Web Page Analysis of National Institute of Pharmaceutical Education and Research (NIPERs) Websites in India: A Webometric Study

Manish Kumar Yadav
Librarian
S.P.M. Government P.G. College
Prayagraj, India
Email: librarian.spmcollege@gmail.com

Dr. Rajani Mishra*
Associate Professor
Department of Library & Information Science
Banaras Hindu University
Varanasi, India
Email: rajanimishra5@gmail.com

ABSTRACT

Websites are the medium for getting information in one click from anywhere across the globe at any time. Thus it became very essential to assess the websites for the better performance. Webometrics is the study which helps us to know the overall health of any website and with the result of webometric study we can improve a particular website in terms of simple web impact factor, internal web impact factor and external web impact factor. Webometrics is the quantitative analysis of web phenomena, drawing upon informetric methods and typically addressing problems related to bibliometrics. The primary aim of this study is to find out the total page size of the NIPER websites and how much time it takes to load on the web browser, to discover the global and national ranking of the NIPER websites, to find out the domain authority and page authority of the websites, to calculate the number of web pages, internal, external and total links of selected NIPER websites, to calculate the Simple WIF, Internal link WIF, External link WIF and rank them accordingly. In this paper all the National Institute of Pharmaceutical Education and Research (NIPER) websites in India are scanned and it is found that NIPER Raebareli is the best ranked among all the NIPER websites participated in this study in terms of load time of website. It is also found that NIPER Guwahati has best global ranked website and NIPER Ahmedabad is best ranked Indian website according to SEO Alexa ranking system. The website of NIPER Mohali examined in this study and found rank one in terms of Web Impact Factor among all the NIPER websites in India.

KEYWORDS: Webometrics, NIPER, Web Page, Domain, Ranking, Web Impact Factor, Internet, SEO, Search Engine, Page Authority.

INTRODUCTION

Nowadays internet became the essential part of everyone's life. It acts as a medium for getting information in no time from anywhere across the globe. The World Wide Web (WWW) is a system of interlinked hypertext documents accessed via the Internet. With a web browser, one can view web pages that may contain text, images, videos and other multimedia, and navigate between them via hyperlinks (Webopedia). Tim Berners-Lee was the person who invented the World Wide Web in 1989. All the websites which are available in public domain for the access are collectively constitute the World Wide Web. A website is a collection of webpage interlinked with each other.

WEBOMETRICS

Basically the Webometrics (sometime also called Cybermetrics) is the quantitative approach which measures the knowledge available through World Wide Web or study of web related phenomena. According to Björneborn and Ingwersen (2004), the definition of webometrics is "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." The term webometrics was first coined by Almind and Ingwersen (1997).

National Institute of Pharmaceutical Education and Research

National Institute of Pharmaceutical Education and Research (NIPER) are the institutes in the field of pharmaceutical sciences with a proclaimed objective of becoming a centre of excellence for advanced studies and research in pharmaceutical sciences. The Government of India has declared NIPER as an 'Institute of National Importance'. It is an autonomous body set up under the aegis of Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, India (Wikipedia). Government of India has established the first NIPER in Mohali, Punjab with the aim discussed above.

REVIEW OF LITERATURE

Ramalingam and Nachiappan (2018) have analyzed the CSIR institutes websites and found that all the CSIR institutes have their websites and among them Industrial Toxicology Research Centre stands first in ranking based on the Simple Web Impact Factor. It is also found that Institute of Microbial Technology has highest number of web pages among all the 41 CSIR institutes in India.

Sujithai and Jeyshankar (2013) found that IIT Bombay has most number of web pages among all the IITs in India and IIT Patna got first position & IIT Mandi got last position on the basis of simple web impact factor. They also stated that IIT websites provide better medium to get information rather than physically in the institutions.

Thanuskodi (2011) stated that most of the engineering colleges in Tamil Nadu are not aware of web ranking; they do not perceive its necessity to make websites active and rich in a way to be attractive and usable for students, professors, both in Tamil Nadu and global internet users. On the other hand, using traditional methods of publishing scientific productions and information resources in most of the private engineering college causes lower inlinks and WIFs.

Brahma and Verma (2018) stated in their study that a website provides a quick and easy way of communicating information between information providers and information seekers. They observed most of the public library website has very low WIF so they need to improve it.

Stephen (2019) in his study stated that on the basis of traffic rank in India North Eastern Hill University got highest rank among Central Universities in North East region. He also stated that commercial SEO are changing rapidly and it is necessary to analyze and make necessary change in the websites for better performance for the user.

SCOPE OF THE STUDY

The present study explores the seven websites of ***National Institute of Pharmaceutical Education and Research (NIPER) in India.*** Table 1 contains the details of all the NIPERs in India with their establishment year, websites and their mentor institutes.

Sl No	NIPER	Mentor Institute	Establishment Year	Website
1.	NIPER , Mohali	No Mentor institute	1998	niper.gov.in
2.	NIPER , Hajipur	Rajendra Memorial Research Institute of Medical Science (RMRIMS-Patna) under ICMR	2007	www.niperhajipur.ac.
3.	NIPER , Hyderabad	CSIR-Indian Institute of Chemical Technology, Tarnaka, Hyderabad	2007	www.niperhyd.ac.in
4.	NIPER , Kolkata	CSIR-Indian Institute of Chemical Biology, Kolkata	2007	www.niperkolkata.edu.in
5.	NIPER , Guwahati	Guwahati Medical College, Guwahati	2008	www.niperguwahati.ac.in
6.	NIPER , Raebareli	CDIR-Central Drug Research Institute, Lukhnow	2008	niperraebareli.edu.in
7.	NIPER , Ahmedabad	B V Patel PERD Center, Ahmedabad	2007	www.niperahm.ac.in

Table 1: Details of NIPERs in India

OBJECTIVES OF THE STUDY

- To find out the page size and load time of the NIPER websites.
- To discover the global and national ranking of the NIPER websites.
- To find out the domain authority and page authority of the websites.
- To calculate the number of web pages, internal, external and total links of selected NIPER websites.

- To calculate the Simple WIF, Internal link WIF, External link WIF and rank them accordingly.

METHODOLOGY

An observation method was adopted for this study. All the data were collected from the NIPERs websites using an online webpage analyzer tool (www.moz.com). Data were fetched and tabulated using MS-Excel and further used for findings of the study. For calculating the total number of web pages (indexed by Google) of NIPERs websites a syntax ("site:domain name") has been used to fetch the desired data from the search engine. SEO Alexa an online tool is used for the global and national ranking of the NIPER websites.

Formula for calculation of Web Impact Factors-

Simple WIF= C/D

Internal WIF= A/D

External WIF= B/D

A=Total No. of Internal Links

B=Total No. of External Links

C=Total No of Links

D=Total No of Web pages of NIPER Website

DATA ANALYSIS

Page size and Load time of NIPER Websites

Figure-1 describes the distribution of page size and load time of the websites of NIPER in India. It can be seen in figure-1 that NIPER Hajipur has heaviest size of website with 16.9 MB followed by NIPER Ahmedabad with page size of 14.9 MB. NIPER Kolkata takes 38.47 seconds to load the website that is not the fascinating thing. NIPER Raebareli with load time of 1.71 seconds has got best position in table and NIPER Mohali got the second rank with load time of 2.25 seconds.

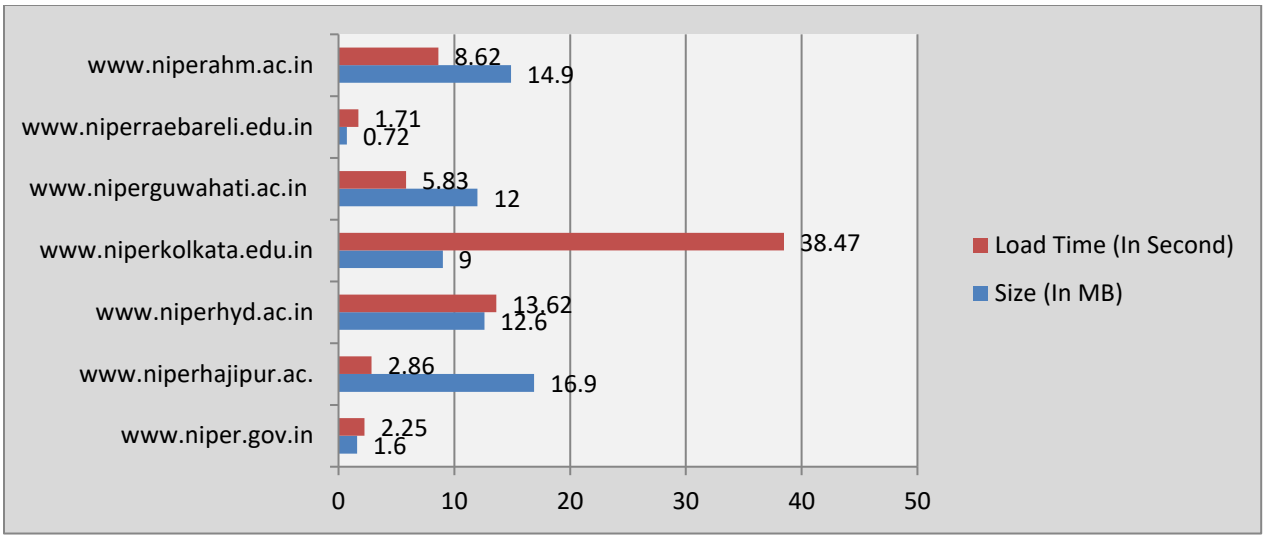

Figure 1: Page size and Load time of NIPER Websites

Global Ranking of NIPER Websites

For the better promotion of the website its ranking is very important indicator. Ranking of a website is based on a combined measure of page views and unique site users. Popularity ranking of NIPER websites is portrayed through table-2. Alexa ranking system is used for the global and Indian ranking of NIPER websites.

Heitzman (2018) Stated that alexa is a global ranking system that utilizes web traffic data to compile a list of the most popular websites, the Alexa Rank. The lower the Alexa rank, the more popular the website (for example, a site with the rank of 1 has the most visitors on the internet). Alexa itself has been around since 1996, but was shortly thereafter acquired by Amazon in 1999.

Sl No.	NIPER	Global Rank	Indian Rank
1.	Guwahati	469,775	69,747
2.	Hajipur	2,336,583	N/A
3.	Hyderabad	593,378	129,185
4.	Kolakata	599,595	N/A
5.	Mohali	525,620	N/A
6.	Raebareli	4,039,135	N/A
7.	Ahmedabad	511,603	43,931

Table 2: Ranking of NIPER Websites (As on 14th April 2020)

If we go through above table, it is clearly seen that among all the NIPER websites NIPER Guwahati holds the best global rank with 469775. NIPER Ahmedabad secured the best ranking

with 43,931 in India followed by NIPER Guwahati with 69,747. National ranking of many other websites of NIPER is not ranked by Alexa.

Domain and Page Authority

Domain Authority is a search engine ranking score developed by Moz that predicts how well a website will rank on search engine result pages. A Domain Authority score ranges from one to 100, with higher scores corresponding to a greater ability to rank.

Page Authority is a score that predicts how well a specific page will rank on search engine result pages. Page Authority scores range from 1 to 100, with higher scores corresponding to a greater ability to rank.

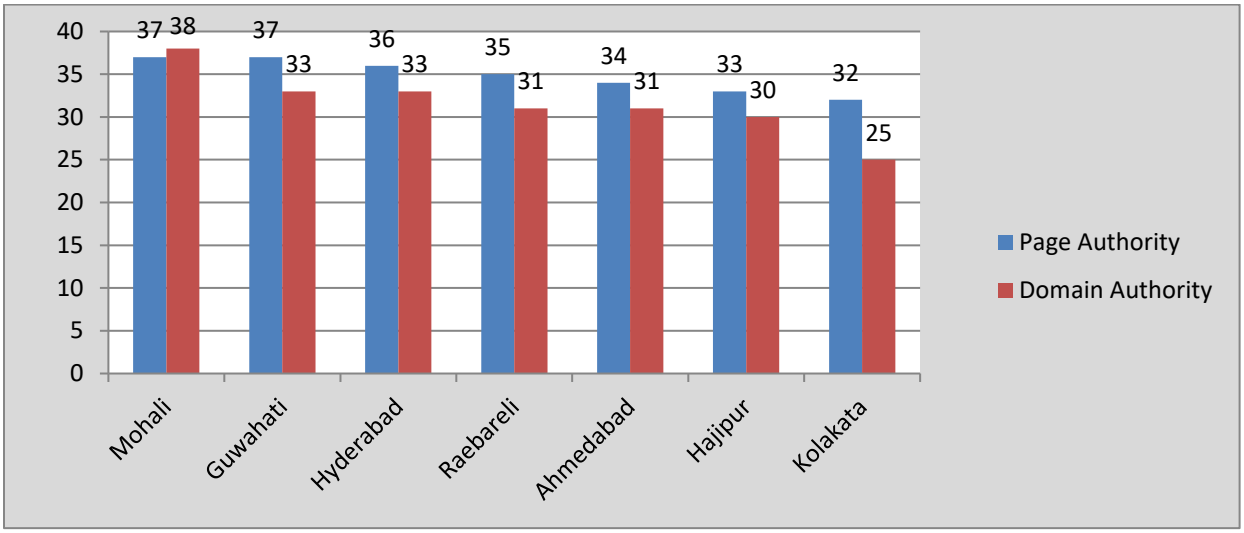

Figure 2: Distribution of Domain and Page Authority

It can be observed from the figure 2 that the website of NIPER Mohali having domain authority 38 ranks highest while NIPER Kolkata obtained lowest rank 25 out of a total of 100 points. If we see page authority it can be easily observed that, the websites of NIPER Mohali and Guwahati jointly ranks first with page authority score of 37. Again the last rank is secured by NIPER Kolkata with score of (25) out of 100 point scale of page authority.

Number of web pages, internal, external and total link pages of NIPERs websites

Table 3 illustrates the total number of web page, total internal links, total external links and total links of NIPER websites in India. It is clearly seen that NIPER Mohali has highest number of web pages in its website i.e. 1090, followed by NIPER Ahmedabad with 971 web pages and NIPER Hajipur has least number of web pages. Further it can be also seen that NIPER Ahmedabad secured the first position with 40,986 internal links and NIPER Kolkata has lowest number of internal links with 861 in its website. In terms of total external links NIPER Mohali

occupied the top position with 154,715 external links, followed by NIPER Kolkata with 4264 external links and NIPER Hyderabad with 2018 external links. NIPER Mohali has highest number of links in its website i.e. 159,831, followed by NIPER Ahmedabad with 42404 and NIPER Hyderabad with 16,905 total links.

Sl No.	NIPER	Total No. of Web Page (As per Google indexing)	Total No. of Internal Links	Total No. of External Links	Total Links
1.	Guwahati	225	1398	1082	2480
2.	Hajipur	192	4708	662	5370
3.	Hyderabad	847	14887	2018	16905
4.	Kolakata	243	861	4264	5125
5.	Mohali	1090	5116	154715	159831
6.	Raebareli	310	1027	1625	2652
7.	Ahmedabad	971	40986	1418	42404

Table 3: Distribution of web page, internal links, external links and total links of NIPER websites

Web Impact Factors of NIPER websites

Table-4 and Figure-3 focuses on the Web Impact Factor of NIPER websites in India. It can be easily seen that the SWIF of NIPER Mohali is highest with 146.6 SWIF score followed by NIPER Ahmedabad with 43.67 SWIF score and NIPER Hajipur with 27.97 SWIF score. NIPER Ahmedabad got the top position in terms of IWIF with 42.21 IWIF score, followed by NIPER Hajipur with 24.52 score and NIPER Hyderabad with 17.58 IWIF score. On the basis of EWIF again NIPER Mohali got highest score with 141.9 EWIF score afterwards NIPER Kolkata with 17.55 and NIPER Raebareli with 5.24 EWIF score.

Sl No.	NIPER	Internal WIF	External WIF	Simple WIF	Ranked by SWIF
1.	Mohali	4.69	141.9	146.6	1
2.	Ahmedabad	42.21	1.46	43.67	2
3.	Hajipur	24.52	3.45	27.97	3
4.	Kolkata	3.54	17.55	21.09	4
5.	Hyderabad	17.58	2.38	19.96	5
6.	Guwahati	6.21	4.81	11.02	6
7.	Raebareli	3.31	5.24	8.55	7

Table 4: Distribution of Web Impact Factors of NIPER Websites in India

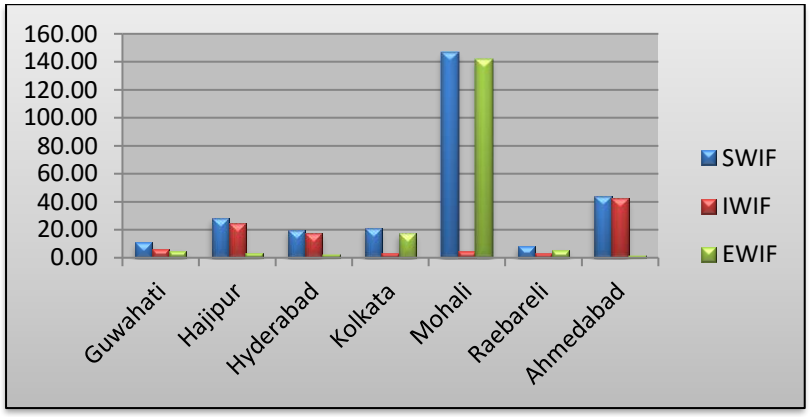

Figure 3 Distribution Web Impact Factors of NIPER Websites in India

CONCLUSION

A website heavy in size comes with many problems like more load time in comparison to other websites etc. NIPER Hajipur has heaviest website among all the NIPERs in India and NIPER Raebareli has very small website in terms of size in MB. Due to small in size website of NIPER Raebareli takes less time to load on the web browser. NIPER Mohali with highest simple web impact factor indicates that their website is best among other NIPERs in India. Improvement is suggested for most of the NIPER websites. This study has been investigated and there is

possibility to future research in this field. The result of this study will be helpful for the improvement of all these websites in future.

REFERENCES

1. *Björneborne, L., & Ingwersen, P. (2004). Toward a Basic Framework for Webometrics, Journal of the American Society for Information Science and Technology, 55 (1), 1216 - 1227.*
2. *Almind T.C., & Ingwersen, P. (1998). Informetric Analysis on the World Wide Web: Methodological Approaches to 'Webometrics', Journal of Documentation, 53(4), 404 - 426.*
3. *Ingwersen, P. (1998). The calculation of web impact factors, Journal of Documentation, 54 (2), 236 - 243.*
4. *Ramalingam, Jeyshankar and N, Nachiappan. (2018). Council of Scientific and Industrial Research (CSIR - India) Institutes Website: A Webometric Analysis. Library Philosophy and Practice (e-journal). https://digitalcommons.unl.edu/libphilprac/2098/*
5. *Maria Sujitha, I, & Jeyshankar, R. (2013). Web page analysis of Indian Institute of Technologies' (IITs) websites: A webometric study. International Journal of Digital Library Services, 3(1), 55-65. http://www.ijodls.in/uploads/3/6/0/3/3603729/55-65313.pdf*
6. *Thanuskodi, S. (2011). Webometric Analysis of Private Engineering College Websites in Tamil Nadu. J Communication, 2(2): 73-81. https://www.tandfonline.com/doi/full/10.1080/0976691X.2011.11884784*
7. *Brahma, Krishna and Verma, Manoj Kumar (2018). Web Presence of Selected Iconic Public Libraries' of India: Webometric Analysis. International Journal of Information Studies, 10(4), 127-135.*
8. *Stephen,G. (2019). Webometric analysis of Central universities in North Eastern region, India. A Study of Using Alexa Internet. Library Philosophy and Practice (e-journal). https://digitalcommons.unl.edu/libphilprac/3041/*
9. *Heitzman, Adam (2018, April 1). What is the value of alexa rank in SEO? [Blog Post]. Retrieved from (https://www.highervisibility.com/blog/what-is-the-value-of-alexa-rank-in-seo/)*
10. *Wikipedia (n.d.). Retrieved April, 2020, from https://en.wikipedia.org/wiki/National_Institute_of_Pharmaceutical_Education_and_Research*