

A Webometric Analysis of Selected Private Universities of North East India

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Abstract

Purpose: *This study aims to assess the web impact of private universities in North-East India by analyzing their official websites. It seeks to fill the gap in webometric research, as private universities in this region have been underexplored.*

Methodology: *A webometric analysis was conducted on 33 private universities from eight states in Northeast India using data from their official websites. Key webometric parameters, such as the number of web pages, in-links, and external links, were gathered. Web Impact Factors like SWIF, IWIF, and EWIF were calculated using SEO Review Tools.*

Findings: *The study found that The Institute of Chartered Financial Analysts of India University (Mizoram) ranked highest in SWIF and IWIF. Manipur International University had the greatest number of web pages and rich data files. Domain Authority was highest for Assam Don Bosco University, while Sikkim Manipal University led the Page Authority.*

Originality: *This study provides the first comprehensive webometric evaluation of private universities in Northeast India, offering a new framework for assessing web presence in this understudied region.*

Keywords: *Webometric Analysis, Private University, North-East India, SWIF, IWIF, EWIF.*

1. Introduction: Webometrics, a quantitative study of web-related phenomena, originated from the realization that it was originally for bibliometric analysis of scientific journal articles, and citation patterns could also be applied to the web to provide raw data with the help of commercial search engines (Thelwall et al., 2009). Ingwersen developed the WIF to calculate a website's impact based on the total number of links it received. He claims that there are three different kinds of WIFs: external, internal, and simple. The number of hyperlinks and webpages is used to calculate WIF (Ingwersen, 1998). In this digital world, websites are virtual representations of universities. This reflects the image of the university. Universities exchange and store information and publications through their websites. From uploading notices, new publications, promoting achievements, new arrival of books, and library catalogues to ask queries by students, everything is now done on the website. Therefore, it is one of the most significant elements of a university. In other words, a webometric study is an analytical study of websites. This is a type of quantitative analysis based on the content of the website. The word 'webometric' was first coined by Thomas Almind and Peter Ingwersen in 1997 (Almind & Ingwersen, 1997). Important information about the design of a website can be obtained from content analysis and website evaluation. Websites can be evaluated using several indicators, including the Web Impact Factor (WIF),

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Domain Authority (DA), and Page Authority (PA) (Yazdi & Deshpande, 2013). Webometrics is a branch of study that deals with the quantitative measurement of different aspects of a website (Brahma & Verma, 2018). The Online Dictionary for Library and Information Science (ODLIS) define webometrics as the 'description and evaluation of the impact of the Internet as a scholarly communication tool, primarily using quantitative analysis of web-based scholarly and scientific communications.' Webometric studies have mainly focused on four areas: webpage content, web link structure, web usage, and web technology analyses. Hyperlinks play a role in citations. This study focuses on determining the impact of website design. The worth of a particular website can be determined using the web impact factor (WIF).

2. Private Universities in North-East India: Private universities in northeastern India have become important drivers of educational and socio-economic progress, offering a wide range of programs, modern infrastructure, and industry connections that attract students from across the country. These universities prioritize research, cultural diversity, and the empowerment of Indigenous communities, often fostering collaboration and global perspectives. Contributing significantly to regional development and holistic student growth, these institutions play a major role in the future of the Northeast. As the population grows, the demand for educational institutions also increases. Central and state government universities alone cannot fulfill all students' educational needs. The growing importance of private universities has become evident in recent years. According to the University Grants Commission (2021), there are 388 private universities in India, 36 of which are from eight states in Northeast India. This study aims to provide an academic ranking based on the WIF, which measures the visibility and impact of a university's website. Readers can identify and compare private university websites in Northeast India through the WIF.

3. Literature Review: In 2020, Verma and Jaiswal analyzed the top 30 medical universities in India using webometrics. It was found that Aligarh Muslim University had the highest Web Indicators for Science, Innovation, and Research (WISER) value, with a negative correlation between WISER and WIF. They used SocSciBot 4.0 software to create link network diagrams to visualize the link network between these websites. Gupta and Singh (2020) conducted a web analysis of Indian Statistical Institution (ISI) centres, analysing web pages, links, impact factors, and WISER rank. They found that ISI and Tezpur ranked first in the WSIER ranking, indicating well-connected websites across all ISI centers. Mejhi and Das (2020) used Google and SocScibot4 to collect data on weblinks from 45 Southern Asian Institutional Digital Repositories (IDRs) and analyzed self-links, in-links, and external links, finding India's National Aerospace Laboratories Institutional Repository as the top ranking. Jalal (2019) studied the web link structure of 23 Indian Institutes of Technology (IITs) using SocSciBot4.0 and Pajek4.0. This study analyzed patterns of hyperlinks between old and new IITs, focusing on historical aspects and link analysis approaches, and found that 90% of back links are in English, with Patna having the highest number of back links. Verma and Brahma's (2017) webometric study on 10 North East Indian universities' websites revealed that 'Tezpur University' ranks first in domain & page authority, external equity-passing links, and total links, while 'Mizoram University' has the highest WIF.

This review includes recent studies in the field of webometrics. After conducting all the reviews, the authors found that there are different studies conducted in the field of webometrics, but to date, no study has been conducted in private universities in Northeast India. Therefore, the responsibility for conducting a webometric analysis of private universities in Northeast India was taken.

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4. Objective of the Study: The following are the four objectives of this study

- i) To determine the number of web pages, in-link pages, and external link pages of private universities in Northeast India.
- ii) To measure the SWIF, in-link WIF (IWIF), and external WIF (ELWIF).
- iii) To determine the number of rich files.
- iv) To identify the domain and page authority.

5. Methodology and Scope: This was a web-based study conducted in private universities in Northeast India. There are eight states in NE India, and the total number of private universities is 44, as found on the official website of the University Grants Commission. This study was conducted in August 2021. At that time, the number of private universities for this study was 36, and the official websites of three universities were not found. Therefore, this study was conducted among the 33 private universities in Northeast India. Assam has five, Mizoram has one, Manipur has three, Arunachal Pradesh has seven, Meghalaya has eight, Nagaland has four, Tripura has one, and Sikkim has four. Several webometric tools were used to explore the websites of all 33 private universities. For the execution of this study, data were gathered from the respective university's website. The list of universities with their URL is provided in Table 1.

Table 1: List of the Universities and Their Website Address

| Sl. No. | State | List of Universities | Websites |
|---------|-------------------|---|---|
| 1 | Assam | Assam Don Bosco University | http://www.dbuniversity.ac.in |
| 2 | | Assam Down Town University | http://www.adtu.in |
| 3 | | Krishnaguru Adhyatmik Viswavidyalaya | http://kav.org.in/ |
| 4 | | Mahapurusha Srimanta Sankardeva Viswavidyalaya | http://www.mssv.co.in/ |
| 5 | | The Assam Kaziranga University | http://www.kazirangauniversity.in |
| 6 | Mizoram | The Institute of Chartered Financial Analysts of India University | http://www.iumuzoram.edu.in |
| 7 | Manipur | Bir Tikendrajit University | https://www.birtikendrajituniversity.ac.in/ |
| 8 | | Manipur International University | https://www.miu.edu.in/ |
| 9 | | Sangai International University | http://sangaiinternationaluniversity.com/ |
| 10 | Arunachal Pradesh | Apex Professional University | http://www.apexuniversity.ac.in |
| 11 | | Arunachal University of Studies | http://www.arunachaluniversity.ac.in |
| 12 | | Arunodaya University | http://www.arunodayauniversity.ac.in |
| 13 | | Himalayan University | http://www.himalayuniversity.com |
| 14 | | Indira Gandhi Technological and Medical Science University | http://www.igtamsu.ac.in |
| 15 | | North East Frontier Technical University | http://www.neftu.edu.in |
| 16 | | Venkateshwara Open University | http://www.vou.ac.in |
| 17 | Meghalaya | CMJ University | http://www.cmjumeghalaya.edu.in/ |
| 18 | | Mahatma Gandhi University | http://www.mgu.edu.in/ |
| 19 | | Martin Luther Christian University | http://www.mlcuniv.in |
| 20 | | North East Adventist University | http://www.neacollege.in/ |
| 21 | | Techno Global University | http://technoglobaluniversity.com |
| 22 | | The Institute of Chartered Financial Analysts of India University | http://www.iumeghalaya.edu.in |
| 23 | | University of Science & Technology, Meghalaya | http://www.ustm.ac.in |
| 24 | | William of Technology & Management | http://www.williamcareyuniversity.ac.in |
| 25 | Nagaland | ICFAI University | http://www.iunagaland.edu.in/ |
| 26 | | North East Christian University | http://necu.ac.in/ |
| 27 | | St. Joseph University | http://www.stjosephuniv.edu.in |
| 28 | | The Global Open University | http://tgounagaland.com/ |

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| | | | |
|----|---------|---|---|
| 29 | Tripura | ICFAI University | http://www.iutripura.edu.in/ |
| 30 | Sikkim | Shri Ramasamy Memorial University | http://www.srmus.ac.in |
| 31 | | Sikkim Manipal University | http://www.smu.edu.in |
| 32 | | The Institute of Chartered Financial Analysts of India University | http://www.iusikkim.edu.in |
| 33 | | Vinayaka Missions Sikkim University | http://www.vmsuniversity.in |

a) Selection of Search Engine: An appropriate search engine is mandatory to conduct webometric analysis. In this study, the Google search engine was chosen for data collection due to its user-friendly interface, extensive coverage, and advanced search capabilities for tallying website hyperlinks.

b) Period of the Time: Data for this study were collected in August 2021 from private universities' websites.

c) Method of Analysis: The analysis was carried out in a systematic manner using webometric indicators to evaluate the selected university websites. The data were collected using Google search queries and SEO Review Tools. Each indicator was calculated separately, and the universities were ranked accordingly.

The number of web pages (NWP) for each university website was obtained using a domain-based search in Google. Link-related data, including total links, in-links, and external links, were collected using SEO Review Tools. Rich file data were collected through Google using file-type queries. Domain authority and page authority scores were also obtained from SEO Review Tools. Based on the collected data, different webometric indicators were calculated and used for ranking the universities.

The data used in this study are based on search engine results and SEO tools, which provide approximate values. The number of web pages and links may vary due to indexing differences, duplicate pages, or repository-based content. Therefore, the results should be interpreted as indicative rather than exact measures of web presence.

6. Ranking Based on SWIF: To rank universities by their digital influence, the Simple Web Impact Factor (SWIF) is calculated by dividing a website's total number of links (both internal and external) by its total number of indexed web pages (NWP). To gather this data, the number of web pages is found by searching the university's domain on Google, while the total link count is retrieved using an SEO checker tool. Once these values are divided, the universities are listed in descending order, where a higher resulting score indicates a more significant web impact relative to the size of the site.

Table 2 shows the wide variation in the Simple Web Impact Factor (SWIF) across the selected universities. The Institute of Chartered Financial Analysts of India University recorded the highest SWIF, followed by Martin Luther Christian University and Vinayaka Missions Sikkim University, indicating a stronger link relative to their web page size. The normalized indicators, SWIF per 1000 pages and percentile rank, support the same pattern and show that these universities remain at the top, even after adjustment. At the lower end, Assam Don Bosco University, Manipur International University, and Apex Professional University recorded very low SWIF values, suggesting limited links in relation to the size of their websites. Overall, the table shows that a large number of web pages does not necessarily lead to a higher web impact score.

Table 2: Ranking of Universities Based on SWIF

| Name of the University | NWP | Total Links | SWIF | SWIF Per 1000 Pages | Percentile Rank (%) | Rank |
|---|------|-------------|---------|---------------------|---------------------|------|
| The Institute of Chartered Financial Analysts of India University (Mizoram) | 419 | 116 | 0.27684 | 276.84 | 100 | 1 |
| Martin Luther Christian University | 1580 | 382 | 0.24177 | 241.77 | 96.8 | 2 |

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| | | | | | | |
|---|---------|-----|---------|--------|------|----|
| Vinayaka Missions Sikkim University | 714 | 140 | 0.19608 | 196.08 | 93.7 | 3 |
| ICFAI University (Nagaland) | 940 | 157 | 0.16702 | 167.02 | 90.6 | 4 |
| Indira Gandhi Technological and Medical Science University | 1100 | 155 | 0.14091 | 140.91 | 87.5 | 5 |
| Sangai International University | 893 | 93 | 0.10414 | 104.14 | 84.3 | 6 |
| CMJ University | 1140 | 97 | 0.08509 | 85.09 | 81.2 | 7 |
| The Institute of Chartered Financial Analysts of India University (Sikkim) | 1580 | 132 | 0.08354 | 83.54 | 78.1 | 8 |
| The Institute of Chartered Financial Analysts of India University (Meghalaya) | 1,810 | 119 | 0.06575 | 65.75 | 75 | 9 |
| Arunodaya University | 3,010 | 189 | 0.06279 | 62.79 | 71.8 | 10 |
| ICFAI University (Tripura) | 2990 | 157 | 0.05251 | 52.51 | 68.7 | 11 |
| Arunachal University of Studies | 10900 | 408 | 0.03743 | 37.43 | 65.6 | 12 |
| Bir Tikendrajit University | 3200 | 98 | 0.03063 | 30.63 | 62.5 | 13 |
| North East Frontier Technical University | 4580 | 57 | 0.01245 | 12.45 | 59.3 | 14 |
| The Assam Kaziranga University | 11300 | 113 | 0.01 | 10 | 56.2 | 15 |
| University of Science & Technology, Meghalaya | 19700 | 173 | 0.00878 | 8.78 | 53.1 | 16 |
| North East Adventist University | 4590 | 30 | 0.00654 | 6.54 | 50 | 17 |
| Himalayan University | 16800 | 79 | 0.0047 | 4.7 | 46.8 | 18 |
| Techno Global University | 27600 | 41 | 0.00149 | 1.49 | 43.7 | 19 |
| Assam Down Town University | 54200 | 77 | 0.00142 | 1.42 | 40.6 | 20 |
| Mahatma Gandhi University | 177000 | 173 | 0.00098 | 0.98 | 37.5 | 21 |
| North East Christian University | 150000 | 104 | 0.00069 | 0.69 | 34.3 | 22 |
| Shri Ramasamy Memorial University | 2990 | 2 | 0.00067 | 0.67 | 31.2 | 23 |
| Sikkim Manipal University | 706000 | 337 | 0.00048 | 0.48 | 28.1 | 24 |
| St. Joseph University | 15800 | 7 | 0.00044 | 0.44 | 25 | 25 |
| William of Technology & management | 15600 | 2 | 0.00013 | 0.13 | 21.8 | 26 |
| The Global Open University | 882000 | 53 | 0.00006 | 0.06 | 18.7 | 27 |
| Krishnaguru Adhyatmik Viswavidyalaya | 1700000 | 89 | 0.00005 | 0.05 | 15.6 | 28 |
| Mahapurush Srimanta Sankardeva Viswavidyalaya | 44600 | 2 | 0.00004 | 0.04 | 6.2 | 29 |
| Venkateshwara Open University | 3940000 | 153 | 0.00004 | 0.04 | 6.2 | 29 |
| Apex Professional University | 55100 | 2 | 0.00004 | 0.04 | 6.2 | 29 |
| Manipur International University | 5110000 | 142 | 0.00003 | 0.03 | 3.1 | 32 |
| Assam Don Bosco University | 5670 | 0 | 0 | 0 | 0 | 33 |

7. Ranking Based on In-Link Web Impact Factor: The In-Link Web Impact Factor (IWIF) is a metric used to rank universities by dividing their total number of external "in-links" by their total number of indexed web pages (NWP). To determine this value, the number of web pages is found by searching the university's domain on Google, while the count of in-links (backlinks from other websites) is gathered using an SEO checker tool. By calculating the ratio of In-links/Total Number of Web Pages (NWP), universities can be ranked to show which institutions have the strongest external reputation and visibility relative to the actual size of their website.

Table 3 presents the ranking of the selected universities based on their In-Link Web Impact Factor (IWIF). The Institute of Chartered Financial Analysts of India University recorded the highest IWIF value, followed by Martin Luther Christian University and Vinayaka Missions Sikkim University, indicating a relatively stronger presence of in-links concerning their web page size. The normalised indicator, IWIF per 1000 pages and the

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percentile rank show a consistent pattern among the leading institutions. In contrast, several universities recorded low IWIF values. Assam Don Bosco University reported an IWIF value of zero, while Manipur International University and a few others showed very low values despite having a large number of web pages. This indicates that a larger website does not necessarily correspond to a higher number of inlinks. The results suggest that the strength of in-link visibility varies considerably across institutions and is not directly dependent on the size of the website.

Table 3: Ranking of Universities Based on In-link WIF

| Name of the University | NWP | NIL | IWIF | IWIF Per 1000 Pages | Percentile Rank (%) | Rank |
|---|---------|-----|---------|---------------------|---------------------|------|
| The Institute of Chartered Financial Analysts of India University (Mizoram) | 419 | 107 | 0.25536 | 255.36 | 100 | 1 |
| Martin Luther Christian University | 1580 | 358 | 0.22658 | 226.58 | 96.8 | 2 |
| Vinayaka Missions Sikkim University | 714 | 137 | 0.19187 | 191.87 | 93.7 | 3 |
| ICFAI University (Nagaland) | 940 | 146 | 0.15531 | 155.31 | 90.6 | 4 |
| Indira Gandhi Technological & Medical Science University | 1100 | 149 | 0.13545 | 135.45 | 87.5 | 5 |
| Sangai International University | 893 | 87 | 0.09742 | 97.42 | 84.3 | 6 |
| CMJ University | 1140 | 88 | 0.07719 | 77.19 | 81.2 | 7 |
| The Institute of Chartered Financial Analysts of India University (Sikkim) | 1850 | 128 | 0.06918 | 69.18 | 78.1 | 8 |
| The Institute of Chartered Financial Analysts of India University (Meghalaya) | 1810 | 112 | 0.06187 | 61.87 | 75 | 9 |
| Arunodaya University | 3010 | 181 | 0.06013 | 60.13 | 71.8 | 10 |
| ICFAI University (Tripura) | 2990 | 146 | 0.04882 | 48.82 | 68.7 | 11 |
| Arunachal University of Studies | 10900 | 393 | 0.03605 | 36.05 | 65.6 | 12 |
| Bir Tikendrajit University | 3200 | 90 | 0.02813 | 28.13 | 62.5 | 13 |
| Northeast Frontier Technical University | 4580 | 57 | 0.01244 | 12.44 | 59.3 | 14 |
| The Assam Kaziranga University | 11300 | 104 | 0.0092 | 9.2 | 56.2 | 15 |
| University of Science & Technology, Meghalaya | 19700 | 165 | 0.00837 | 8.37 | 53.1 | 16 |
| North East Adventist University | 4590 | 21 | 0.00457 | 4.57 | 50 | 17 |
| Himalayan University | 16800 | 72 | 0.00428 | 4.28 | 46.8 | 18 |
| Assam Down Town University | 54200 | 59 | 0.00108 | 1.08 | 43.7 | 19 |
| Techno Global University | 27600 | 25 | 0.00091 | 0.91 | 40.6 | 20 |
| Mahatma Gandhi University | 177000 | 142 | 0.0008 | 0.8 | 37.5 | 21 |
| North East Christian University | 150000 | 101 | 0.00067 | 0.67 | 31.2 | 22 |
| Shri Ramasamy Memorial University | 2990 | 2 | 0.00067 | 0.67 | 31.2 | 22 |
| Sikkim Manipal University | 706000 | 317 | 0.00045 | 0.45 | 28.1 | 24 |
| St. Joseph University | 15800 | 7 | 0.00044 | 0.44 | 25 | 25 |
| William of Technology & Management | 15600 | 2 | 0.00013 | 0.13 | 21.8 | 26 |
| The Global Open University | 882000 | 53 | 0.00006 | 0.06 | 18.7 | 27 |
| Krishnaguru Adhyatmik Viswavidyalaya | 1700000 | 88 | 0.00005 | 0.05 | 15.6 | 28 |
| Mahapurush Srimanta Sankardeva Viswavidyalaya | 44600 | 2 | 0.00004 | 0.04 | 6.2 | 29 |
| Venkateshwara Open University | 3940000 | 150 | 0.00004 | 0.04 | 6.2 | 29 |
| Apex Professional University | 55100 | 2 | 0.00004 | 0.04 | 6.2 | 29 |
| Manipur International University | 5110000 | 126 | 0.00002 | 0.02 | 3.1 | 32 |
| Assam Don Bosco University | 5670 | 0 | 0 | 0 | 0 | 33 |

8. Ranking Based on ELWIF: The External Web Impact Factor (EWIF) measures a university's global digital reach by calculating the ratio of external links to its total number of indexed web pages (NWP). To find this value, the number of web pages is identified via a Google domain search, and the total count of external links is retrieved using a website SEO

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checker tool. By dividing the number of external links by the total pages (NWP), universities are ranked in descending order, with higher scores reflecting a stronger level of external recognition and authority across the broader internet relative to the site's size.

Table 4 shows the ranking of the selected private universities based on their External Web Impact Factor (EWIF). The Institute of Chartered Financial Analysts of India University recorded the highest EWIF value, followed by Martin Luther Christian University and ICFAI University, showing a relatively stronger presence of external links in proportion to their web page size. The values of EWIF per 1000 pages and percentile rank also support this pattern among leading institutions. Conversely, several universities recorded an EWIF value of zero, indicating the absence of measurable external links. Among the universities with non-zero values, Krishnaguru Adhyatmik Visvavidyalaya, Venkateshwara Open University, and Manipur International University recorded the lowest EWIF values, despite having a large number of web pages. This suggests that external link visibility is not directly related to website size. The findings show that external web presence varies widely across institutions and that a higher number of web pages does not necessarily lead to greater external linkages.

Table 4: Ranking of Universities Based on External link WIF

| Name of the University | NWP | NEL | ELWIF | EWIF Per 1,000 Pages | Percentile Rank (%) | Rank |
|---|---------|-----|-----------|----------------------|---------------------|------|
| The Institute of Chartered Financial Analysts of India University (Mizoram) | 419 | 9 | 0.02147 | 21.47 | 100 | 1 |
| Martin Luther Christian University | 1580 | 24 | 0.01518 | 15.18 | 96.8 | 2 |
| ICFAI University (Nagaland) | 940 | 11 | 0.0117 | 11.7 | 93.7 | 3 |
| CMJ University | 1140 | 9 | 0.00783 | 7.83 | 90.6 | 4 |
| Sangai International University | 893 | 6 | 0.00671 | 6.71 | 87.5 | 5 |
| Indira Gandhi Technological and Medical Science University | 1100 | 6 | 0.00545 | 5.45 | 84.3 | 6 |
| Vinayaka Missions Sikkim University | 714 | 3 | 0.0042 | 4.2 | 81.2 | 7 |
| The Institute of Chartered Financial Analysts of India University (Meghalaya) | 1810 | 7 | 0.00386 | 3.86 | 78.1 | 8 |
| ICFAI University (Tripura) | 2990 | 11 | 0.00367 | 3.67 | 75 | 9 |
| Arunodaya University | 3010 | 8 | 0.00265 | 2.65 | 71.8 | 10 |
| Bir Tikendrajit University | 3200 | 8 | 0.0025 | 2.5 | 68.7 | 11 |
| The Institute of Chartered Financial Analysts of India University (Sikkim) | 1850 | 4 | 0.00216 | 2.16 | 65.6 | 12 |
| North East Adventist University | 4590 | 9 | 0.00196 | 1.96 | 62.5 | 13 |
| Arunachal University of Studies | 10900 | 15 | 0.00137 | 1.37 | 59.3 | 14 |
| The Assam Kaziranga University | 11300 | 9 | 0.00079 | 0.79 | 56.2 | 15 |
| Techno Global University | 27600 | 16 | 0.00057 | 0.57 | 53.1 | 16 |
| Himalayan University | 16800 | 7 | 0.00041 | 0.41 | 50 | 17 |
| University of Science & Technology, Meghalaya | 19700 | 8 | 0.0004 | 0.4 | 46.8 | 18 |
| Assam Down Town University | 54200 | 18 | 0.00033 | 0.33 | 43.7 | 19 |
| Mahatma Gandhi University | 177000 | 31 | 0.00017 | 0.17 | 40.6 | 20 |
| North East Christian University | 150000 | 3 | 0.00002 | 0.02 | 34.3 | 21 |
| Sikkim Manipal University | 706000 | 20 | 0.00002 | 0.02 | 34.3 | 21 |
| Manipur International University | 5110000 | 16 | 0.000003 | 0.003 | 31.2 | 23 |
| Venkateshwara Open University | 3940000 | 3 | 0.0000007 | 0.0007 | 28.1 | 24 |
| Krishnaguru Adhyatmik Visvavidyalaya | 1700000 | 1 | 0.0000005 | 0.0005 | 25 | 25 |
| Assam Don Bosco University | 5670 | 0 | 0 | 0 | 0 | 26 |
| Mahapurush Srimanta Sankardeva Viswavidyalaya | 44600 | 0 | 0 | 0 | 0 | 26 |

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| | | | | | | |
|--|--------|---|---|---|---|----|
| Apex Professional University | 55100 | 0 | 0 | 0 | 0 | 26 |
| North East Frontier Technical University | 4580 | 0 | 0 | 0 | 0 | 26 |
| William of Technology & Management | 15600 | 0 | 0 | 0 | 0 | 26 |
| St. Joseph University | 15800 | 0 | 0 | 0 | 0 | 26 |
| The Global Open University | 882000 | 0 | 0 | 0 | 0 | 26 |
| Shri Ramasamy Memorial University | 2990 | 0 | 0 | 0 | 0 | 26 |

9. Total Number of Rich Files: The rich files analysis and authority scoring provide a deeper look at the quality and influence of university websites by measuring their academic content and search engine reputation. To conduct the Rich Files Analysis, Google search queries are used to count specific document types—such as PDFs, PowerPoints, Excel sheets, and Word documents - which are then totaled to assess the volume of accessible resources. The search queries are made like for .pdf: www.website name.com file type: pdf, for .xls: www.website name.com file type: xls, for .doc: www.websitename.com file type: doc and for .ppt: www.websitename.com file type: ppt Simultaneously, Domain Authority (DA) and Page Authority (PA) scores are gathered via SEO tools to evaluate the overall strength and ranking potential of the university's domain and its individual pages. By combining the total count of professional file types with these authority scores, universities can be ranked based on both the richness of their digital library and their overall credibility in the eyes of search engines.

Table 5 shows the distribution of rich files across the selected private university websites, including PDF, PPT, XLS, and DOC formats. The results show considerable variation in the volume of rich files among institutions. Manipur International University recorded the highest number of files, followed by Venkateshwara Open University and the Sikkim Manipal University. The Values of files per 1000 pages and percentile rank also indicate a higher concentration of document-based content for these institutions. In contrast, universities such as The Global Open University, Bir Tikendrajit University, and Assam Don Bosco University reported relatively low numbers of rich-file documents. The normalized indicator further shows that some institutions with a smaller number of web pages maintain a higher density of files, while others with large websites do not show a proportionate increase in the document content. However, the unusually high values observed for some universities should be viewed carefully. These may be influenced by search engine indexing patterns, duplicate content, or repository-linked materials. The findings suggest that the availability of rich files varies widely across institutions and is not directly determined by website size.

Table 5: Total Number of Rich Files of the Universities

| University Name | NWP | PDF Files | PPT Files | XLS Files | DOC Files | Total Files | Files Per 1000 Pages | Percentile Rank (%) |
|--|---------|-----------|-----------|-----------|-----------|-------------|----------------------|---------------------|
| Assam Don Bosco University | 5670 | 4450 | 2710 | 3380 | 3210 | 13750 | 2425 | 63 |
| Assam Down Town University | 54200 | 7110 | 5260 | 5740 | 6040 | 24150 | 446 | 72 |
| Krishnaguru Adhyatmik Viswavidyalaya | 1700000 | 354000 | 102000 | 201000 | 283000 | 940000 | 553 | 91 |
| Mahapurusha Srimanta Sankardeva Viswavidyalaya | 44600 | 10400 | 3090 | 3700 | 6130 | 23320 | 523 | 69 |
| The Assam Kaziranga | 11300 | 3810 | 1770 | 1770 | 1910 | 9260 | 819 | 56 |

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| | | | | | | | | |
|---|---------|---------|--------|---------|----------|----------|------|-----|
| University | | | | | | | | |
| The Institute of Chartered Financial Analysts of India University (Mizoram) | 419 | 181 | 99 | 129 | 113 | 522 | 1246 | 0 |
| Bir Tikendrajit University | 3200 | 788 | 8 | 9 | 8 | 813 | 254 | 6 |
| Manipur International University | 5110000 | 928000 | 209000 | 1230000 | 18500000 | 20867000 | 4084 | 100 |
| Sangai International University | 893 | 632 | 8 | 415 | 9 | 1064 | 1191 | 9 |
| Apex Professional University | 55100 | 15600 | 7150 | 29600 | 31600 | 83950 | 1524 | 81 |
| Arunachal University of Studies | 10900 | 2830 | 1430 | 2020 | 8 | 6288 | 577 | 53 |
| Arunodaya University | 3010 | 623 | 443 | 478 | 458 | 2002 | 665 | 25 |
| Himalayan University | 16800 | 7220 | 2170 | 3430 | 4550 | 17370 | 1034 | 66 |
| Indira Gandhi Technological and Medical Science University | 1100 | 324 | 233 | 264 | 261 | 1082 | 984 | 13 |
| North East Frontier Technical University | 4580 | 1530 | 1050 | 1240 | 1130 | 4950 | 1081 | 50 |
| Venkateshwara Open University | 3940000 | 2300000 | 207000 | 818000 | 900000 | 4225000 | 1072 | 97 |
| CMJ University | 1140 | 1070 | 9 | 8 | 1050 | 2137 | 1875 | 28 |
| Mahatma Gandhi University | 177000 | 297000 | 144000 | 185000 | 238000 | 864000 | 4881 | 88 |
| Martin Luther Christian University | 1580 | 1280 | 730 | 964 | 1200 | 4174 | 2642 | 44 |
| North East Adventist University | 4590 | 340 | 188 | 1900 | 1900 | 4328 | 943 | 47 |
| Techno Global University | 27600 | 750 | 356 | 432 | 448 | 1986 | 72 | 22 |
| The Institute of Chartered Financial Analysts of India University (Meghalaya) | 1180 | 1600 | 8 | 8 | 1640 | 3256 | 2759 | 34 |
| University of Science & Technology, Meghalaya | 19700 | 13400 | 4860 | 16500 | 7160 | 38920 | 1976 | 78 |
| William of Technology & Management | 15600 | 10900 | 8 | 7020 | 9020 | 26948 | 1727 | 75 |
| ICFAI University | 940 | 642 | 9 | 590 | 576 | 1817 | 1933 | 19 |

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| | | | | | | | | |
|--|--------|--------|--------|--------|--------|---------|------|----|
| (Nagaland) | | | | | | | | |
| North East Christian University | 150000 | 28100 | 6460 | 22700 | 34100 | 91360 | 609 | 84 |
| St. Joseph University | 15800 | 1440 | 8 | 935 | 1160 | 3653 | 231 | 41 |
| The Global Open University | 882000 | 549 | 8 | 8 | 9 | 574 | 1 | 3 |
| ICFAI University (Tripura) | 2990 | 3880 | 2060 | 3610 | 3110 | 12660 | 4234 | 59 |
| Shri Ramasamy Memorial University | 2990 | 907 | 690 | 750 | 779 | 3126 | 1045 | 31 |
| Sikkim Manipal University | 706000 | 797000 | 217000 | 501000 | 783000 | 2298000 | 3255 | 94 |
| The Institute of Chartered Financial Analysts of India University (Sikkim) | 1850 | 955 | 761 | 830 | 822 | 3368 | 1821 | 38 |
| Vinayaka Missions Sikkim University | 714 | 396 | 303 | 320 | 330 | 1349 | 1889 | 16 |

10. Domain and Page Authority: Page authority means quality score of the Web pages (based on link metrics) and domain authority means quality score of the website (as a whole, based on link metrics.)

Table 6 shows the Domain Authority (DA) and Page Authority (PA) scores of the selected private universities, indicating the relative strength of their websites based on link metrics. Assam Don Bosco University recorded the highest Domain Authority score, followed by Himalayan University, North East Frontier Technical University, and ICFAI University, suggesting stronger overall domain-level presence. Several universities, including the Assam Kaziranga University and University of Science & Technology, Meghalaya, also showed relatively high DA values. In terms of Page Authority, Sikkim Manipal University recorded the highest score, followed by Assam Don Bosco University and ICFAI University. This indicates that some institutions maintain stronger individual web pages even when their overall domain authority is moderate. At the lower end, Bir Tikendrajit University, St. Joseph University, and The Global Open University recorded low values in both DA and PA, showing comparatively weaker web presence. The results also show that higher domain authority does not always correspond to higher page authority, suggesting variation in the strength of individual web pages within the same domain. The findings indicate moderate variation in both domain-level and page -level authority across the selected universities, reflecting difference in their web visibility and link-based strength.

Table 6: Domain and Page Authority of the University Websites

| Name of the Institutes | Domain Authority | Page Authority |
|---|------------------|----------------|
| Assam Don Bosco University | 79 | 39 |
| Himalayan University | 74 | 31 |
| North East Frontier Technical University | 74 | 21 |
| ICFAI University (Tripura) | 74 | 38 |
| The Assam Kaziranga University | 71 | 32 |
| CMJ University | 71 | 17 |
| Techno Global University | 71 | 18 |
| University of Science & Technology, Meghalaya | 71 | 34 |
| Vinayaka Missions Sikkim University | 71 | 19 |

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| | | |
|---|----|----|
| Assam Down Town University | 70 | 34 |
| Manipur International University | 70 | 13 |
| Shri Ramasamy Memorial University | 70 | 19 |
| Sikkim Manipal University | 70 | 46 |
| The Institute of Chartered Financial Analysts of India University (Sikkim) | 70 | 28 |
| The Institute of Chartered Financial Analysts of India University (Mizoram) | 69 | 25 |
| Martin Luther Christian University | 68 | 29 |
| Sangai International University | 64 | 11 |
| Mahatma Gandhi University | 64 | 33 |
| The Institute of Chartered Financial Analysts of India University (Meghalaya) | 64 | 26 |
| Venkateshwara Open University | 63 | 22 |
| Indira Gandhi Technological and Medical Science University | 62 | 19 |
| Arunachal University of Studies | 60 | 34 |
| Mahapurush Srimanta Sankardeva Viswavidyalaya | 59 | 22 |
| William of Technology & Management | 58 | 25 |
| Apex Professional University | 54 | 18 |
| Krishnaguru Adhyatmik Visvavidyalaya | 53 | 16 |
| North East Adventist University | 53 | 10 |
| North East Christian University | 53 | 17 |
| Arunodaya University | 51 | 18 |
| ICFAI University (Nagaland) | 46 | 28 |
| The Global Open University | 41 | 8 |
| St. Joseph University | 37 | 16 |
| Bir Tikendrajit University | 27 | 10 |

11. Conclusion: Websites play an important role in connecting universities with their users by providing information, services, and updates. This study shows significant variation in the web presence of private universities in North-East India. Manipur International University has the highest number of web pages, while the Institute of Chartered Financial Analysts of India University shows the highest values in both SWIF and IWIF, indicating stronger link-based visibility relative to its website size. In terms of rich files, Manipur International University reports the highest number, though such large values should be interpreted with caution. Assam Don Bosco University has the highest domain authority, while Sikkim Manipal University records the highest page authority. The findings suggest that having large number of web pages does not always lead to higher web impact. link presence, content structure, and eternal visibility also play an important role. the study provides a comparative overview of the selected university websites and highlights differences in their web performance using multiple indicators. It also helps in understanding the basic approach and application of webometric analysis in evaluating institutional websites.

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