

Webometric Indicators and Digital Impact: An Evaluation of Top Ten NIRF-Ranked Indian University Websites

Swati Gupta¹, Virendra Kumar^{2*}, Praveen Babel³

Abstract

This paper compares the webometric performance and digital presence of the top ten NIRF 2025–ranked Indian universities through their official websites. Data regarding total links (internal and external), Google-indexed links, URLs, and the Web Impact Factor (WIF) were gathered and analyzed using Google as the main search engine. The data collection and interpretation are based on the use of link analysis tools and search engine optimization (SEO) techniques. The analysis indicates significant differences in the number of total links and indexed links among the institutions. The University of Delhi (735 total links, 395 indexed) and Amrita Vishwa Vidyapeetham (724 total links, 367 indexed) have the highest number of total links, whereas BITS Pilani (663/320) and Manipal Academy of Higher Education (665/327) have the highest WIF values of 2.071 and 2.033, respectively. Conversely, Banaras Hindu University (58 total links, 311 indexed; WIF 0.186) and Jawaharlal Nehru University (28 total links, 306 indexed; WIF 0.091) exhibit weak internal link structures, as indicated by a larger number of indexed pages. The Indian Institute of Science, with 333 total and 333 indexed links (WIF 1.000), demonstrates a balanced profile with an efficiently structured and fully indexed web presence. The results demonstrate substantial digital gaps among leading Indian universities and indicate that WIF, as well as the density and concentration of link networks, are associated with greater online visibility and potential influence. The study suggests that link architecture should be systematically optimized and that technical audits should be conducted periodically, especially in low-WIF institutions, to enhance discoverability, user experience, and institutional reputation in the online environment.

Keywords: Links, NIRF ranking 2025, uniform resource locator (URL), university websites, web impact factor (WIF), webometric analysis

INTRODUCTION

The Honorable Minister of Human Resource Development approved the National Institutional Ranking Framework (NIRF) on September 29, 2015, and the Ministry of Human Resource and Development (MHRD) launched it. This framework outlines a method to rank institutions across the nation. To determine the general criteria for rating different colleges and institutions, the approach is based on the general recommendations and understanding reached by a Core Committee established by the MHRD. The parameters broadly cover “Teaching, Learning, and Resources,” “Research and Professional Practices,” “Graduation Outcomes,” “Outreach and Inclusivity,” and “Perception,” and these parameters are used to identify the ranking for various universities and institutions.

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Ranking in higher education refers to the quantitative assessment of university website performance, which establishes each institution's place in the list based on the basic principles after analysis, giving them a higher ranking if the performance is the most outstanding. Considering this, universities, institutions, and colleges' online performance should demonstrate their supremacy by collecting data from relevant web attributes, which include presence, visibility, transparency, and excellence.

Although university websites play an important role in circulating information related to the different areas. It contains information like departments, library facilities, faculties, and students, other resources and services, etc. This study focuses on webometric judgment using examination of links and total links, indexed links, and web impact factor (WFI), etc., and the top 10 universities' webpages, which are ranked by NIRF 2025, are selected for the study.

In 1997, the term webometrics was first coined by Almind and Ingwersen (1997) [1]. The term webometrics was combined from two English words, "Web" and "metrics". The term "web" is an acronym for the World Wide Web, and "metrics" refers to the mathematical theory of measurement. Webometrics integrates heavily linked websites with quantitative e-communication research. In the present era, webometrics is used to describe the measurement of quantitative data and the improved outcomes of e-communication, the internet, digital libraries, and other technologies that have extended but also replaced media from manual to print in this period of technological growth.

Björneborn and Ingwersen (2004) [2]. defined webometrics as "The study of the quantitative aspects of the construction and use of information resources, structures, and technologies on the web, drawing on bibliometrics and infometrics approaches".

REVIEW OF LITERATURE

Al-Slf (2025) [3]. determined the validity of the webometrics ranking of world universities in an analytical work titled analysis of Gross Methodological Errors in Webometrics Ranking Data from July 2025, using Yemeni Universities as a case study.

Thuranira and Diki (2023) [4]. demonstrated more equitable and context-sensitive evaluation frameworks that incorporate both quantitative and qualitative indicators and represent the many realities of higher education institutions across the globe.

Narnaware and Rokade (2024) [5]. reviewed a webometric study that looked at the top 20 college library webpages in the college category as listed in the NIRF India Ranking 2023. In this study, the author examined webpages, domain age, authority, linkages, and so on. The data for this study were analyzed using the tools smallseotools.com and similarweb.com.

Meghwat, Chaparwal, and Rajput (2023) [6]. examined the top ten university websites in India using the NIRF ranking 2023. The Amrita Vishva Vidyapeetham University website has the oldest domain name, and IISU (IIS Deemed to be University) webpages have a maximum domain authority score of 62 out of 100, according to the investigation's most notable findings.

Meghwat, Joshi, and Chaparwal (2022) [7]. counted and analyzed web metrics, including domain age, parameter analysis of web impact variables, and Alexa traffic rank of websites, to assess the top ten NIRF-ranked colleges in India. It was also found that a variety of tiny tools, including search engine optimization (SEO) tools, are included in every institution's website.

Kumar and Yadav (2020) [8]. discussed the NIRF ranking of university library website performance in Indian universities. In this study, the investigator examines numerous aspects of the library website.

OBJECTIVES OF THE STUDY

The main objectives are given below:

1. To analyze URLs of Universities Websites.
2. To examine the different types of links on university websites.
3. To calculate the WIF of Universities Websites.
4. To rank the Universities through WIF.

SCOPE AND LIMITATION OF THE STUDY

1. The study's scope is limited, and it focuses on Indian university websites that are listed by NIRF in 2025.
2. The current study analyzed the top ten Indian university websites in the University Category, as ranked by NIRF in 2025.
3. The investigation analyzes NIRF-ranked Indian universities' websites, including links, URLs, and so on.

METHODOLOGY OF THE STUDY

Only the top ten NIRF-ranked universities' websites in 2025 have been selected for this study. Several tools are used to gather data, including the Google search engine for link crawling and the online search engine optimization review tool for link analysis. It evaluates the overall number of internal links and external links, indexed links, URLs, subdomains, and more.

DATA ANALYSIS AND INTERPRETATIONS

Webometric data for the top ten websites in the NIRF 2014 ranking of Indian universities were evaluated in terms of total links and Google-controlled links to obtain the Web Impact Factor, compare their digital impact, and identify variability in link density and indexing efficiency. The descriptive statistics and tables clearly show the difference between universities with strong and balanced web structures and those that are technically weak and under-optimized, offering an evidence-based perspective on the strengths and weaknesses of institutional web presence.

Interpretation

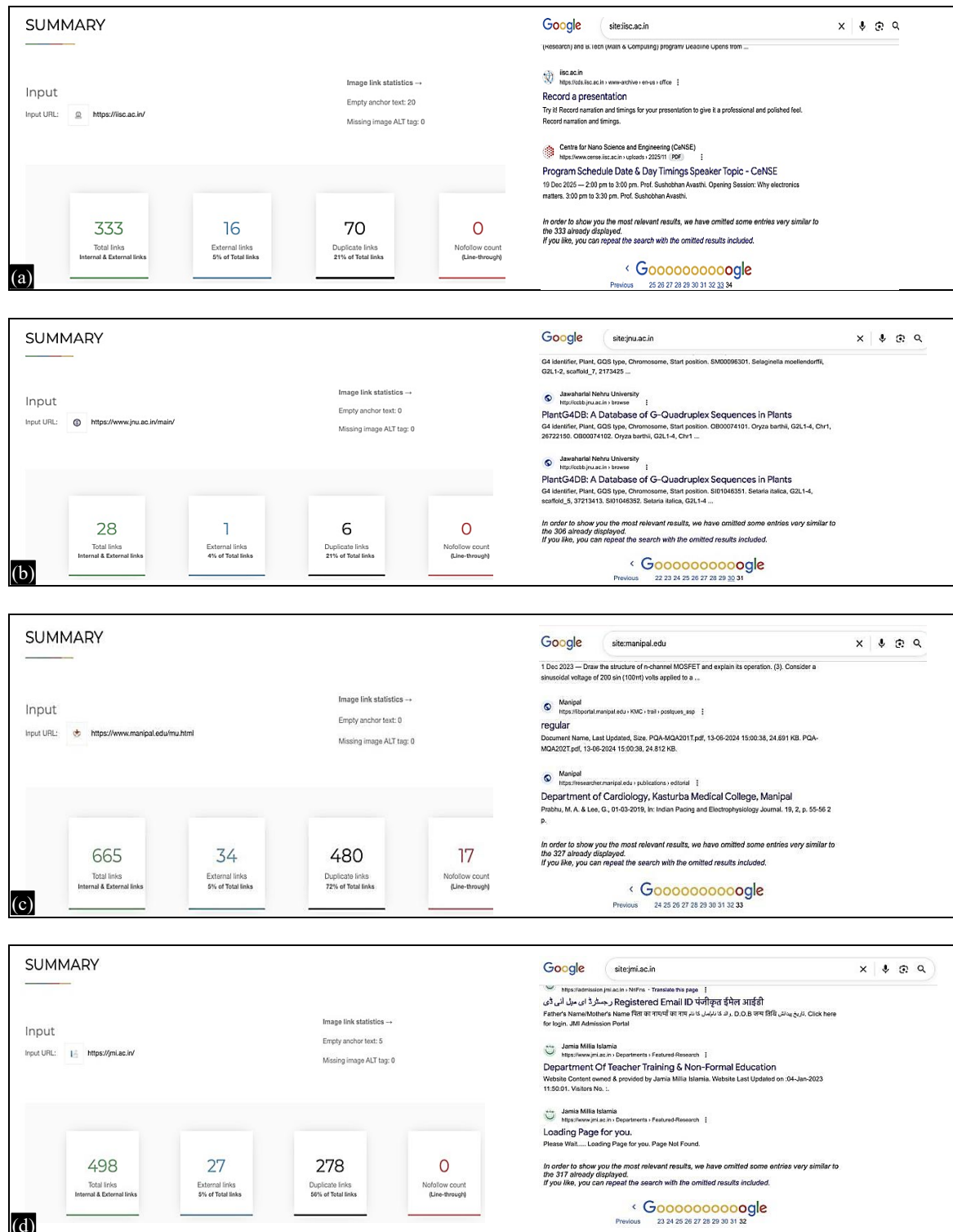
Figure 1 and Table 1 shows that the total count of links and the number of links indexed by Google change significantly for the top ten NIRF-ranked web sites of Indian Universities. Universities like University of Delhi, Amrita Vishwa Vidyapeetham, and Birla Institute of Technology and Science (BITS) Pilani have both high total links and high indexed link which shows a dense internal and external linking structure, which is also well captured in Google. In contrast, Jawaharlal Nehru University and Banaras Hindu University have very low total link counts but relatively high indexed links, which is indicative that while many of their pages are visible in Google, the internal link architecture of their website is relatively weak and may not play an effective role in navigation and flow of authority.

Table 1. List of universities with their total links and indexed Links.

S.N.	University name	City	State	Total links (internal + external)	Indexed links (Google)
1	Indian Institute of Science	Bengaluru	Karnataka	333	333
2	Jawaharlal Nehru University	New Delhi	Delhi	28	306
3	Manipal Academy of Higher Education, Manipal	Manipal	Karnataka	665	327
4	Jamia Millia Islamia	New Delhi	Delhi	498	317
5	University of Delhi	Delhi	Delhi	735	395
6	Banaras Hindu University	Varanasi	Uttar Pradesh	58	311
7	Birla Institute of Technology and Science Pilani	Pilani	Rajasthan	663	320
8	Amrita Vishwa Vidyapeetham	Coimbatore	Tamil Nadu	724	367
9	Jadavpur University	Kolkata	West Bengal	221	317
10	Aligarh Muslim University	Aligarh	Uttar Pradesh	Error	293

The “Error” value for Aligarh Muslim University in the total link column is also a pointer to the potential for technical or crawling problems, and the need for regular website structure and accessibility monitoring.

Universities like University of Delhi, Amrita Vishwa Vidyapeetham, and BITS Pilani have both high total links and high indexed link which shows a dense internal and external linking structure, which is also well captured in Google.



SUMMARY

Input

Input URL: <https://www.du.ac.in/>

Image link statistics --

Empty anchor text: 4
 Missing image ALT tag: 0

735

Total links
Internal & External links

80

External links
11% of Total links

145

Duplicate links
20% of Total links

0

No follow count
(Link-through)

Google

s/ter.du.ac.in

Index of /wp-content/uploads/sal_opt_content/CSS/icbm...

Index of /wp-content/uploads/sal_opt_content/CSS/icbm.absc.in/9865f926190636c4e4bf6a93 ; Parent Directory, -.

Shaheed Bhagat Singh College

https://sdu.ac.in/SCRIPT/plugins/instagram-feed ;

Index of /wp-content/uploads/sal_opt_content/SCRIPT...

Index of /wp-content/uploads/sal_opt_content/SCRIPT/abs.du.ac.in/wp-content/plugins/instagram-feed/ja688b822005af5a24219ac547 ...

Shaheed Bhagat Singh College

https://abs.du.ac.in/stemcenter/pr/assets/1b/slicky ;

Index of /wp-content/uploads/sal_opt_content/SCRIPT/icbm.absc...

Index of /wp-content/uploads/sal_opt_content/SCRIPT/icbm.absc.in/wp-content/plugins/stemcenter-processes/1b/slicky/686f6926190636c4e4bf6a9f ...

In order to show you the most relevant results, we have omitted some entries very similar to the 305 already displayed.

If you like, you can repeat the search with the omitted results included.

<

Google

>

SUMMARY

Input

Image link statistics →

Empty anchor text: 3

Missing image ALT tag: 5

58

Total links

Internal & External links

9

External links

16% of Total links

4

Duplicate links

7% of Total links

0

NoFollow count

(Line-through)

Google

site:bhu.ac.in

All Mode

All

Shopping

Images

Short videos

Videos

Forums

More •

Tools •

Banaras Hindu University

https://www.bhu.ac.in/Site/Home/1_2_16_Main-Site

Translate this page

This page is managed by Faculty of Arts

Faculty of Arts. Previous. Next. 1; 2. This page is managed by Faculty of Arts. सम्पूर्ण विदेशी विद्यार्थी और प्रशासन, बुधवार ...

In order to show you the most relevant results, we have omitted some entries very similar to the 311 already displayed.

If you like, you can repeat the search with the omitted results included.

<

Google

Previous

23

24

25

26

27

28

29

30

31

32

SUMMARY

Input
Input URL: <https://www.bits-pilani.ac.in/>

Image link statistics →
Empty anchor text: 0
Missing image ALT tag: 5

663	49	231	0
Total links Internal & External links	External links 7% of Total links	Duplicate links 35% of Total links	NoFollow count (Blue-through)

Google site:bits-pilani.ac.in/

In order to show you the most relevant results, we have omitted some entries very similar to the 320 already displayed.
If you like, you can repeat the search with the omitted results included.

< Google 24 25 26 27 28 29 30 31 32 33

SUMMARY

Input

Input URL: <https://www.amrita.edu/>

Image link statistics --

Empty anchor text: 0
Missing image ALT tag: 0

724

Total links
Internal & External links

14

External links
2% of Total links

151

Duplicate links
21% of Total links

0

No/follow count
(Link-through)

Google

amrita.edu

amrita.edu

<https://lab.amrita.edu/>

Resistivity by Four Probe Method

Resistivity by Four Probe Method. Copyright © Amrita University 2009 - 2015. Variables. Select Material : Germanium Range of Current : 20 mA Current (mA) : ...

Amrita Vishwa Vidyapeetham

<https://camp.amrita.edu/index>

Untitled

Course settings not available..!

Amrita Vishwa Vidyapeetham

<https://camp.amrita.edu/index>

Untitled

Course settings not available..!

307 Indexed Links by Counting

Previous

28 29 30 31 32 33 34 35 36 37

SUMMARY

Input

Input URL:


<https://jadavpuruniversity.in/>

Image link statistics →

Empty anchor text: 0

Missing image ALT tag: 0

221

Total links
Internal & External links

22

External links
10% of Total links

92

Duplicate links
42% of Total links

0

Nofollow count
(Link-through)

Google

site:jadavpuruniversity.in/

ERASMUS MUNDUS MOBILITY WITH ASIA WEST 2013 - Funding Agency: European Commission, Brussels ; Project Starting Year : 2013 ; Project Ending Year : 2016 ; Project ...

Jadavpur University

https://jadavpuruniversity.in/ - brochure - PDF -

CLASS START NOTICE

Page 1. CLASS. START NOTICE.

Jadavpur University

https://jadavpuruniversity.in/ - project - design-and-...

design and development of facial thermogram technology ...

DESIGN AND DEVELOPMENT OF FACIAL THERMOGRAM TECHNOLOGY FOR BIOMETRIC SECURITY SYSTEM ; Funding Agency: UGC, Govt. of India ; Project Starting Year : 2010 ; Project ...

In order to show you the most relevant results, we have omitted some entries very similar to the 317 already displayed.

If you like, you can repeat the search with the omitted results included.

Previous

23 24 25 26 27 28 29 30 31 32

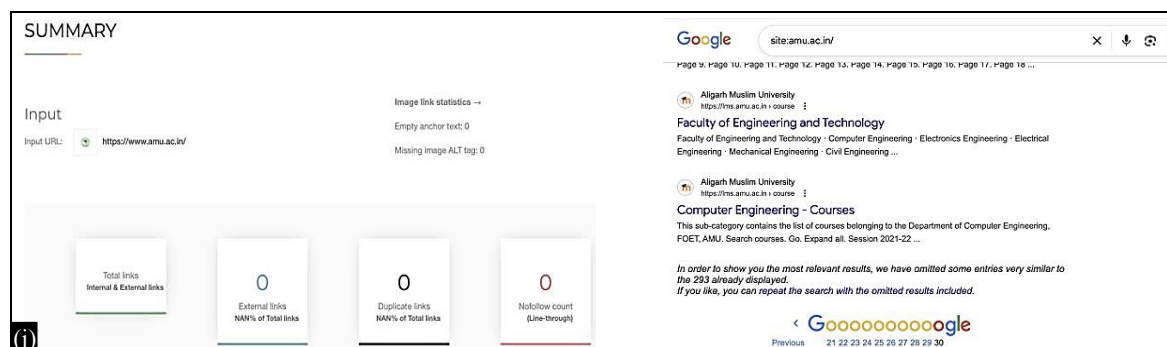


Figure 1. (a–j) Screenshots of total links retrieved from SEO review tools & indexed links from Google crawler.

In contrast, Jawaharlal Nehru University and Banaras Hindu University have very low total link counts but relatively high indexed links, which is indicative that while many of their pages are visible in Google, the internal link architecture of their website is relatively weak and may not play an effective role in navigation and flow of authority. The “Error” value for Aligarh Muslim University in the total link column is also a pointer to the potential for technical or crawling problems, and the need for regular website structure and accessibility monitoring.

Universities and Their Web Impact Factor

The WIF measure may be defined as the number of web pages in a website receiving links from other websites, divided by the number of web pages published in the site that are accessible to the crawler.

So,

$$WIF = \frac{\text{Total links}}{\text{Indexed links}}$$

Interpretation of Table 2 lists the universities based on the WIF, which compares the relationship between the total and indexed links. The top three with a WIF value above 1.9 are BITS Pilani, Manipal Academy of Higher Education, and Amrita Vishwa Vidyapeetham, which implies that, in addition to having a high richness in terms of their link structure, they are also efficiently indexed by Google and, therefore, have a high prospect of being exposed to and having a positive effect online. The University of Delhi and Jamia Millia Islamia also have decent WIF scores with an equal mix of content and connecting practices on the websites. In comparison, the WIF value of Banaras Hindu University and Jawaharlal Nehru University is very low, which implies that the number of links to indexed pages is low; and such universities might not be utilizing web-based linking techniques to enhance discoverability, reputation, and user experience. The fact that AMU did not have a WIF value due to the absence of the total link data also points to the necessity to address the measurement and technical gaps, and only then could meaningful benchmarking be performed.

Table 2. Ranking of universities by WIF.

Rank	University	Category	Total links	Indexed links	WIF
1	Birla Institute of Technology and Science Pilani	Deemed University	663	320	2.071
2	Manipal Academy of Higher Education-Manipal	Deemed University	665	327	2.033
3	Amrita Vishwa Vidyapeetham	Private University	724	367	1.972
4	University of Delhi	Central University	735	395	1.860
5	Jamia Millia Islamia	Central University	498	317	1.570
6	Indian Institute of Science	Public Deemed, GOI	333	333	1.000
7	Banaras Hindu University	Central University	58	311	0.186
8	Jadavpur University	State University	221	317	0.697
9	Jawaharlal Nehru University	Central University	28	306	0.091
10	Aligarh Muslim University	Central University	Error	293	

Table 3. Analysis of URLs of universities websites.

Name of university	Uniform resource locator (URL)	URL's subdomain	Country code in URL
IIS	https://iisc.ac.in/	.ac	.in
JNU	https://www.jnu.ac.in/main/	.ac	.in
MAHE	https://www.manipal.edu/mu.html	.edu	---
JMI	https://jmi.ac.in/	.ac	.in
DU	https://www.du.ac.in/	.ac	.in
BHU	https://www.bhu.ac.in/	.ac	.in
BITS Pilani	https://www.bits-pilani.ac.in/	.ac	.in
Amrita	https://www.amrita.edu/	.edu	---
JU	https://jadavpuruniversity.in/	---	.in
AMU	https://www.amu.ac.in/	.ac	.in

Table 4. Analysis of universities website domains.

Name of university	Uniform resource locator (URL)	Website/domain /webpage
IIS	https://iisc.ac.in/	Domain / Webpage
JNU	https://www.jnu.ac.in/main/	Domain / Webpage
MAHE	https://www.manipal.edu/mu.html	Domain / Webpage
JMI	https://jmi.ac.in/	Domain / Webpage
DU	https://www.du.ac.in/	Domain / Webpage
BHU	https://www.bhu.ac.in/	Domain / Webpage
BITS Pilani	https://www.bits-pilani.ac.in/	Domain / Webpage
Amrita	https://www.amrita.edu/	Domain / Webpage
JU	https://jadavpuruniversity.in/	Domain / Webpage
AMU	https://www.amu.ac.in/	Domain / Webpage

Interpretation of Table 3 and 4 examine that the organization of the URLs, subdomain, or the type of domain of the chosen universities. The Indian universities that are being sampled, such as IISc, JNU, DU, BHU, BITS Pilani, and AMU, have the country code of academic domain (.ac.in), which is a clear indication that they are Indian higher education institutions and may, therefore, attract user trust and localization in the search results. Comparatively, MAHE and Amrita Vishwa Vidyapeetham use the domain of the.edu but without a country code, which implies that these institutions have more of a generic or global institutional branding approach, which can be useful to appeal to international audiences.

The reason why all the URLs are domain-level addresses and not deep web pages is that the homepages are serving as primary points of entry, and the choice to navigate and link between these domains will produce a significant effect on web impact and visibility.

Findings

- Birla Institute of Technology and Science, Pilani, is the strongest in terms of web influence, with a WIF of 2.071. The total number of links present on its site is 663; out of these, 320 have been indexed by Google Kumar et al., (2021) [9], which means that its site is pretty well interlinked and very visible on the internet.
- It is closely followed by Manipal Academy of Higher Education, which has 665 total links and 327 indexed links, giving it a WIF of 2.033. This university also keeps a good web presence.
- Amrita Vishwa Vidyapeetham, the private university, topped the chart with respect to the total number of links, having 724 and 367 indexed links with a WIF of 1.972, representing an

exceptionally good web footprint. There is a total of 735 links to the University of Delhi, out of which 395 are indexed links. WIF stands at 1.860, reflecting very high-volume web connections and good visibility.

- Jamia Millia Islamia has 498 total links, with 317 indexed links, and the WIF stands at 1.570, thus indicating a healthy web presence.
- 333 links in all were found within the Indian Institute of Science; all indexed in Google, hence having a WIF of 1.000 Madhusudhan and Prakash (2013) [10], which means the web pages have a balanced and efficient structure.
- There are only 58 links in Banaras Hindu University, totaling 311 indexed links. This provides a low WIF value of 0.186, indicating that, though there are several pages indexed, the number of interlinks between the pages is lower.
- Jadavpur University has 221 links in total, 317 indexed links, and a WIF of 0.697, indicating some imbalance.
- Jawaharlal Nehru University: 28 total links but 306 indexed, making for a very low WIF of 0.091 and showing the need for improvement in web linking.
- Aligarh Muslim University has an error in the total link count, but it has 293 indexed links.

CONCLUSION

Based on the research on the website designs of the top ten NIRF-ranked Indian universities, various styles were observed in the management of their websites. Certain institutions, such as Birla Institute of Technology and Science Pilani and Manipal Academy of Higher Education, display high levels of web influence in the form of a greater number of links and a high WIF; hence, their websites have a strong interconnectedness with the internet and can easily be accessed by the internet.

Other universities, such as Banaras Hindu University and Jawaharlal Nehru University, have a larger number of web pages but few numbers of linking pages, and this can indicate that these websites should be restructured to be more pronounced.

The ideal ratio of the number of links and the number of pages indexed testifies to the well-constructed site of the Indian Institute of Science. Overall, a higher WIF will be associated with a superior web presence and greater web influence, which could bring in additional students, researchers, and partnerships.

The webometric study, therefore, will assist in getting familiar with the digital performance of top universities, thereby offering viable information on how these institutions can enhance their websites to facilitate communication and an ever-enhancing digital image. An increase in connections and visibility of websites is highly significant in ensuring that universities in the current digital world have a chance to stay competitive and viable.

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