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## Webpage Analysis of Indian Institute of Management (IIM) and Indian Institute of Technology (IIT) : A Webometric Study

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**Webpage Analysis of Indian Institute of Management (IIM) and  
Indian Institute of Technology (IIT) : A Webometric Study**

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**Abstract:**

The purpose of this research is to look at the website analysis of the 43 Indian institutions (IIT and IIM). The research focused on webometric analysis, which looked at the domain name, domain age, external and internal linkages, as well as all three types of web effects on all responder websites. The study also looks at how stakeholders from both inside and outside the country use websites. The goal of this study is to look into the webometric elements of India's all IIT and IIM institutions. A ranking of the university websites based on several webometric variables was attempted. The domain age, domain extension, internal link, external link, page speed, web impact factors and Alexa Ranking of the websites were all calculated in the study.

**Keyword:**

Webometrics, IIT, IIM, Indian Institutes of Management, Indian Institutes of Technology, Domain Extension, Link Analysis, Web Impact, WISER Ranking, Alexa Ranking.

**Introduction:**

Websites serve as a global portal to academic institutions' information vaults as well as a public interface for companies all over the world. Researchers are concerned about gauging the influence of websites, which are increasingly becoming the key source of information about a university's research and academic achievements (Khan and Idress, 2014). The active presence of an academic institution's website is vitally significant for information searchers such as admission candidates, current students, faculty members, and other stakeholders. In the age of the internet, university websites are extremely important to their stakeholders, and there is a need to review their placement (Islam, 2011). Webometrics is the quantitative study of web-related phenomena. With the raw data offered by viable search engines, the webometrics study may be applied to the web. Even though Larson, a pioneer in his own right, recognised the basic issue with his first exploratory link structure study and the first pure informetrics analysis of the web, Almind and Ingwersen coined the term "webometrics" to define measurable web studies (Almind and Ingwersen, 1997; Larsen, 1996). Webometrics rating is a method of assessing websites based on a set of composite visibility and activity indicators (Khamala, Makori, and Njiraine, 2018). Webometric research, according to Bjorneborn&Ingwersen (2004), is the study of web page content, web link structure, web usage, and web technology. Webometric is the study of the quantitative aspects of the development and use of information resources, structures, and technologies on the web, using bibliometric and info metric approaches (Varadharajalu&Dhanavandan, 2017). In each country, academic websites are the most important Internet communication tools. A university's website and web accessibility, as well as its online presence, are the most crucial factors in its success. As a result, assessing their internet presence is equally as crucial as assessing their academic and research accomplishments (Farzaneh et al., 2009). Webometrics has shown that the statistical analysis utilised in academic literature can be used to the study of link analysis on the Internet, with promising results obtained under controlled conditions. This is also consistent with research that attempted to measure search engine coverage bias by constructing a sample of sites and examining the possible causes of differences in search engine results, ultimately concluding that a site's visibility affects its coverage by search engines, with the latter being measured by the number of links to it. Webometrics is a new field of research in Library and Information Science that applies quantitative bibliometric methodology to the 3Ds of the web's distributed, diverse, and dynamical information space, such as web page content, link structures, search engine and user searching and browsing behaviour.

Using commercial search engines, the citation pattern might be leveraged to give raw data on the web. The tactics that should be used are determined by the purpose of web evaluation. The most successful evaluation procedures are user testing and professional review, but automation and Web analytics technologies can provide a preliminary assessment of the website's status. Similarly, if you're interested in Web ranking and traffic statistics, the subject of the review is Web assessment methods; thus, employing a Web analytics tool like Alexa is the ideal way to go. Alexa Internet is the most generally used tool for Analytics websites that offer a free, limited-featured evaluation service.

### **Alexa Internet Tool:**

Alexa, a California-based subsidiary of Amazon.com (bought by Amazon in 1999), was founded in 1996 and specializes in supplying commercial web traffic data obtained through various toolbars and web browser plugins. Providing a database that served as the foundation for the establishment of the Wayback Machine and the creation of numerous search capabilities are two of Alexa's most famous earlier activities (now largely discontinued). However, their 'Alexa Rank' - a statistic that ranks websites in order of popularity or 'how [good] a website is doing' over the last three months – is arguably what they're best known for.

Alexa ranks websites based on the number of visitors they receive. Alexa's traffic estimates are based on a large sample of millions of internet users around the world. Alexa collects traffic statistics from machines that have the Alexa toolbar installed on them. Alexa offers two different traffic rankings. The first is the site's rank according to visitors from the country, and the second is the site's global rank, which is based on visitors from all over the world. Alexa monitors more than 30 million websites. The Alexa traffic rank for the previous three months is used to sort the results.

### **Literature Review:**

(Noruzi, 2005) looked on the Internet's impact on Iranian Universities. For link counts, he used the AltaVista search engine. Overall, Iranian university websites have a lower Inlinks web impact factor, according to the study. The study also discovered that there was a substantial correlation between the number of back links to English language pages and the number of back links to regional languages, indicating that regional languages do not capture the attention of the World Wide Web. (Jati& Dominic, 2017) “The webometric ranking system is currently one of the most widely used methods to rank website quality including for university websites”.

(Nwagwu&Agarin, 2008) looked at data from 30 Nigerian colleges on web links. According to the statistics, 81.2 percent of the links were inbound, while the remaining 18.8% were outbound. It also shows that websites appear to link more with non-academic websites and have a low degree of deployment for knowledge sharing and dissemination.

The webometrics research of Nigerian Institutes was investigated by (Pechnikov&Nwohiri, 2012). The study focused on Nigeria's academic web presence as well as the structure of Nigeria's academic web. For calculating outlinks and assessing website sizes, they employed a beta version of the BeeBot crawler. There were 1054 HTML pages and 98 outlinks from a total of 97 Institutes, according to the study.

Webometrics study of Iranian medical Institutes (Tafaraji et al., 2014) evaluated web visibility, size, and rich files. Tehran University had the most web pages and 14495 rich files, according to the study's findings, while Jiroft University of Medical Science had the lowest. They also found a substantial association between webometrics rank and university rank, which is favourable, and made recommendations to improve Iranian medical Institutes' web presence.

A few other webometrics studies have been undertaken in India utilising various webometrics techniques (Jayshankar and Babu, 2009; Jalal et al., 2009; Babu et al., 2010; Parmar and Mandalia, 2016).

In a paper titled "Observing the Dynamics of the Online News Ecosystem: News Diffusion Processes among German News Websites," Buhl et al (2016) admit that the online news product is driven by the velocity of reports and variations in the news stream's contrast in the online news ecosystem. However, these two topics are diametrically opposed in the report, and there are few studies on the dynamic of news streams at the ecosystem level. An method is proposed for the performance and dynamic of the news diffusion process among online news websites, taking into account applied techniques for automatic content analysis and massive data of online news content. A few reasoning approaches based on the cover of urgent news with high urgency and imitation from online news presenters are analysed for the velocity of online news product.

In their study, Naheem and Rao (2016) used the well-known programme "Alexa Internet" to assess the eight main Telugu newspaper websites from the state of Andhra Pradesh. The Alexa databank was searched for each of the newspaper websites, and pertinent data was retrieved. These numbers were also compiled and evaluated. The findings of this study demonstrate that the websites of the newspaper "Eenadu" performed admirably in most areas, including the greatest traffic rank in both local and global searches, daily time spent on site by visitors, number of links, and the biggest number of foreign users. "Sakshi" has the highest daily average number of pages visited and the lowest bounce rate. Andhra Prabha has the fastest download speed. Visalaandhra has the largest percentage of visitors who came through search engines.

(Verma& Brahma, 2017) conducted a webometric analysis of South Asian National Library websites. The National Library of India was discovered to have the greatest domain and page authority. Sri Lanka's national library has the highest internal equity passing link and the highest online impact factor of any library in the world.

(Jhamb&Ruhela, 2017) investigates the websites of public libraries managed by India's Ministry of Culture. Domain and Page Authority, Link Analysis, and Web Impact Factor of Public Library Websites were investigated by the author. The highest domain authority was discovered to be 62. With a simple and external web impact value of 115.8, the Central Secretariat library has the greatest simple and external web impact factor. The largest number of external and internal connections is 6009, while the highest number of internal and internal links is 465, and the highest IWIF is 24.25.

(Varadharajalu, 2017) investigated the Web Impact Factors of Kerala State University Websites. In the Self link Web Impact Factor, the Shree Sankaracharya University of Sanskrit was placed 1(0.0035). In the Self Link Web Impact Factor, the National University of Advanced Legal Studies is ranked 2nd (0.0032). In the External Link Web Impact Factor, Kerala University is ranked 1 (0.00083).

Stephen (2017) uses the Alexa Internet to assess the websites of Ministry of Electronics and Information Technology (Meity) organizations' in India. The report includes the 16 Meity Organizations in India that have an online presence. The research' findings reveal some fascinating information about the organization's webpages. The website of the Unique Identification Development Authority of India (UIDAI) is the most popular and ranks first among all of the organization's websites. It is ranked 572 globally and 29th in India. The websites of the National Informatics Centre (NIC) and the Education Research Network (ERNET) have the greatest bounce rate of 64.5 percent. The UIDAI website has 1154 links. The National Institute of Electronics and Information Technology (NIELIT) website is first among the Meity autonomous bodies, and the NIELIT website is second overall.

A webometric research of 12 University Websites in Jammu and Kashmir (Ahmad &Batcha, 2018) investigates the web impact factor. It was discovered that the Cluster University of Jammu placed first in Jammu and Kashmir's Internal Link WIF of Websites. External Link Web Impact Factor ranked Shri Mata Vaishno Devi University top. Webometrics examination of websites of Indian Institutes with potential for excellence on the criteria individual domain authority, number of web pages, domain authority, equity passing links, link pages, and web impact factor was researched by (Verma& Brahma, 2018). Jawaharlal Nehru University had the highest SWIF score of 201.82, which was logical.

Using the Alexa Internet Tool, Muthuraja and Veerabasavaiah (2018) analysed Kannada News Paper Websites. The study included the top ten Kannada language newspaper websites from the state of Karnataka. Each newspaper's website was searched in the Alexa databank for pertinent information such as traffic rank, pages viewed, speed, links, and bounce %, as well as time on site, search

percentage, and percentage of Indian/foreign users. According to the findings, Vijayakarnataka has the greatest traffic rank in India at 2,255, while Udayavani has the highest traffic rank in the world at 27,903. Vijayakarnataka has the most average amount of pages viewed each day, with visitors spending 12:40 hours every day on the site.

The findings of a study by KokilaHarshanRamanayaka et al. (2018) titled Application of Webometrics Techniques for Measuring and Evaluating Visibility of University Library Websites in Sri Lanka would help librarians evaluate the strengths and weaknesses of their library websites' performance. In general, the successful presence of these library websites on the internet can be passed on as the best by having the right amount of site pages in the website, which affects their deception through web search technologies and, as a result, the quantity of external links received. Meanwhile, libraries with a low number of rich files can use the web to publish more rich files to raise their overall ranking.

Dastani, Panahi, and Sattari (2019) looked at the webometrics of Iranian Medical Sciences Institutes . It was observed that top-ranked colleges, as well as those with the fastest growth, all had what a decent website should include in terms of basic information and beyond. In a nutshell, the findings of this investigation revealed that, with the exception of a small number of Institutes with high-quality websites, others had little impact.

(Anyira&Njoeteni, 2020) investigated three Delta State Polytechnics' web visibility. The findings of the study suggested that a good web policy be developed and implemented at the university level, that the website be promoted through social and academic platforms, and that emphasis be placed on personnel and students participating in the creation of content on the institution's domains.

(Stephen, 2020) used search engine optimization to analyse the LIS link domain's website in India. In the most recent month of December, the analysis discovered that Organic Keywords (9444), Organic monthly traffics (7536), Domain score (24) and LIS links have 5121 back links, of which 247 are non-follow. According to the study, the study's pages SEO score was 84 out of 100.

(Anyira&Idubor, 2020) undertook a systematic webometrics analysis of Nigerian higher education institutions, with the findings recommending that university authorities improve web visibility, increase web content size; upload documents in rich file formats, and improve scholarly research initiatives.

The top 43 university websites in India ranked by NIRF were studied for link analysis, domain analysis, website speed analysis, page and domain authority, web traffic, backlinks and referring domains analysis, traffic rank analysis, and web impact factor analysis. The study also looked at determining the respondent Institutes research production.

## **Objectives:**

The main of this research is to look at the webometrics of Indian university websites. Other specific objectives include:

1. Determining the domain extensions and domain age of the respondent's institute's website, as well as webpage performance and mobile responsiveness.
2. Investigate the domain and page authority, website traffic, backlinks, and referring domains of the respondent's institute's websites.
3. Determine the Alexa traffic rating of the respondent's university websites on a worldwide and Indian scale.
4. To conduct a link analysis and determine the web impact factor of the websites of the respondents' institute's.
5. To look into the research productivity of the Indian institute's that responded.
6. To investigate the relationship between institute's SWIF and NIRF rankings in India.

## **Research Methodology:**

The current research looks at a webometric analysis of the all IIT and IIM websites in India. The study focuses on the 43 Indian universities listed in Table 1 All 43 university websites were observed and domain address information was collected as part of the research technique. For webometrics analysis, many methodologies are used to analyses and rank all institute websites covered in the study. To gather data, a variety of simple SEO tools were used, including whois.com to identify domain age, page speed, and insights to determine page speed on mobile and desktop. Smallseotools.com was used to calculate the total, internal, and external links of websites. The Ahrefs SEO tool was used to find backlinks, referring websites, and website traffic. To determine the website's global and Indian rankings, the researchers used Alexa traffic rank. To estimate the research productivity of the respondent's Institutes, researchers looked at the number of papers published, total citations, total authors, and h-index in the Scopus database. The Page Speed of a website was calculated using the “Developers.google tool” (Google, 2019). Domain Authority is calculated by combining several factors, such as connecting root domains and total links, into a single DA score. “Domain Authority | 2019 SEO Best Practices—Moz,” (Moz, 2019). The association between NIRF ranking and SWIF (Simple web impact factor) and research productivity was investigated using Palisade Stat Tools.



The Web Influence Factor was designed by Peter Ingwersen to determine the impact of a website based on the number of links it receives (Ingwersen 1998). It's a computer programme that calculates, places, evaluates, and structures websites. The three types of web impact factors are as follows:

1. SWIF :(The simple web impact factor)
2. IWIF :(The internal web impact factor)
3. EWIF : (The external web impact factor)

**SWIF:** The following formula was used to determine the simple web impact factor

$$\frac{\text{Totalnumberoflinks}}{\text{TotalnumberofWebpages}}$$

**IWIF:** The following formula was used to determine the internal web impact factor

$$\frac{\text{Totalnumberofinternallinks}}{\text{TotalnumberofWebpages}}$$

**EWIF:** The following formula was used to determine the External web impact factor

$$\frac{\text{Totalnumberofexternallinks}}{\text{TotalnumberofWebpages}}$$

Sr. No	Tools	Data type
1	<a href="https://www.whois.com/whois/">https://www.whois.com/whois/</a>	Domain Name and Registration Date
2	<a href="https://search.google.com/test/mobile-friendly">https://search.google.com/test/mobile-friendly</a>	Page Speed and Mobile Responsive of University Websites
3	<a href="https://websiteseochecker.com/domain-authority-checker/">https://websiteseochecker.com/domain-authority-checker/</a>	Domain and Page Authority
4	<a href="https://ahrefs.com/backlink-checker">https://ahrefs.com/backlink-checker</a> and <a href="https://websiteseochecker.com/website-traffic-checker">https://websiteseochecker.com/website-traffic-checker</a>	Website Traffic,Backlink and Referring Domains
5	<a href="https://www.alexa.com/siteinfo">https://www.alexa.com/siteinfo</a>	University's Website's Alexa Ranks
6	Site: website domain (Search In Google)	Total number of WebPages
7	<a href="https://dnschecker.org/website-link-analyzer.php">https://dnschecker.org/website-link-analyzer.php</a>	Link Analysis (Total Number of Internal link and External Link)

**Results and discussion:**

**Table 1**

**List of IIM & IIT and their websites**

<b>Sr. No</b>	<b>Name</b>	<b>Abbreviation</b>	<b>Estd [14]</b>	<b>State/UT</b>	<b>NIRF Ranking 2020 (Management)</b>	<b>Website</b>	<b>Domain Registrati on Date</b>
1	<a href="https://www.iimcal.ac.in/">IIM Calcutta</a>	IIM-C	1961	<a href="#">West Bengal</a>	3	<a href="https://www.iimcal.ac.in/">https://www.iimcal.ac.in/</a>	28/02/2004
2	<a href="https://iima.ac.in/">IIM Ahmedabad</a>	IIM-A	1961	<a href="#">Gujarat</a>	1	<a href="https://iima.ac.in/">https://iima.ac.in/</a>	14/02/2008
3	<a href="https://www.iimb.ac.in/">IIM Bangalore</a>	IIM-B	1973	<a href="#">Karnataka</a>	2	<a href="https://www.iimb.ac.in/">https://www.iimb.ac.in/</a>	20/07/2007
4	<a href="http://iiml.ac.in/">IIM Lucknow</a>	IIM-L	1984	<a href="#">Uttar Pradesh</a>	4	<a href="http://iiml.ac.in/">http://iiml.ac.in/</a>	28/02/2003
5	<a href="https://iimk.ac.in/">IIM Kozhikode</a>	IIM-K	1996	<a href="#">Kerala</a>	6	<a href="https://iimk.ac.in/">https://iimk.ac.in/</a>	31/03/2004
6	<a href="https://www.iimidr.ac.in/">IIM Indore</a>	IIM-I	1996	<a href="#">Madhya Pradesh</a>	7	<a href="https://www.iimidr.ac.in/">https://www.iimidr.ac.in/</a>	30/09/2004
7	<a href="https://iimshillong.ac.in/">IIM Shillong</a>	IIM-S	2007	<a href="#">Meghalaya</a>	30	<a href="https://iimshillong.ac.in/">https://iimshillong.ac.in/</a>	20/02/2015
8	<a href="https://iimrohtak.ac.in/">IIM Rohtak</a>	IIM-Rohtak	2010	<a href="#">Haryana</a>	21	<a href="https://iimrohtak.ac.in/">https://iimrohtak.ac.in/</a>	29/06/2010
9	<a href="https://iimranchi.ac.in/">IIM Ranchi</a>	IIM-Ranchi	2010	<a href="#">Jharkhand</a>	20	<a href="https://iimranchi.ac.in/">https://iimranchi.ac.in/</a>	27/08/2010
10	<a href="https://iimraipur.ac.in/">IIM Raipur</a>	IIM-Raipur	2010	<a href="#">Chhattisgarh</a>	19	<a href="https://iimraipur.ac.in/">https://iimraipur.ac.in/</a>	14/12/2010
11	<a href="https://www.iimtrichy.ac.in/">IIM Tiruchirappalli</a>	IIM-T	2011	<a href="#">Tamil Nadu</a>	15	<a href="https://www.iimtrichy.ac.in/">https://www.iimtrichy.ac.in/</a>	23/05/2011
12	<a href="http://iimkashipur.ac.in/">IIM Kashipur</a>	IIM-Kashipur	2011	<a href="#">Uttarakhand</a>	33	<a href="http://iimkashipur.ac.in/">http://iimkashipur.ac.in/</a>	9/08/2011
13	<a href="https://www.iimu.ac.in/">IIM Udaipur</a>	IIM-U	2011	<a href="#">Rajasthan</a>	17	<a href="https://www.iimu.ac.in/">https://www.iimu.ac.in/</a>	28/06/2011
14	<a href="https://www.iimnagpur.ac.in/">IIM Nagpur</a>	IIM-N	2015	<a href="#">Maharashtra</a>	40	<a href="https://www.iimnagpur.ac.in/">https://www.iimnagpur.ac.in/</a>	16/04/2015
15	<a href="https://iimamritsar.ac.in/">IIM Amritsar</a>	IIM Amritsar	2015	<a href="#">Punjab</a>	-	<a href="https://iimamritsar.ac.in/">https://iimamritsar.ac.in/</a>	13/07/2015
16	<a href="http://iimbg.ac.in/">IIM Bodh Gaya</a>	IIM-BG	2015	<a href="#">Bihar</a>	-	<a href="http://iimbg.ac.in/">http://iimbg.ac.in/</a>	17/11/2015
17	<a href="http://iimsirmaur.ac.in/">IIM Sirmaur</a>	IIM Sirmaur	2015	<a href="#">Himachal Pradesh</a>	-	<a href="http://iimsirmaur.ac.in/">http://iimsirmaur.ac.in/</a>	6/04/2016
18	<a href="http://iimv.ac.in/">IIM Visakhapatnam</a>	IIM-V	2015	<a href="#">Andhra Pradesh</a>	-	<a href="http://iimv.ac.in/">http://iimv.ac.in/</a>	23/04/2015
19	<a href="https://iimsambalpur.ac.in/">IIM Sambalpur</a>	IIM Sambalpur	2015	<a href="#">Odisha</a>	-	<a href="https://iimsambalpur.ac.in/">https://iimsambalpur.ac.in/</a>	13/07/2015
20	<a href="http://iimj.ac.in/">IIM Jammu</a>	IIM-J	2016	<a href="#">Jammu and Kashmir</a>	-	<a href="http://iimj.ac.in/">http://iimj.ac.in/</a>	20/01/2017

21	<a href="#">IIT Kharagpur</a>	IITKGP	1951	<a href="#">West Bengal</a>	1673	<a href="http://www.iitkgp.ac.in/">http://www.iitkgp.ac.in/</a>	23/02/2004
22	<a href="#">IIT Bombay</a>	IITB	1958	<a href="#">Maharashtra</a>	1204	<a href="https://www.iitb.ac.in/">https://www.iitb.ac.in/</a>	28/02/2004
23	<a href="#">IIT Madras</a>	IITM	1959	<a href="#">Tamil Nadu</a>	1054	<a href="https://www.iitm.ac.in/">https://www.iitm.ac.in/</a>	28/02/2003
24	<a href="#">IIT Kanpur</a>	IITK	1959	<a href="#">Uttar Pradesh</a>	942	<a href="http://www.iitk.ac.in/">http://www.iitk.ac.in/</a>	28/02/2004
25	<a href="#">IIT Delhi</a>	IITD	1961	<a href="#">Delhi</a>	1152	<a href="https://www.iitd.ac.in/">https://www.iitd.ac.in/</a>	28/02/2003
26	<a href="#">IIT Guwahati</a>	IITG	1994	<a href="#">Assam</a>	795	<a href="https://www.iitg.ac.in/">https://www.iitg.ac.in/</a>	31/08/2003
27	<a href="#">IIT Roorkee</a>	IITR	1847	<a href="#">Uttarakhand</a>	1218	<a href="https://www.iitr.ac.in/">https://www.iitr.ac.in/</a>	31/05/2004
28	<a href="#">IIT Ropar</a>	IITRPR	2008	<a href="#">Punjab</a>	292	<a href="https://www.iitrpr.ac.in/">https://www.iitrpr.ac.in/</a>	14/10/2008
29	<a href="#">IIT Bhubaneswar</a>	IITBBS	2008	<a href="#">Odisha</a>	437	<a href="https://www.iitbbs.ac.in/">https://www.iitbbs.ac.in/</a>	9/01/2009
30	<a href="#">IIT Gandhinagar</a>	IITGN	2008	<a href="#">Gujarat</a>	226	<a href="https://iitgn.ac.in/">https://iitgn.ac.in/</a>	1/12/2008
31	<a href="#">IIT Hyderabad</a>	IITH	2008	<a href="#">Telangana</a>	425	<a href="https://www.iith.ac.in/">https://www.iith.ac.in/</a>	8/08/2008
32	<a href="#">IIT Jodhpur</a>	IITJ	2008	<a href="#">Rajasthan</a>	451	<a href="https://www.iitj.ac.in/">https://www.iitj.ac.in/</a>	21/07/2009
33	<a href="#">IIT Patna</a>	IITP	2008	<a href="#">Bihar</a>	363	<a href="https://www.iitp.ac.in/">https://www.iitp.ac.in/</a>	28/07/2008
34	<a href="#">IIT Indore</a>	IITI	2009	<a href="#">Madhya Pradesh</a>	325	<a href="https://www.iiti.ac.in/">https://www.iiti.ac.in/</a>	7/04/2010
35	<a href="#">IIT Mandi</a>	IITMD	2009	<a href="#">Himachal Pradesh</a>	-	<a href="https://www.iitmandi.ac.in/">https://www.iitmandi.ac.in/</a>	2/02/2010
36	<a href="#">IIT (BHU) Varanasi</a>	IIT (BHU)	1919	<a href="#">Uttar Pradesh</a>	1513	<a href="https://www.iitbhu.ac.in/">https://www.iitbhu.ac.in/</a>	11/09/2012
37	<a href="#">IIT Palakkad</a>	IITPKD	2015	<a href="#">Kerala</a>	174	<a href="https://iitpkd.ac.in/">https://iitpkd.ac.in/</a>	8/04/2015
38	<a href="#">IIT Tirupati</a>	IITTP	2015	<a href="#">Andhra Pradesh</a>	224	<a href="https://iittp.ac.in/">https://iittp.ac.in/</a>	14/05/2015
39	<a href="#">IIT (ISM) Dhanbad</a>	IIT (ISM)	1926	<a href="#">Jharkhand</a>	1007	<a href="https://www.iitism.ac.in/">https://www.iitism.ac.in/</a>	6/09/2016
40	<a href="#">IIT Bhilai</a>	IITBH	2016	<a href="#">Chhattisgarh</a>	173	<a href="https://www.iitbhilai.ac.in/">https://www.iitbhilai.ac.in/</a>	2/08/2016
41	<a href="#">IIT Jammu</a>	IITJMU	2016	<a href="#">Jammu and Kashmir</a>	227	<a href="https://iitjammu.ac.in/">https://iitjammu.ac.in/</a>	11/05/2016
42	<a href="#">IIT Goa</a>	IITGOA	2016	<a href="#">Goa</a>	125	<a href="http://www.iitgoa.ac.in/">http://www.iitgoa.ac.in/</a>	5/07/2016
43	<a href="#">IIT Dharwad</a>	IITDH	2016	<a href="#">Karnataka</a>	160	<a href="https://iitdh.ac.in/">https://iitdh.ac.in/</a>	17/06/2016

The domain registration date is taken into account by the "Who is domain lookup tool" (Whois.Com - Free Whois Lookup, 2020). The top 43 NIRF-ranked colleges are included in Table 1, along with their establishment year, website URL, and Domain Registration Date. IIT Roorkee is the oldest of the 43 universities, having been established in 1847. The oldest domain, which was registered on February 28, 2003, belongs to three Indian universities: IIM Lucknow, IIT Madras, and IIT Delhi.

**Table 2**

**Domain Extension of University Website**

Sr. No.	Domain Extension	No. University	Percentage (%)
1	.ac.in	43	100%

When assessing information from any website, one of the most important factors to examine when judging the authority of that website is the domain extension. Table 2 shows that the domain 'ac.in' is often utilized across all university websites.

**Table 3**

**Page Speed and Mobile Responsive of University Website**

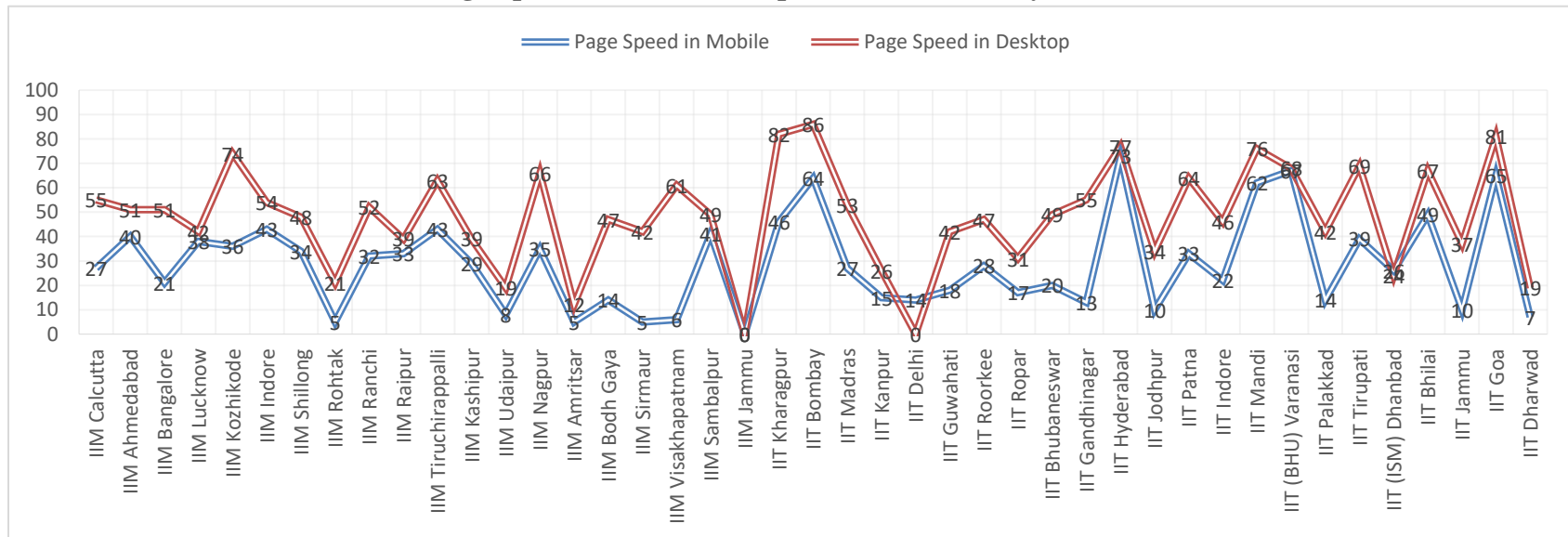


Table 3 shows the website's page speed and mobile responsiveness. Because of the expanding number of internet users using mobile devices, it is now expected that websites be mobile responsive. "Page Speed displays how well a page performs on mobile and desktop devices. Fast is defined as a score of 90 or more, while moderate is defined as a score of 50 to 90. Slowness is defined as a

number less than 50 " (2019, Google). It was discovered that IIT Hyderabad has the fastest website on mobile, while IIM Rohtak has the slowest website of all the institutes. Among all universities, IIT Bombay has the fastest website speed on desktop, while IIM Amritsar has the slowest website performance on desktop. The "Developers Google Tool" use for calculates the page speed of a website (Google, 2019).

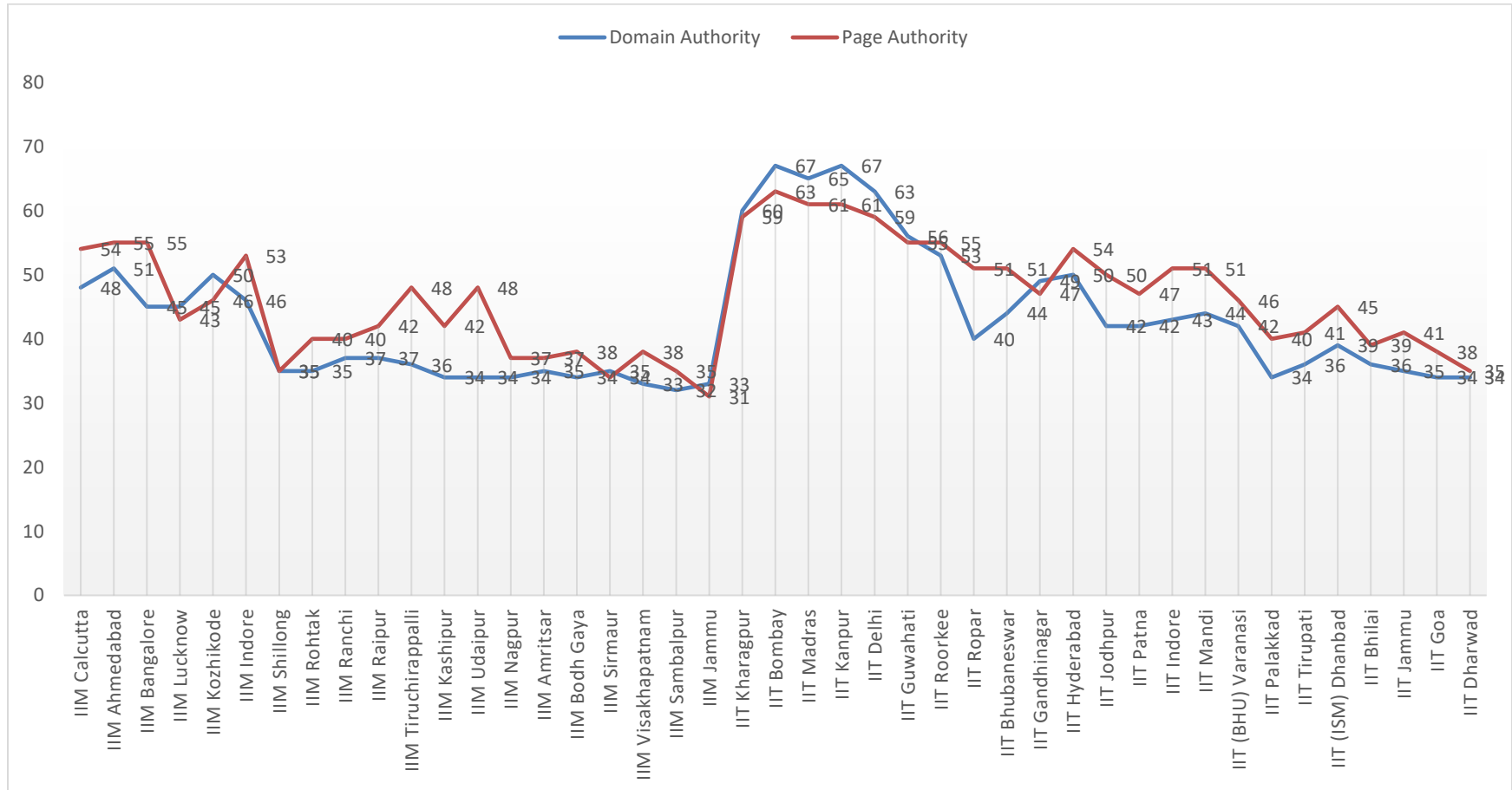
9 institute websites were determined to be non-mobile friendly, while 34 institute websites were found to be mobile responsive. ("Google Search Console's Mobile-Friendly Test." 2019). The outcomes of mobile responsive websites are not encouraging, and it serves as a reminder to university administrators that the majority of information seekers obtain information via a mobile device. It is recommended that top-ranked colleges' websites be mobile responsive.

**Table 4**

**Domain and Page Authority**

Sr. No.	Name of University	Domain Authority	Page Authority
1.	<a href="#">IIM Calcutta</a>	48	54
2.	<a href="#">IIM Ahmedabad</a>	51	55
3.	<a href="#">IIM Bangalore</a>	45	55
4.	<a href="#">IIM Lucknow</a>	45	43
5.	<a href="#">IIM Kozhikode</a>	50	46
6.	<a href="#">IIM Indore</a>	46	53
7.	<a href="#">IIM Shillong</a>	35	35
8.	<a href="#">IIM Rohtak</a>	35	40
9.	<a href="#">IIM Ranchi</a>	37	40
10.	<a href="#">IIM Raipur</a>	37	42
11.	<a href="#">IIM Tiruchirappalli</a>	36	48
12.	<a href="#">IIM Kashipur</a>	34	42
13.	<a href="#">IIM Udaipur</a>	34	48

14.	<a href="#">IIM Nagpur</a>	34	37
15.	<a href="#">IIM Amritsar</a>	35	37
16.	<a href="#">IIM Bodh Gaya</a>	34	38
17.	<a href="#">IIM Sirmaur</a>	35	34
18.	<a href="#">IIM Visakhapatnam</a>	33	38
19.	<a href="#">IIM Sambalpur</a>	32	35
20.	<a href="#">IIM Jammu</a>	33	31
21.	<a href="#">IIT Kharagpur</a>	60	59
22.	<a href="#">IIT Bombay</a>	67	63
23.	<a href="#">IIT Madras</a>	65	61
24.	<a href="#">IIT Kanpur</a>	67	61
25.	<a href="#">IIT Delhi</a>	63	59
26.	<a href="#">IIT Guwahati</a>	56	55
27.	<a href="#">IIT Roorkee</a>	53	55
28.	<a href="#">IIT Ropar</a>	40	51
29.	<a href="#">IIT Bhubaneswar</a>	44	51
30.	<a href="#">IIT Gandhinagar</a>	49	47
31.	<a href="#">IIT Hyderabad</a>	50	54
32.	<a href="#">IIT Jodhpur</a>	42	50
33.	<a href="#">IIT Patna</a>	42	47
34.	<a href="#">IIT Indore</a>	43	51
35.	<a href="#">IIT Mandi</a>	44	51
36.	<a href="#">IIT (BHU) Varanasi</a>	42	46
37.	<a href="#">IIT Palakkad</a>	34	40
38.	<a href="#">IIT Tirupati</a>	36	41
39.	<a href="#">IIT (ISM) Dhanbad</a>	39	45
40.	<a href="#">IIT Bhilai</a>	36	39
41.	<a href="#">IIT Jammu</a>	35	41
42.	<a href="#">IIT Goa</a>	34	38



A search engine ranking score of 100 that forecasts how well a website will rank on search engine result pages is known as domain and page authority (SERPs). Domain Authority is derived by combining numerous elements into a single DA score, such as connecting root domains and total links. Table 4 shows Domain and Page Authority of the website. IIT Bombay and IIT Kanpur received highest ratings of 67, while the IIM Sambalpur website domain authority score was just 32 out of a possible 100 points, the lowest among responding institutes. The IIT Bombay website received the highest page authority score of 63, while the IIM Jammu website received the lowest score of 31. The "Domain Authority Checker tool" calculates the Domain Authority and Page Authority.

**Table 5****Website,Backlink and Referring Domains**

Sr. No.	Name of University	Website Traffic Monthly Visitors	Back links	Referring domains
1.	<a href="#">IIM Calcutta</a>	54,148	65,965	2,060
2.	<a href="#">IIM Ahmedabad</a>	93,185	556	264
3.	<a href="#">IIM Bangalore</a>	1,26,236	3,492	562
4.	<a href="#">IIM Lucknow</a>	2,065	758	173
5.	<a href="#">IIM Kozhikode</a>	55,093	32,524	1,304
6.	<a href="#">IIM Indore</a>	41,449	39,869	1,660
7.	<a href="#">IIM Shillong</a>	1,426	203	62
8.	<a href="#">IIM Rohtak</a>	2,065	447	214
9.	<a href="#">IIM Ranchi</a>	1,464	3,246	627
10.	<a href="#">IIM Raipur</a>	1,136	1,131	195
11.	<a href="#">IIM Tiruchirappalli</a>	1,817	8,031	665
12.	<a href="#">IIM Kashipur</a>	2,453	527	209
13.	<a href="#">IIM Udaipur</a>	2,804	7,302	701
14.	<a href="#">IIM Nagpur</a>	1,630	6,619	442
15.	<a href="#">IIM Amritsar</a>	1,145	1,836	294
16.	<a href="#">IIM Bodh Gaya</a>	1,233	30,586	371
17.	<a href="#">IIM Sirmaur</a>	2,223	403	71
18.	<a href="#">IIM Visakhapatnam</a>	2,098	16,668	241
19.	<a href="#">IIM Sambalpur</a>	819	804	107
20.	<a href="#">IIM Jammu</a>	1,104	1,439	236
21.	<a href="#">IIT Kharagpur</a>	179,928	40,839	3,367
22.	<a href="#">IIT Bombay</a>	2,73,993	62,05,498	5,213
23.	<a href="#">IIT Madras</a>	1,72,463	1,18,390	4,710



24.	<a href="#">IIT Kanpur</a>	2,89,157	63,162	3,489
25.	<a href="#">IIT Delhi</a>	1,76,280	73,266	3,582
26.	<a href="#">IIT Guwahati</a>	1,16,577	88,200	2,660
27.	<a href="#">IIT Roorkee</a>	1,10,203	76,626	3,004
28.	<a href="#">IIT Ropar</a>	2,746	22,807	1,065
29.	<a href="#">IIT Bhubaneswar</a>	2,316	17,798	972
30.	<a href="#">IIT Gandhinagar</a>	41,448	26,460	1,388
31.	<a href="#">IIT Hyderabad</a>	81,169	31,824	1,294
32.	<a href="#">IIT Jodhpur</a>	55,192	7,249	622
33.	<a href="#">IIT Patna</a>	2,359	21,043	870
34.	<a href="#">IIT Indore</a>	1,760	8,644	837
35.	<a href="#">IIT Mandi</a>	61,592	2,13,892	982
36.	<a href="#">IIT (BHU) Varanasi</a>	2,839	6,549	648
37.	<a href="#">IIT Palakkad</a>	2,499	1,756	451
38.	<a href="#">IIT Tirupati</a>	1,784	2,733	502
39.	<a href="#">IIT (ISM) Dhanbad</a>	44,132	5,212	761
40.	<a href="#">IIT Bhilai</a>	1,127	1,983	384
41.	<a href="#">IIT Jammu</a>	1,563	3,263	530
42.	<a href="#">IIT Goa</a>	1,283	1,414	315
43.	<a href="#">IIT Dharwad</a>	1,314	814	95

The number of people who visit a website is referred to as website traffic. The number of visitors to a specific website within a given time period is used to calculate web traffic. Table 5 shows how many people visited the websites of the top 43 IITs and IIMs in April 2021. The website of IIT Kanpur has the most web traffic among the respondent universities, with 2,89,157 visitors during the study period, followed by the websites of IIM Sambalpur and IIM Jammu website has the lowest web traffic with 819 and 1,104. The "Ahrefs-SEO Tools" calculated website traffic, backlinks, and referring domains ("Ahrefs—SEO Tools & Grow Your Search Traffic," 2019), which is reflected in the table and graphs. A backlink is a link to a website obtained from another website. This signifies that you can move your required information from one website to another. It displays a specific website link that has been used on another website. Referring domains are websites that have one or more backlinks to the target website or web page. IIT Bombay website has the highest 62,05,498 backlinks, whereas the IIM Sillong website has just 203.

**Table 6****University's Website and their Alexa Ranks**

<b>Sr. No.</b>	<b>Name of University</b>	<b>AlexaRank (Global)</b>	<b>Rank</b>	<b>Alexa Rank (India)</b>	<b>Rank</b>
1	<a href="#">IIM Calcutta</a>	66,484	14	9,079	14
2	<a href="#">IIM Ahmedabad</a>	38,633	9	3,553	8
3	<a href="#">IIM Bangalore</a>	28,518	6	3,605	9
4	<a href="#">IIM Lucknow</a>	145,282	27	10,596	16
5	<a href="#">IIM Kozhikode</a>	65,344	13	5,717	11
6	<a href="#">IIM Indore</a>	86,853	16	9,674	15
7	<a href="#">IIM Shillong</a>	210,379	35	18,023	26
8	<a href="#">IIM Rohtak</a>	145,298	28	12,244	17
9	<a href="#">IIM Ranchi</a>	204,858	34	16,958	25
10	<a href="#">IIM Raipur</a>	264,139	40	20,583	31
11	<a href="#">IIM Tiruchirappalli</a>	165,149	29	12,499	18
12	<a href="#">IIM Kashipur</a>	122,301	22	14,814	22
13	<a href="#">IIM Udaipur</a>	107,003	19	15,087	23
14	<a href="#">IIM Nagpur</a>	184,057	32	20,008	30
15	<a href="#">IIM Amritsar</a>	262,071	39	39,927	41
16	<a href="#">IIM Bodh Gaya</a>	243,280	38	21,382	32
17	<a href="#">IIM Sirmaur</a>	134,977	25	13,576	20
18	<a href="#">IIM Visakhapatnam</a>	142,973	26	31,683	37
19	<a href="#">IIM Sambalpur</a>	366,396	43	32,840	38
20	<a href="#">IIM Jammu</a>	271,759	42	25,744	33
21	<a href="#">IIT Kharagpur</a>	20,008	3	2,148	3
22	<a href="#">IIT Bombay</a>	13,139	2	1,758	2

23	<a href="#">IIT Madras</a>	20,874	5	2,341	4
24	<a href="#">IIT Kanpur</a>	12,450	1	1,697	1
25	<a href="#">IIT Delhi</a>	20,422	4	2,395	5
26	<a href="#">IIT Guwahati</a>	30,881	7	3,220	6
27	<a href="#">IIT Roorkee</a>	32,667	8	3,518	7
28	<a href="#">IIT Ropar</a>	109,266	20	18,590	27
29	<a href="#">IIT Bhubaneswar</a>	129,522	24	27,506	34
30	<a href="#">IIT Gandhinagar</a>	86,855	17	13,175	19
31	<a href="#">IIT Hyderabad</a>	44,352	10	7,149	12
32	<a href="#">IIT Jodhpur</a>	65,227	12	7,221	13
33	<a href="#">IIT Patna</a>	127,156	23	16,797	24
34	<a href="#">IIT Indore</a>	170,500	31	35,933	40
35	<a href="#">IIT Mandi</a>	58,449	11	5,642	10
36	<a href="#">IIT (BHU) Varanasi</a>	105,653	18	19,603	29
37	<a href="#">IIT Palakkad</a>	120,031	21	13,988	21
38	<a href="#">IIT Tirupati</a>	168,119	30	31,355	35
39	<a href="#">IIT (ISM) Dhanbad</a>	81,574	15	18,876	28
40	<a href="#">IIT Bhilai</a>	266,126	41	55,050	42
41	<a href="#">IIT Jammu</a>	191,915	33	31,420	36
42	<a href="#">IIT Goa</a>	233,803	37	35,716	39
43	<a href="#">IIT Dharwad</a>	228,249	36	77,043	43



**Table 7**

**Link Analysis and Web Impact Factor**

Sr. No.	Name of University	Web page	Total Link	Internal Link	External Link	SWIF	IWIF	EWIF
1	<a href="#">IIM Calcutta</a>	4,090	127	109	18	0.031	0.027	0.004
2	<a href="#">IIM Ahmedabad</a>	93,900	190	146	44	0.002	0.001	0.000
3	<a href="#">IIM Bangalore</a>	11,700	262	236	26	0.022	0.020	0.002
4	<a href="#">IIM Lucknow</a>	3,200	170	140	30	0.053	0.044	0.009
5	<a href="#">IIM Kozhikode</a>	53,800	224	204	20	0.004	0.004	0.000
6	<a href="#">IIM Indore</a>	5,270	353	327	26	0.067	0.062	0.005
7	<a href="#">IIM Shillong</a>	1030	212	152	60	0.206	0.148	0.058
8	<a href="#">IIM Rohtak</a>	1120	342	278	64	0.305	0.248	0.057
9	<a href="#">IIM Ranchi</a>	6260	199	173	26	0.032	0.028	0.004
10	<a href="#">IIM Raipur</a>	2690	273	249	24	0.101	0.093	0.009
11	<a href="#">IIM Tiruchirappalli</a>	2340	118	101	17	0.050	0.043	0.007
12	<a href="#">IIM Kashipur</a>	1580	157	120	37	0.099	0.076	0.023
13	<a href="#">IIM Udaipur</a>	1750	382	360	22	0.218	0.206	0.013
14	<a href="#">IIM Nagpur</a>	2950	248	237	11	0.084	0.080	0.004
15	<a href="#">IIM Amritsar</a>	966	280	221	59	0.290	0.229	0.061
16	<a href="#">IIM Bodh Gaya</a>	1050	292	268	24	0.278	0.255	0.023
17	<a href="#">IIM Sirmaur</a>	1480	177	148	29	0.120	0.100	0.020
18	<a href="#">IIM Visakhapatnam</a>	21200	314	286	28	0.015	0.013	0.001
19	<a href="#">IIM Sambalpur</a>	554	156	130	26	0.282	0.235	0.047
20	<a href="#">IIM Jammu</a>	1210	333	317	16	0.275	0.262	0.013
21	<a href="#">IIT Kharagpur</a>	11400	209	146	63	0.018	0.013	0.006
22	<a href="#">IIT Bombay</a>	11100	347	276	71	0.031	0.025	0.006
23	<a href="#">IIT Madras</a>	4480	418	412	06	0.093	0.092	0.001

24	<a href="#">IIT Kanpur</a>	173000	706	590	116	0.004	0.003	0.001
25	<a href="#">IIT Delhi</a>	111	538	379	159	4.847	3.414	1.432
26	<a href="#">IIT Guwahati</a>	39,400	117	146	31	0.003	0.004	0.001
27	<a href="#">IIT Roorkee</a>	19,500	157	98	59	0.008	0.007	0.003
28	<a href="#">IIT Ropar</a>	15,800	140	110	30	0.009	0.007	0.002
29	<a href="#">IIT Bhubaneswar</a>	12200	434	404	30	0.036	0.033	0.002
30	<a href="#">IIT Gandhinagar</a>	6720	231	120	111	0.034	0.018	0.017
31	<a href="#">IIT Hyderabad</a>	4580	131	92	39	0.029	0.020	0.009
32	<a href="#">IIT Jodhpur</a>	254	377	363	14	1.484	1.429	0.055
33	<a href="#">IIT Patna</a>	5610	324	311	13	0.058	0.055	0.002
34	<a href="#">IIT Indore</a>	1550	115	69	46	0.074	0.045	0.030
35	<a href="#">IIT Mandi</a>	4440	198	160	38	0.045	0.036	0.009
36	<a href="#">IIT (BHU) Varanasi</a>	2260	582	538	44	0.258	0.238	0.019
37	<a href="#">IIT Palakkad</a>	9730	851	154	694	0.087	0.016	0.071
38	<a href="#">IIT Tirupati</a>	4010	349	301	48	0.087	0.075	0.011
39	<a href="#">IIT (ISM) Dhanbad</a>	4320	102	78	24	0.024	0.018	0.006
40	<a href="#">IIT Bhilai</a>	579	95	89	06	0.164	0.154	0.010
41	<a href="#">IIT Jammu</a>	105	-	-	-	-	-	-
42	<a href="#">IIT Goa</a>	2050	150	132	18	0.073	0.064	0.009
43	<a href="#">IIT Dharwad</a>	1080	502	489	13	0.465	0.453	0.012

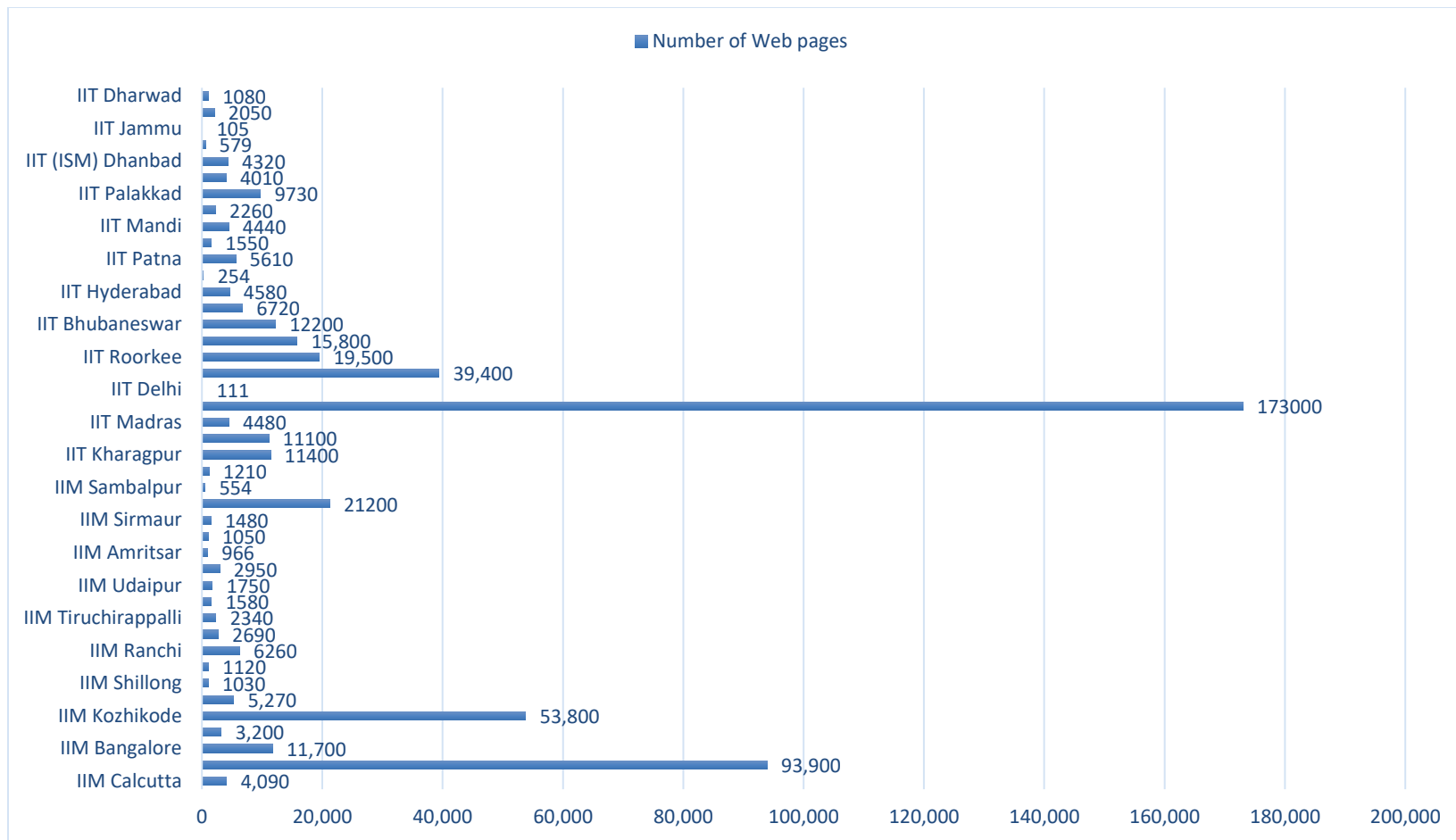


Table 7 contains an overview of Link analysis and Web Impact factors for institutes' websites from the Indian Institutes of Technology (IIT) and Indian Institutes of Management (IIM). It was observed that IIT Kanpur's website, which has a single web page containing over 1.73 million entries, is among the IITs and IIMs' most visited websites. From the table, it is seen that IIM Delhi has a website with 4.847 in its impact factor, which puts it in first place. While IIT Palakkad allows for a Total linking limit of 851 as well as an external linking limit of 694. The Internal, External, and simple web impact factor methodology uses the fact that IIT Delhi has the highest Internal External and simple web impact factor rating of 4.847, 3.414, and 1.432, and IIM Ahmadabad has the lowest Internal, External, and simple web impact factor rating in SWIF, IWIF, and EWIF.

## **Findings and Suggestions:**

1. IIT Roorkee is the oldest of the 43 universities, having been established in 1847. The oldest domain, which was registered on February 28, 2003, belongs to three Indian universities: IIM Lucknow, IIT Madras, and IIT Delhi.
2. It was discovered that IIT Hyderabad has the fastest website on mobile, while IIM Rohtak has the slowest website of all the institutes. Among all universities, IIT Goa has the fastest website speed on desktop, while IIM Amritsar has the slowest website performance on desktop.
3. IIT Bombay and IIT Kanpur received highest ratings of 67, while the IIM Sambalpur website domain authority score was just 32 out of a possible 100 points, the lowest among responding institutes. The IIT Bombay website received the highest page authority score of 63, while the IIM Jammu website received the lowest score of 31
4. The website of IIT Kanpur has the most web traffic among the respondent universities, with 2,89,157 visitors during the study period, followed by the websites of IIM Sambalpur and IIM Jammu website has the lowest web traffic with 819 and 1,104.
5. IIT Kanpur ranked first in Alexa rank Globally (12,450) and Alexa rank in India (1,697) whereas IIM Sambalpur was received lowest Alexa rank globally (3,66,396) and in India (32,840).
6. It was noticed that IIT Kanpur having a highest web page of 1,73,000 among the all selected Institute website and its noticed that IIT Delhi is in the first position with 4.847 of simple web impact factor.
7. Use of advanced ICT Tools and systems like Institutional Repositories, Free Electronic Resource, Enhance ICT Infrastructure, scholarly research, Collaboration with other academic institutions will increase the ability of institutions to compete in the global ranking process.

## **Conclusions:**

It is common knowledge that an academic institution's website is a crucial tool for accessing various information about the organization. Websites serve an important role in attracting potential students and other stakeholders, and they must be able to access all information about institutions without having to physically visit them at any time and from any location. A reliable, effective, and appealing website serves as a portal and useful tool for establishing a positive university brand and promoting educational activities in order to attract new students, staff members, and research researchers to the university. Stakeholders interested in learning more about the institution's courses, academic programme brochures, admission procedure, syllabus, working hours, resources and facilities available, library & learning resources, various academic announcements, and research activity via the institute's website. Webometric



data on the websites of the IITs and IIMs is presented in this study. Among the respondent institutions' The website of IIT Bombay and IIT Kanpur has the highest Domain authority score of 67 out of 100 and the most web traffic, backlinks, and referring domains, whereas the website of IIT Kanpur has the first Alexa traffic global rank and the website of IIT Dharwad has the lowest Alexa traffic rank in india. only 9 institute's websites are mobile responsive which is a lower number. Academic authorities at the concerned institutions should pay attention to it because the younger generation is heavily reliant on mobile devices with internet access. IIT Delhi has the highest Internal External and simple web impact factor rating of 4.847, 3.414, and 1.432, and IIM Ahmadabad has the lowest Internal, External, and simple web impact factor rating in SWIF, IWIF, and EWIF. Overall, the findings reveal that IIT and IIM institutes have poor external link visibility and EWIF scores (external web impact factor). To improve the institution's worldwide web presence, it is proposed that the institute authority develop a long-term plan and develop solid policy to promote and construct strong online policy.

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