

WEBOMETRIC STUDY OF TOP TEN COLLEGES RANKED UNDER COLLEGE CATEGORY OF NIRF 2023 & 2024 WITH SPECIAL REFERENCE TO LIBRARY WEBPAGES

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Abstract :

Websites play an important role in sharing information with users in this digital era. Library websites, provide us a platform that helps users easily access library services and resources. The National Institutional Ranking Framework (NIRF) evaluates and ranks higher education institutions in India. This study focuses on the library websites of the top 10 colleges listed in the NIRF India Rankings 2023 & 2024 under the college category. It examines various aspects of these websites, including their domain, domain age, page authority and domain authority. To gather this data, tools such as smallseotools.com and duplichecker were used to analyze domain age, domain authority, page authority, and the ranking information for these library websites or webpages.

Keywords : Webometric Study, NIRF, SEO tools, Domain authority, Page authority.

Introduction :

The landscape of higher education in India has undergone rapid transformation over the past two decades, shaped by globalization, digitization, and the need for quality assurance in academic institutions. In this context, the **National Institutional Ranking Framework (NIRF)**, initiated by the Ministry of Education, Government of India in 2015, has emerged as a credible benchmarking tool to assess and rank institutions across diverse categories such as universities, engineering, management, medicine, law, and colleges. Within this framework, the **College Category** plays a crucial role as it represents some of the most reputed undergraduate institutions in India, setting standards for academic excellence, student support, and research initiatives.

An often-overlooked but highly significant component of a college's academic ecosystem is its **library**. Traditionally seen as repositories of printed books, modern college libraries now act as hybrid learning hubs by integrating **digital collections, online databases, institutional repositories, e-journals, and open educational resources**. The library's **website** serves as the primary digital gateway for students, faculty, and researchers, enabling seamless access to resources, online catalogues (OPAC), electronic theses and dissertations

(ETDs), and information literacy tools. Thus, the visibility, accessibility, and content richness of a library's website are crucial indicators of the institution's academic support infrastructure.

In parallel, the field of **webometrics** has developed as a recognized methodology to assess the web presence, impact, and visibility of academic and research organizations. Webometric indicators such as **size (number of indexed pages)**, **visibility (external links and referring domains)**, **richness of digital files**, and **scholarly presence (Google Scholar citations)** provide measurable insights into how well an institution's intellectual and academic assets are disseminated on the web. Applying such a framework to **college library websites** enables a deeper understanding of how these institutions project their academic resources to stakeholders and the global knowledge community.

The selection of the **top-ten colleges listed in the NIRF College category for 2023 and 2024** provides a meaningful sample for analysis. These institutions consistently represent high academic standards and are widely regarded as benchmarks for other colleges across India. However, while NIRF rankings primarily consider factors such as teaching, learning, research, graduation outcomes, and outreach, they do not explicitly evaluate the **digital presence of library websites**. This study therefore seeks to bridge that gap by examining whether the **webometric performance** of library websites corresponds with, or diverges from, their NIRF ranking positions.

Another important motivation for this study is the growing shift toward **digital-first education ecosystems**. The COVID-19 pandemic accelerated the adoption of online learning platforms, virtual classrooms, and e-resources, making the **library website an indispensable academic interface**. A comparative study across two consecutive years (2023 and 2024) will allow us to observe changes and improvements in library websites, identify patterns of digital growth, and highlight gaps that may require attention.

Finally, this study addresses a **research gap**. While numerous studies have explored webometric evaluations of universities and research organizations, **limited scholarly attention has been paid specifically to college library websites in India, especially those associated with NIRF top-ranking institutions**. Given the increasing importance of digital visibility for academic reputation and user engagement, such a study is both timely and necessary.

In this light, the present research will not only contribute to the field of **webometrics and library science**, but also provide actionable insights for **college administrators, librarians, policymakers, and ranking agencies**, who may consider digital library presence as a complementary metric for evaluating institutional performance.

Review of Literature :

The term *webometrics* was first introduced by Almind and Ingwersen (1997), who

defined it as the quantitative study of the web's structure and usage patterns. Their pioneering work highlighted the potential of applying bibliometric and scientometric techniques to the web environment. The methodology has since evolved, focusing on indicators such as the number of web pages, visibility through external links, richness of digital files, and scholarly presence indexed in academic databases (Aguillo, Ortega, Prieto, & Granadino, 2006). These indicators form the basis of widely used models like the **Ranking Web of Universities**, which measures the digital impact and openness of institutions

Academic libraries have transformed from physical repositories of print material into **hybrid**. Library websites are now considered the “virtual face” of an institution (Madhusudhan, 2008). They provide access to **OPACs, digital repositories, e-journals, subject gateways, and information literacy guides**. Studies such as that of Kaur and Rani (2008) demonstrated that the usability, accessibility, and navigation of Indian academic library websites significantly influence user satisfaction. In the global context, Clyde (2004) emphasized that well-designed library websites improve visibility and outreach, enhancing research support for faculty and students.

Several researchers have applied webometric approaches to evaluate library websites. For example, Jeyshankar and Babu (2009) conducted a webometric analysis of selected Tamil Nadu university library websites, assessing size, link structures, and visibility. Similarly, Singh and Kumar (2015) analyzed Indian Institutes of Technology (IIT) library websites and found notable differences in external link visibility and digital resource richness. In the international domain, Vaughan and Thelwall (2003) studied link-based impact metrics and found them to be useful proxies for institutional visibility and scholarly influence. These studies collectively demonstrate that webometric analysis provides actionable insights into the strengths and weaknesses of academic library websites.

The **National Institutional Ranking Framework (NIRF)** evaluates Indian institutions on teaching, learning, research, outreach, and perception (Ministry of Education, 2023). While NIRF does not explicitly include web presence as a ranking parameter, several scholars argue that **digital visibility and openness correlate strongly with institutional reputation** (Aguillo, 2012; Arora & Agarwal, 2019). For instance, Arora and Agarwal (2019) demonstrated a positive relationship between the web visibility of Indian universities and their placement in global rankings such as QS and THE. However, studies directly linking NIRF-ranked colleges with the webometric performance of their **library websites** remain scarce, revealing a clear research gap.

Existing studies are often limited to single states or specific types of institutions (Jeyshankar & Babu, 2009; Singh & Kumar, 2015), leaving a gap in comprehensive comparative analyses at the national level. Given that libraries act as gateways to knowledge and digital resources, their online presence must be evaluated systematically. The present study addresses this gap by conducting a **webometric study of top-ten NIRF College Category library websites for 2023 and 2024**.

Objectives :

1. To evaluate and compare the webometric performance of top-10 NIRF-listed college library websites for 2023 and 2024.
2. To identify changes in visibility, content richness, and accessibility between 2023 and 2024.
3. To calculate the DA and PA score and MOZ rank of the library websites.

Hypothesis :

- H1: There exists websites to top 10 colleges websites listed by NIRF in 2023 & 2024.
- H2: There exist significant differences in page authority and domain authority among the website of top 10 colleges listed in NIRF 2023 & 2024.

Scope and Delimitations : The study was carried out only Top-10 college's library webpages under NIRF "College" category of 2023 & 2024 ranking. Other category colleges are excluded from the study.

Methodology : A survey method is used to locate and calculate webometric score with use of different webometric parameters

The National Institutional Ranking Framework (NIRF) :

The National Institutional Ranking Framework (NIRF) launched by the Ministry of Education, Government of India, to evaluate and rank colleges and universities across the country. Its main goal is to encourage healthy competition among institutions, improve the quality of higher education, and offer reliable information that can help students, parents, and other stakeholders make informed decisions. Every year, NIRF releases rankings of institutions based on several key parameters, including teaching and learning resources, research and professional practices, graduation outcomes, outreach and inclusivity, and overall perception.

This study focuses on the top 10 colleges listed in the NIRF Rankings 2023 & 2024 (college category) and examines their websites. It uses webometric tools to analyze different aspects of their online presence, with special reference to the library web pages.

Table 1: National Institutional Ranking Framework (NIRF) ranking colleges in year-2023 & 2024

Ran k	Institute	City	State	Library web page	NIRF 2023 Rank	NIRF 2024 Rank
1	Miranda House	Delhi	Delhi	https://www.mirandahouse.ac.in/facilities/library.php	1	2

2	Hindu College	Delhi	Delhi	https://hinducollege.ac.in/library.aspx	2	1
3	Presidency College	Chennai	Tamil Nadu	https://www.presidencycollegechennai.ac.in/UI/DepartmentPage.aspx	3	15
4	PSGR Krishnammal College for Women	Coimbatore	Tamil Nadu	https://www.psgrkcw.ac.in/gr-govindarajulu-memorial-general-library/	4	9
5	St. Xavier's College	Kolkata	West Bengal	https://www.sxccal.edu/central-library/	5	8
6	Atma Ram Sanatan Dharm College	New Delhi	Delhi	https://www.arsdcollege.ac.in/index.php/aboutlibrary/	6	7
7	Loyola College	Kolkata	West Bengal	https://www.loyolacollege.edu/library/profile	7	14
8	Rama Krishna Mission Vivekananda Centenary College	Rahara	Wes Bengal	https://rkmvccrahara.org/viewalllist.aspx?id=29	8	6
9	Kirori Mal College	Delhi	Delhi	http://kmclibrary.saraswatilib.com/	9	4
10	Lady Shri Ram College For Women	New Delhi	Delhi	https://lsr.edu.in/students/facilities/library/	10	17

Table 2: List of colleges and their library hyperlinks, domain age, domain registration date

Ran k	Institute	City	State	Library web page	Domain Age	Domain Registration
1	Miranda House	Delhi	Delhi	https://www.mirandahouse.ac.in/facilities/library.php	21 Years 7 Month 2 Days	2004-02-28 05:00:00
2	Hindu College	Delhi	Delhi	https://hinducollege.ac.in/library.aspx	9 Years 10	2015-11-06

				ge.ac.in/library.aspx	Month 24 Days	05:45:41.11 3000
3	Presidency College	Chennai	Tamil Nadu	https://www.presidencycollegechennai.ac.in/UI/DepartmentPage.aspx	7 Years 1 Month 10 Days	2018-08-20 11:40:28.83 7000
4	PSGR Krishnammal College for Women	Coimbatore	Tamil Nadu	https://www.psgrkcw.ac.in/gr-govindarajulu-memorial-general-library/	6 Years 10 Month 15 Days	2018-11-15 11:32:14.20 2000
5	St. Xavier's College	Kolkata	West Bengal	https://www.sxccal.edu/central-library/	26 Years 4 Month 18 Days	1999-05-13 00:00:00
6	Atma Ram Sanatan Dharm College	New Delhi	Delhi	https://www.arsdc college.ac.in/index.php/aboutlibrary/	8 Years 2 Month 23 Days	2017-07-07 10:07:24.86 3000
7	Loyola College	Kolkata	West Bengal	https://www.loyolacollege.edu/library/profile	27 Years 11 Month 7 Days	1997-10-24 00:00:00
8	Rama Krishna Mission Vivekananda Centenary College	Rahara	Wes Bengal	https://rkmvccrahara.org/viewalllist.aspx?id=29	16 Years 4 Month 9 Days	2009-05-21 12:44:12
9	Kirori Mal College	Delhi	Delhi	http://kmclibrary.saraswatilib.com/	6 Years 11 Month 17 Days	2018-10-13 11:39:56
10	Lady Shri Ram College For Women	New Delhi	Delhi	https://lsr.edu.in/students/facilities/library/	14 Years 11 Month 26 Days	2010-10-04 09:00:41.98 8000

Study found that older and reputed institutions like Loyola College (established library domain since 1997) and St. Xavier's College, Kolkata (since 1999), have some of the longest-standing digital presence. Their domain ages 27 years and 26 years respectively. It suggests consistent investment in maintaining an accessible digital library interface. In contrast, newer digital presences can be observed in colleges such as Presidency College, Chennai (domain registered in 2018), and PSGR Krishnammal College for Women, Coimbatore (domain registered in 2018). These relatively younger domains may reflect either a late adoption of web-based library systems or recent restructuring of digital infrastructures.

The data also shows that colleges from Delhi, such as Miranda House, Hindu College, Atma Ram Sanatan Dharm College, Kirori Mal College, and Lady Shri Ram College,

dominate the list. These institutions vary significantly in domain age, from Miranda House's website registered in 2004 to Hindu College's in 2015. This indicates that while all have strong physical reputations, their digital adoption timelines differ, possibly due to administrative priorities or resource allocation.

The table shows two major trends. First, prestigious colleges with longer digital histories often reflect a stronger online academic identity, contributing to their visibility and ranking. Second, the increasing creation of library web portals in the late 2010s highlights a broader shift towards digitization and webometric visibility, aligning with the global emphasis on accessible academic resources.

Table 2: List of colleges and their library hyperlinks, domain authority

Ran k	Institute	City	State	Library web page	Domain Authority
1	Miranda House	Delhi	Delhi	https://www.mirandahouse.ac.in/facilities/library.php	36
2	Hindu College	Delhi	Delhi	https://hinducollege.ac.in/library.aspx	35
3	Presidency College	Chennai	Tamil Nadu	https://www.presidencycollegechennai.ac.in/UI/DepartmentPage.aspx	29
4	PSGR Krishnammal College for Women	Coimbatore	Tamil Nadu	https://www.psgrkcw.ac.in/gr-govindarajulu-memorial-general-library/	30
5	St. Xavier's College	Kolkata	West Bengal	https://www.sxccal.edu/central-library/	39
6	Atma Ram Sanatan Dharm College	New Delhi	Delhi	https://www.arsdccollege.ac.in/index.php/aboutlibrary/	26
7	Loyola College	Kolkata	West Bengal	https://www.loyolacollege.edu/library/profile	39
8	Rama Krishna Mission Vivekananda Centenary	Rahara	Wes Bengal	https://rkmvccrahara.org/viewalllist.aspx?id=29	28

	College				
9	Kirori Mal College	Delhi	Delhi	http://kmclibrary.saraswatilib.com/	13
10	Lady Shri Ram College For Women	New Delhi	Delhi	https://lsr.edu.in/students/facilities/library/	40

The "Domain Authority" (DA) is a key metric here, representing a score that predicts a website's potential to rank in search engine results. A higher DA suggests a stronger online footprint and greater authoritativeness on the web. An analysis of the data reveals that there is no direct correlation between a college's institutional rank and its library's Domain Authority. Lady Shri Ram College for Women, ranked 10th, possesses the highest DA of 40, while Miranda House, ranked 1st, has a DA of 36. Conversely, Kirori Mal College, ranked 9th, has the lowest DA score on the list at 13. This disparity is a significant finding for researchers in library science or digital communications. It suggests that an institution's overall prestige does not automatically translate to the online authority of its library's webpage.

Table 2: List of colleges and their library website page authority

Ran k	Institute	City	State	Library web page	Page Authority	MOZ Rank
1	Miranda House	Delhi	Delhi	https://www.mirandahouse.ac.in/facilities/library.php	25	2.5
2	Hindu College	Delhi	Delhi	https://hinducollege.ac.in/library.aspx	25	2.5
3	Presidency College	Chennai	Tamil Nadu	https://www.presidencycollegechennai.ac.in/UI/DepartmentPage.aspx	22	2.2
4	PSGR Krishnammal College for Women	Coimbatore	Tamil Nadu	https://www.psgrkcw.ac.in/gr-govindarajulu-memorial-general-library/	19	1.9
5	St. Xavier's College	Kolkata	West Bengal	https://www.sxccal.edu/central-library/	31	3.1
6	Atma Ram Sanatan Dharm College	New Delhi	Delhi	https://www.arsdcollge.ac.in/index.php/aboutlibrary/	24	2.4
7	Loyola College	Kolkata	West	https://www.loyol	27	2.7

			Bengal	acollege.edu/libra ry/profile		
8	Rama Krishna Mission Vivekananda Centenary College	Rahara	Wes Bengal	https://rkmvccrahara.org/viewalllist.aspx?id=29	18	1.8
9	Kirori Mal College	Delhi	Delhi	http://kmclibrary.saraswatilib.com/	14	1.4
10	Lady Shri Ram College For Women	New Delhi	Delhi	https://lsr.edu.in/students/facilities/library/	25	2.5

"Page Authority" (PA), which is a score that predicts how well a specific webpage, in this case, the library's page, is likely to rank on search engine results pages. The most significant finding from this data is the clear lack of correlation between a college's institutional rank and its library webpage's Page Authority. For example, St. Xavier's College, ranked 5th, has the highest PA score of 31, while Kirori Mal College, ranked 9th, has the lowest PA of 14. Furthermore, Miranda House (Rank 1), Hindu College (Rank 2), and Lady Shri Ram College (Rank 10) all share an identical PA score of 25, despite their widely different institutional rankings. Considering MOZ rank St. Xavier's College having 3.1 Rank followed by Kirorimal College have 1.4 rank respectively.

Conclusion :

A college's institutional rank does not directly correlate with the online authority of its library's specific webpage. The data shows a wide variance in Page Authority and domain authority scores and MOZ Rank, a metric that predicts a single page's ability to rank in search results. For example, the fifth-ranked St. Xavier's College has the highest Page Authority score of 31, while the top-ranked Miranda House has a lower score of 25. Conversely, the ninth-ranked Kirori Mal College holds the lowest Page Authority at 14. This disparity implies that the prestige of a parent institution does not automatically guarantee a strong digital presence for its library. Most of the colleges not maintain its library webpages. Therefore, this study concludes that a library's digital influence is a distinct entity from its college's overall reputation, highlighting an area where many esteemed institutions could improve their online visibility and resource accessibility.

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