc.nic.in	1470	64	0.04	12
Jammu and Kashmir High Court, http://www.jkhighcourt.nic.in	3320	80	0.02	13
Jharkhand High Court,	5080	78	0.02	13

http://www.jharkhandhighcourt.nic.in				
Allahabad High Court, http://www.allahabadhighcourt.in	195000	1350	0.01	14
Andhra Pradesh High Court, http://www.hc.ap.nic.in	355	03	0.01	14
Delhi High Court, http://www.delhihighcourt.nic.in	340000	3470	0.01	14
Gujarat High Court, http://www.gujarathighcourt.nic.in	861	07	0.01	14
Madhya Pradesh High Court, http://www.mphc.in	10900	82	0.01	14

(NWP=Number of Web Pages, ILWP=In Link Web Pages, ILWIF=In-Link Web Impact Factor)

The data in Table-10 exhibits the rank distribution of High courts' websites in India according to their In-Link Web Impact Factor (RWIF). Dividing the number of In-Link pages by number of web pages, the In-Link Web Impact Factor for each High Courts' websites has been calculated. High courts' websites occupies the first place with 12.37 (Meghalaya High Court) In-Link Web Impact Factor. The Gauhati High Court ranked 2nd position and Uttarakhand High Court ranked 3rd position. The high courts of Allahabad, Andhra Pradesh, Delhi, Gujarat and Madhya Pradesh are jointly (IN-Link WIF= 0.01) ranked 14th position i.e. they occupied last position. Many High courts occupied the same positions.

Figure 3: Link Network Diagram –Links between top ten Websites by High courts' websites in India according to ILWI

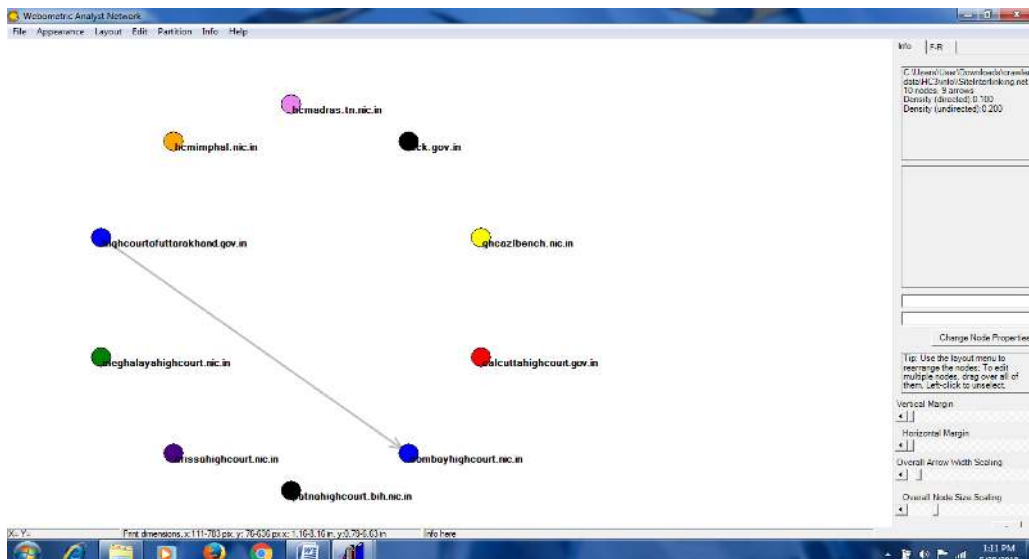


Figure-3 has shown only link between Bombay High Court and Uttarakhand High Court. Other High Courts are not linking with one another.

Table-11: External Link Web Impact Factor for High courts' Websites in India

Court's Name and URL	NWP	ELWP	ELWIF	Ranked by ELWIF
Meghalaya High Court, http://www.meghalayahighcourt.nic.in	3330	40600	12.19	1
Uttarakhand High Court, http://www.highcourtofuttarakhand.gov.in	2760	1880	0.70	2
Madras High Court, http://www.hcmadras.tn.nic.in	1240	221	0.18	3
Patna High Court, http://www.patnahighcourt.bih.nic.in	721	127	0.18	3
Gauhati High Court, http://www.ghcazlbench.nic.in	517	82	0.16	4
Chhattisgarh High Court, http://www.highcourt.cg.gov.in	6020	818	0.14	5
Manipur High Court, http://www.hcmimphal.nic.in	980	120	0.12	6
Bombay High Court, http://www.bombayhighcourt.nic.in	40000	4370	0.11	7
Calcutta High Court, http://www.calcuttahighcourt.gov.in	1950	207	0.11	7
Orissa High Court, http://www.orissahighcourt.nic.in	2320	263	0.11	7
Karnataka High Court, http://www.hck.gov.in	1250	125	0.10	8
Rajasthan High Court,	1850	189	0.10	8

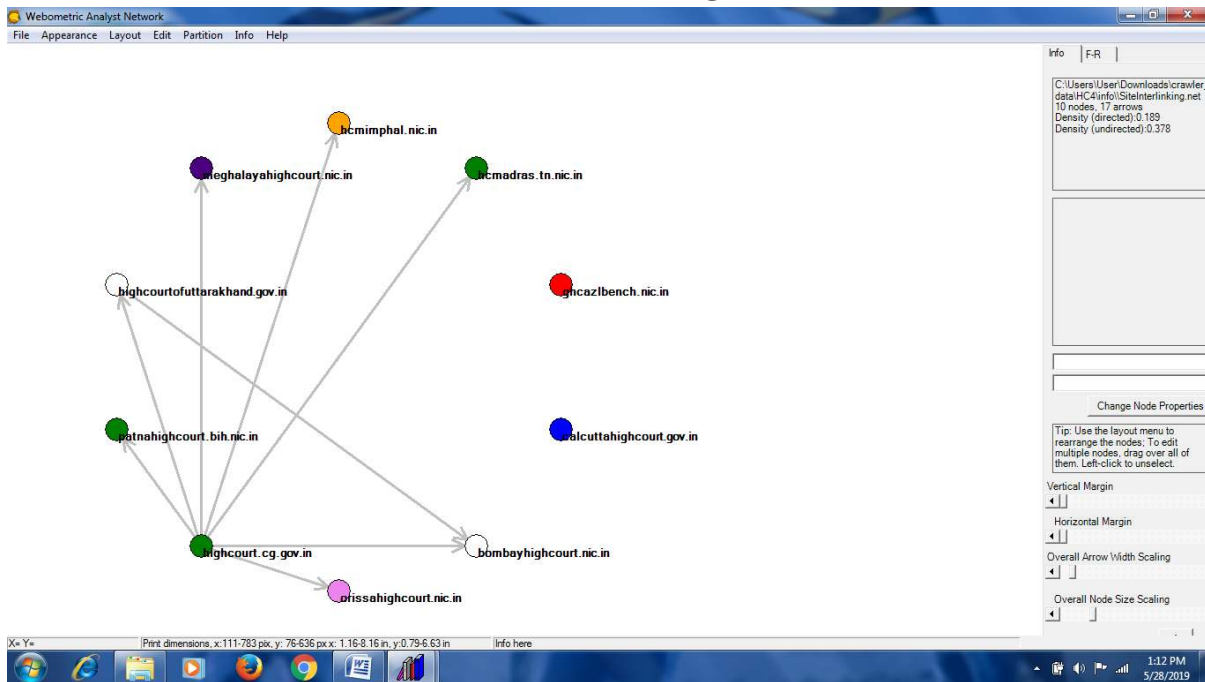
http://www.hcraj.nic.in				
Sikkim High Court, http://www.highcourtofsikkim.nic.in	2030	189	0.09	9
Gujarat High Court, http://www.gujarathighcourt.nic.in	861	69	0.08	10
Kerala High Court, http://www.highcourtofkerala.nic.in	2110	170	0.08	10
Himachal Pradesh High Court, http://www.hphighcourt.nic.in	1710	107	0.06	11
Jammu and Kashmir High Court, http://www.jkhighcourt.nic.in	3320	154	0.05	12
Punjab and Haryana, http://www.highcourtchd.gov.in	21300	1160	0.05	12
Jharkhand High Court, http://www.jharkhandhighcourt.nic.in	5080	180	0.04	13
Tripura High Court, http://www.thc.nic.in	1470	59	0.04	13
Telangana High Court, http://www.hc.tap.nic.in	202	07	0.03	14
Allahabad High Court, http://www.allahabadhighcourt.in	195000	1540	0.01	15
Andhra Pradesh High Court, http://www.hc.ap.nic.in	355	03	0.01	15
Delhi High Court, http://www.delhihighcourt.nic.in	340000	4790	0.01	15
Madhya Pradesh High Court, http://www.mphc.in	10900	88	0.01	15

(NWP=Number of Web Pages, ELWP=External Link Web Pages, ELWIF=External Link Web Impact Factor)

Table-11 reveals the rank distribution of High courts' websites in India according to their External Link Web Impact Factor (ELWIF). Dividing the number of External Link Web

pages by number of web pages, the External Link Web Impact Factor for each High courts' websites has been calculated. High courts' websites occupies the first place with 12.19 (Meghalaya High Court) Revised Web Impact Factor. The Uttarakhand High Court ranked 2nd position and Madras High Court ranked 3rd position. The high courts of Allahabad, Andhra Pradesh, Delhi and Madhya Pradesh jointly (ELWIF= 0.01) ranked 15th position i.e. they occupied last position. Many High courts occupied the same positions.

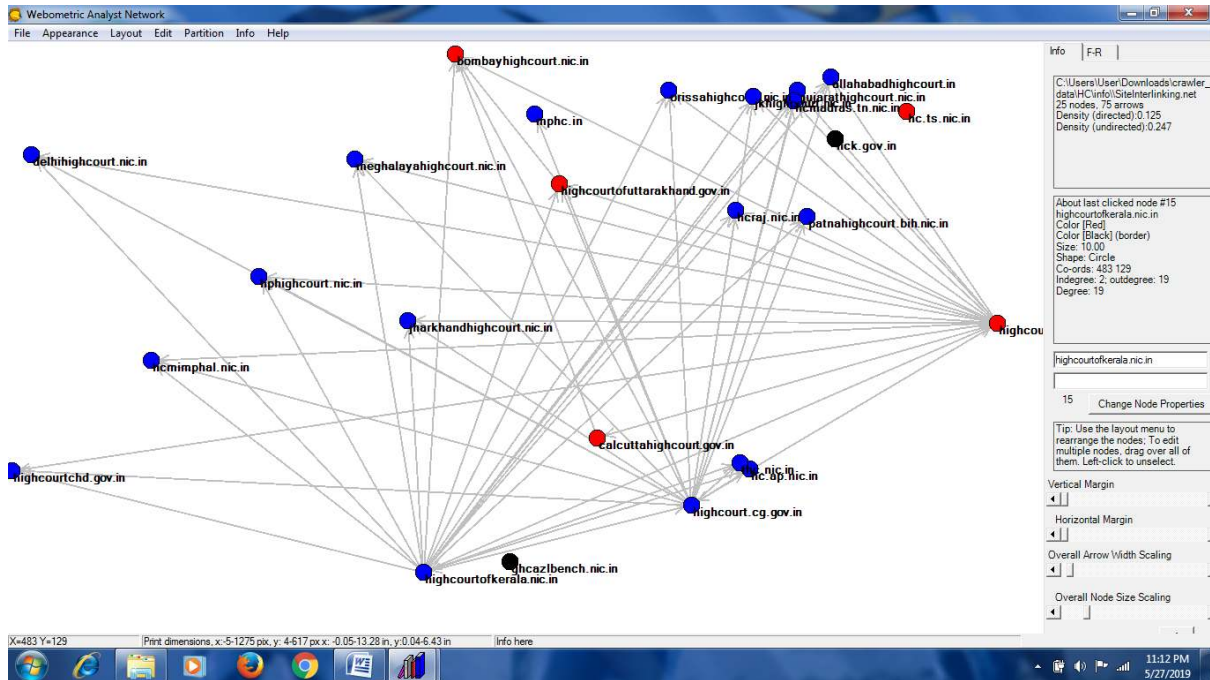
Figure-4: Link Network Diagram –Links between top ten Websites by High courts' websites in India according to ELWIF



The Figure-4 has shown the maximum links between Chhattisgarh High Court and Bombay High Court and between Uttarakhand High Court and Bombay High Court. But Gauhati High Court and Calcutta High Court are not linking with one another High Courts.

LINK NETWORK OF HIGH COURTS' WEBSITES IN INDIA

Figure-5: Link Network Diagram –Links between Two or More Websites by High courts' websites in India



The Figure-5 has shown 25 High courts' websites link network in India. maximum link from Chhattisgarh High Court, Kerala High Court and Punjab and Sikkim High Court (highcourtofsikkim.nic.in).

Alternative Document Model (ADM)

There are two ways the collect the data for analysis for webometric i.e. (i) commercial search engine (ii) academic web crawler.

Generally the ADM have four parts:

1. Page level: Original link data is transformed into page in-links data and page out-links data of High Courts' Websites.
2. Directory level: Original link data is transformed into directory in-links data and directory out-links data of High Courts' Websites.

3. Domain level: Original link data is transformed into domain in-links data and domain out-links data of High Courts' Websites.
4. Site level: Original link data is transformed into site in-link data and site out-link data of High Courts' Websites in India.

Alternative Document Model (ADM) is to collect the data of link pages for High Courts' Websites in India. The raw data is collected using web crawler, i.e. SocSciBot4 for High Courts' Websites and ADM count summary for selected websites of High Courts' Websites in India in Table-12.

Table-12: ADM counts summary for High Courts' Websites in India (Collection date 08/07/2019)

<i>Name/URL</i>	<i>Page inlinks</i>	<i>Directory inlinks</i>	<i>Domain inlinks</i>	<i>Site inlinks</i>	<i>Page outlinks</i>	<i>Directory outlinks</i>	<i>Domain outlinks</i>	<i>Site outlinks</i>
hc.ap.nic.in	2	2	2	2	0	0	0	0
hc.ts.nic.in	0	0	0	0	0	0	0	0
patnahighcourt.bih.nic.in	2	2	2	2	0	0	0	0
thc.nic.in	2	2	2	2	0	0	0	0
highcourtofkerala.nic.in	40	5	2	2	19	19	19	19
gujarathighcourt.nic.in	42	7	3	3	0	0	0	0
highcourt.cg.gov.in	40	5	2	2	24	23	20	20
hck.gov.in	0	0	0	0	0	0	0	0
orissahighcourt.nic.in	41	6	3	3	0	0	0	0
calcuttahighcourt.gov.in	39	4	1	1	1	1	1	1
jkhighcourt.nic.in	41	6	3	3	0	0	0	0
highcourtofuttarakhand.gov.in	41	6	3	3	1	1	1	1
highcourtofsikkim.nic.in	2	2	2	2	663	68	17	17
hcmadras.tn.nic.in	43	7	3	3	0	0	0	0

meghalayahighcourt.nic.in	41	6	3	3	0	0	0	0
hcraj.nic.in	41	6	3	3	0	0	0	0
hcmimphal.nic.in	41	6	3	3	0	0	0	0
hphighcourt.nic.in	41	6	3	3	0	0	0	0
mphc.in	1	1	1	1	0	0	0	0
jharkhandhighcourt.nic.in	41	6	3	3	0	0	0	0
highcourtchd.gov.in	41	6	3	3	0	0	0	0
bombayhighcourt.nic.in	44	9	5	5	0	0	0	0
allahabadhighcourt.in	41	6	3	3	0	0	0	0
delhihighcourt.nic.in	41	6	3	3	0	0	0	0
ghcazlbench.nic.in	0	0	0	0	0	0	0	0

(Source: SocSciBot4, 12/05/19)

ADM counts summary for High Courts' Websites in India during July 2019 is been reflected in Table-12. The details in the table are extracted using SocSciBot4. The link network diagram of High Courts' Websites in India has been reflected in the Figure-5.

Conclusion

A Webometric study of High courts' websites in India is an unexplored area of webometric study. This study gives a clear idea about the information provided by the websites of the 25 High courts' websites. All data collection of High courts' websites from Google search engine. Other search engines like, Yahoo, Hotbot, Exalead and Bing are not perfect to collect data of high courts' websites due to not supported all keywords. So, all data collection have been done using Google search engine. Finally I have done ranking distribute of High courts' websites in India according to their Web Impact Factor (WIF). The numbers of Link Web page divided by number of web pages, Web Impact Factor for each high courts' websites has been calculated. These study works open the door to further studies of other new areas of the webometric analysis.

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