RESEARCH ARTICLE

Content analysis of academic library website with special reference to the central universities in Northeast India

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Abstract

In this study, an assessment has been made to analyze the library website content of central universities in Northeast India. The current research is based on a checklist prepared using various criteria and assessments conducted by previous researchers. The methodology of the study includes the use of 'Yes' and 'No' criteria for content analysis, with data being tabulated and analyzed using Microsoft Excel. The analysis covers topics such as the availability of library websites or web portals, the accessibility of these websites, design factors, site descriptions, statements of responsibility/contact information, website aids and tools, e-resources, and Web 2.0 applications. This study highlights the varying degrees of website quality and services offered by central university libraries in Northeast India and provides a comprehensive assessment of their online presence.

Keywords: Library website, Web-content, E-resources, Web 2.0 applications.

Introduction

Developing and designing an effective website has been such a challenge as it needs profound technical knowledge, and greater experience that results in more efficiency and user friendly. The rapidly changing technology has added more to the challenge that most information seekers search the information online before visiting it physically. This necessitates the development of an accurate and efficient website or web portal where the credibility of such can be judged by the analysis of its contents. The application of Internet technology has brought a paradigm shift in libraries and the W3 has become a significant means of access and dissemination of information. Therefore, an ardent need to develop and update the websites is eventual. The library website is an important means through which the information about the library services provided and its collections are made available. A library must have a properly maintained, user-friendly, and interactive website that is updated regularly to provide the best and most accurate information without any hindrance. In other words, this will provide the appropriate information at the appropriate time and place. The Central Universities in NE India which are the main and premier educational institutions for higher education in the region have also equipped themselves with the modern technologies of the information age to satisfy the instant information needs of the users. Therefore, this analysis has focused on the problem of how usable the websites of the central universities by analyzing what are the contents of each library website and to what extent are the central universities in the region have adopted these facilities.

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Literature Review

Bao (2000) surveyed 143 homepages of academic library websites and advocated for the inclusion of a homepage link of a library on the website of the parent institution. This link would provide accessibility to free internet resources and online databases. The author also emphasized that making the online, web-based resources more visible and facilitating effective utilization could be achieved through the availability of the homepage link of the library on the homepage of the parent institution.

Gardner & Juricek *et. al.* (2008) in their analysis of 69 U.S. academic library webpages for faculty identified Johns Hopkins University as having the most content, securing the first place. The study revealed no statistical relationship between the size of collections and the features and content of web pages for faculty. Additionally, it was found that some of these libraries did not even have dedicated faculty pages. The researchers then suggested that implementing best practices could enhance the usefulness of these web pages for faculty.

Kannapanavar & Biradar (2011) studied 37 dental college websites in India and analyzed various aspects of their credibility. According to the researchers, web credibility refers to the perceived quality of a website by its users, and web evaluation is the process of assessing web credibility. The study concluded that regular and periodic evaluations of library pages, including aspects such as web design and accessibility arrangements, would improve the website's ability to efficiently meet the needs of its users.

Majumdar (2012) examined the library webpages of various institutes and universities of National Importance located in West Bengal to assess the utilization of web 2.0 applications for enhancing library services to users. The study reveals that five state universities lacked dedicated library webpages, and eleven state universities with library webpages had not integrated web 2.0 tools. The researcher emphasized the importance of addressing these issues and suggested the need for a larger-scale survey, more efficient implementation of web 2.0 technologies, and keeping the citizens abreast of the networked environment.

Khatri & Baheti (2013) explored 21 deemed universities located throughout the state of Maharashtra, analyzing various aspects of website credibility. The researchers aimed to emphasize the significance of website credibility and conducted a comparative analysis of these deemed university websites. An important issue highlighted by the researchers was the absence of update dates on the majority of the websites included in the study. They strongly believe that such data information is crucial for instituting credible websites, and its absence could potentially pose a significant concern.

Brahma & Verma (2018) performed a webometric analysis of 23 selected university library websites in India on the basis of NIRF data for the year 2017. The study focused on various aspects, including links, domain authority, and the number of web pages, as well as web impact factors such as the external web impact factor (EWIF), internal web impact factor (IWIF), and simple web impact factor (SWIF). The main results of the research show that the Birla Institute of Technology in Rajasthan claimed the top position in SWIF and IWIF with a score of 3309.52, while the "Indian Institute of Science" in Bangalore noted the greatest EWIF score at 11.67.

Gautam (2017) conducted a study of five central university libraries located in Delhi, analyzing their library websites with a specific focus on web technology applications in content analysis. The websites were examined using a comprehensive evaluation checklist. The study revealed the presence of well-developed websites with a wealth of electronic resources. It was found that the library websites at JNU offered the most comprehensive services and products. The study highlighted the crucial role that libraries play through their websites in higher education, research and development (R&D) activities and other domains.

Bharti & Madhusudhan (2019) conducted a qualitative evaluation of the content on the websites of JNU and BHU libraries. The checklist for the study encompassed various features, including the homepage, general information, services, resources, currency, web 2.0 technologies, links, and more. To assess their performance, the researchers employed a 5-point rating scale. As a result, JNU received a score of 120 (75.29%), while BHU only scored 74 (43.52%) out of a total possible score of 170. The study revealed that both library websites require improvements in certain areas to enhance user-friendliness and usability.

Tripathi & Kumar (2010) conducted a survey of 277 university library websites in countries such as the U.S.A., the U.K., Canada, and Australia focusing on the utilization of Web 2.0 tools. The researchers utilized a checklist prepared by Nguyen (2008) to evaluate these Web 2.0 tools. The analysis showed that blogs, instant messaging, and RSS were popular features in academic libraries. The researchers highlighted the significance of Web 2.0 tools and concluded by recognizing their strength in enhancing library services for users.

Devi & Verma (2016) proposed a conceptual approach for the web content analysis of library websites to enhance their web-based services. The researchers emphasized the significance of conducting web content analysis for academic libraries, particularly in the context of the current web-centric era. The study also identifies several key parameters, such as library content and services, information presentation pattern, usage of graphics and multimedia, currency of information, user-friendliness, and aesthetic appeal. They have outlined three major steps—content survey, content inventory, and content audit—as a means to identify, comprehend, and analyze the web content effectively.

In summary, these studies have addressed various aspects of websites, including content and credibility. However, there is a need for further study into the specific elements that contribute to the credibility of academic library websites and how these elements impact user trust and engagement. Future research could delve into user-centered evaluation methodologies, integrating user feedback and preferences to improve the usability and user-friendliness of these websites.

Objectives of the Study

To make a comprehensive study of the library website content of the central university of NE India.

Materials and Methods

Currently, there is no widely accepted standard or criteria for evaluating and analyzing library websites. Therefore, for this evaluation, a checklist has been prepared based on evaluation criteria and website assessments conducted by previous researchers, including Michalec (2006), Abdullah (2001), Qutub and Mahmoud (2009), Verma and Devi (2015), Shukla and Tripathi (2015), and Devi (2017). Devi (2017) adopted the criteria used by Shukla and Tripathi (2015) to perform content analysis in IITs and IIMs library websites. Those researchers utilized two variables, 'Yes' and 'No,' to study various conditions and criteria. In this study, the aforementioned 'Yes' and 'No' criteria were employed for the collection of data. The gathered data was scrutinized, tabulated, and analyzed with Microsoft Excel.

Data Analysis

Table 1 shows the state-wise distribution of the central Universities in NE India. A total of 9 central Universities under the "Ministry of Education" can be found in the region, out of which Assam has 2 central Universities and other states such as Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, and Arunachal Pradesh have 1 central university each (Table 2).

Table 1: Distribution of central Universities by state in Northeast India

State name	Universities number
Tripura	1
Sikkim	1
Nagaland	1
Mizoram	1
Manipur	1
Meghalaya	1
Arunachal Pradesh	1
Assam	2

University and library information

The information about the central university in the NER of India such as the university name e-library name, and the link to each library website and portal.

Availability of library website/web portal

The availability of the library on the web has been classified into library websites or the web portal as found among the central university libraries in NE India. Table 3 shows whether a university library has a website or a web portal and the percentage of each type respectively, used among the libraries.

From Table 3, it is observed that among all the central universities in NE India, 22.22%, i.e., Assam and Sikkim University have a library website while 77.78% of the universities libraries namely Tezpur University, Mizoram University, Manipur University, Nagaland University, NEHU, RGU, and Tripura University have a web portal.

Accessibility of website/portal

Web accessibility refers to how a user can interact, navigate, and perceive the web. In other words, it refers to the overcoming of barriers that prevent interaction between users and the website. Two parameters, i.e., direct link of the parent homepage and link under facilities have been identified for accessibility of the website or the portal.

It is found from the table that the link for the library website given on the parent websites' homepage directly is available only in two universities, i.e., Nagaland University and Tripura University which comprise 22.22% was shown in Table 4 while in the other universities which comprises of 77.78% of the universities, namely Mizoram University, Manipur University NEHU, RGU, Sikkim University and Tripura University have Link under facilities/quick links, etc. in fact the Rabindra Library of Assam University website is available only by Google search.

Design factor

The researcher has considered three parameters of design factor namely view resolution, browser compatibility, and no. of visitors for this study. Table 5 describes the

Table 2: Surveyed universities of NE India

S. No	University name	Central library name	University website/Portal link
1	Tripura University	Central library	https://www.tripurauniv.ac.in/Home/CentralLibraryIndex
2	Tezpur University	Central library	http://www.tezu.ernet.in/Library/index.ph p
3	Sikkim University	Central library	https://library.cus.ac.in/index.php/47-2/
4	RGU	Central library	https://www.rgu.ac.in/ext_uploads/library/index.html
5	NEHU	NEHU central library	https://www.nehu.ac.in/library/index.html
6	Nagaland University	Central library	https://library.nagalanduniversity.ac.in/
7	Mizoram University	Central Library Mizoram University	https://library.mzu.edu.in/
8	Manipur University	Manipur university library	https://www.manipuruniv.ac.in/p/library
9	Assam University	Rabindra central library	http://www.aus.ac.in/library/

https://www.ugc.gov.in

Table 3: Web-component of the library

Criteria	No. of universities	Percentage
Library website	2	22.22
Library web portal	7	77.78
Total	9	100

Source: Survey Data

Table 4: Criteria for web accessibility

Criteria	Number of universities	Percentage
Direct link on the parent homepage	2	22.22
Linkunder facilities/quick links, etc.	7	77.78
Total	9	100

Source: Survey Data

Table 5: Parameters of design factor

Criteria	No. of universities	Percentage
View resolution	1	11.11
Browser compatibility	1	11.11
No. of visitor	3	33.33

Source: Survey Data

Table 6: Parameters of site description

Criteria	No. of universities	Percentage
Use of graphic	7	77.78
Animation	4	44.44
Text only	2	22.22

Source: Survey Data

classification and composition of the parameters under the design factor.

View resolution is the first parameter; view resolution differs in size and design. As observed from the Table 5, only 1 university (11.11%) i.e., NEHU have view resolution suggested for their library website/Portal. In the second parameter of browser compatibility, only 1 university library (11.11%) has suggested browser compatibility for its users and it is NEHU again. The no. of the visitor is the third parameter taken into consideration. From the Table 5, it is observed that 3 university libraries (33.33%) among the central universities in NE India have given the footfall numbers in their library websites/portals. These are Nagaland University, Tezpur University, and Tripura University. Thus as given in Table 5 and discussed the first and second parameters were met only by 1 central university library i.e., 11.11%, and 3 central university libraries (33.33%) met the third parameter out of all the libraries of central universities in NE India.

Site description

The researchers have also analyzed the site description on the basis of three parameters which are the use of graphics along with text, the use of animation effects, and the only

text version of the website. The use of graphic and animation make the site attractive but one has to keep in mind that such effects also impact the site's download speed. As larger the site, the slower the download speed. While only text sites have faster download speeds it also makes the site boring for the visitors. Thus considering these things a little bit of graphics added can make it attractive for the site. The provision of these parameters on the library websites.

As shown in Tables 6 and 7 university libraries i.e. 77.78% of the central universities in NE India use graphics on their library website. They are Tripura University, Sikkim University, RGU, Mizoram University, Tezpur University, and Assam University. Animation is the second parameter where 4 university libraries which are 44.44% of the 9 central universities in NE India taken into account have employed animation of graphics. They are Tripura University, Tezpur University, Sikkim University, and Mizoram University. Thirdly, it is of common understanding that, library websites without graphics will be only text sites in communicating with the visitors/clientele and to disseminate information needed by the clientele. As given in the Table 2 university library websites have only text versions of the site. They are Manipur University and Nagaland University.

Statement of responsibility/contact information

Here the statement of responsibility refers to those authorities whom to contact for queries by the clientele for any requirements. In this criteria, availability of five parameters, namely postal address, phone number. Fax, email, and separate links for contact on the library website/ portal of the central universities in NE India were taken into account. The details of the various parameters are revealed in Table 7.

As given in the table, it is observed that 6 university libraries i.e., 66.67% of the surveyed libraries have given postal address in their library website. They are RGU, NEHU, Tezpur University, Nagaland University, Sikkim, and Tripura University.

It is also found that for the phone no. parameter, university libraries which are 66.67% of the Central Universities in NE India have provided the phone no. on their site. They are Tezpur University, Mizoram University, NEHU, RGU, Sikkim University, and Tripura University.

Only 2 university libraries of the central universities in NE India which is 22.22% have given the fax number on their website or portal.

Table 7: Parameters of statement of responsibility

Criteria	No. of universities	Percentage
Postal address	6	66.67
Phone no.	6	66.67
Fax	2	22.22
Email	7	77.78
A separate link for contact	6	66.67

Source: Survey Data

They are Mizoram University and Sikkim University. Another parameter is the email and from the study, it is found that 7 university libraries i.e., 77.78% of the central university libraries in NE India have provided the email of the personnel on their site. They are Tripura University, Tezpur University, RGU, Sikkim University, Nagaland University, Mizoram University, and Manipur University.

The study also checked whether separate links for contacts were given on their websites and found out that 6 university libraries i.e., 66.67% of the central universities in NE India have provided a separate link for contact on their library site. They are RGU, NEHU, Tripura University, Tezpur University, Nagaland, and Sikkim University.

Website/portal aid and tool
Website aid and tool helps the visitors of a website to easily retrieve the information they are looking for quickly and simply. The researcher considered four parameters under this criterion which include search option, sitemap, FAQ, and feedback. Their availability on the website is given in Table 8

The first parameter is the search option, and as per the research, it was noted that on 3 library websites which is 33.33% of the central Universities in NE India have the search option incorporated on their library website and portal. They are NEHU, Sikkim University, and Tezpur University.

The second parameter in his criteria is the sitemap, which helps a visitor to navigate the website easily by organizing the hierarchical list of the page with the links. For this parameter, it was found that 5 library websites i.e., 55.56% of the Central Universities in NE India have a sitemap provided on their library site. The universities are Mizoram University, Manipur University, RGU, Tezpur University, as well as Sikkim University. To find the availability of the sitemap; the researchers use the help of an online analysing site which is available at https://seositecheckup.com/.

Frequently asked questions (FAQ) is the third parameter in the website aid and tools criteria where it was found that 5 University libraries, which is 55.56% of the total central universities in NE India have put FAQs on their library site. They are Mizoram, NEHU, Sikkim University, and Tezpur University.

And fourthly, feedback is the fourth parameter studied, and it is found that only 2 library websites, i.e., 22.22% of the central universities in NE India have the feedback option on their site. The university library website which provides feedback is Nagaland University and Tezpur University.

Page authority information
When a website gives information about the creator or the authority of the website, it increases the reliability of the site. Since a website can be created by anyone, giving the authority information is very important. In accordance with this, users or visitors verify the authenticity of the information to decide whether they should rely on and use

Table 8: Criteria for Website aid and tool

Criteria	Number of library websites	Percentage
Search option	3	33.33
Site map	5	55.56
FAQ	5	55.56
Feedback	2	22.22

Source: Survey Data

Table 9: Web site authority

Criteria	No. of websites	Percentage
Copyright	6	66.67
Developed and maintained by	4	44.44

Source: Survey Data

Table 10: Resources on the web

E-resources	No. of libraries	Percentage
E-books	8	88.89
e-journals	8	88.89
Online database	8	88.89
Institutional repository	7	77.78
Consortium	8	88.89

Source: Survey Data

that information or not. Two important parameters were taken in account in this criterion. They are the copyright statement and the developed and maintenance details. It is illustrated in the Table 9.

It was found from the research that 6 university library website, i.e., 66.67% of the total central universities in NE India provides copyright details on the library website while only 4 library website, i.e., 44.44% of the total central university in NE India provides information on developed and maintenance of the library website. The university library websites that provide copyright information are Tripura University, Tezpur University, Sikkim University, Nagaland University, Mizoram, and Manipur University. Those university library websites give information developed and maintained by Nagaland, Tezpur, Sikkim, and Tripura University. The page authority information is graphically shown in the graph.

E-resources
Under this criterion, many parameters have been identified by the researchers for this study. The various parameters and their status of use are given in Table 10.

E-books are those books in digital or electronic versions. In the survey, it was found that 8 libraries i.e., 88.89% of the Central Universities in NE India namely, Tezpur University, Mizoram University, Manipur University, Nagaland University, NEHU, RGU, Sikkim University, and Tripura University, all have provided information on e-books, e-journal as well as an online database on their library website or portal.

As per the Table 7 libraries i.e., 77.78% of the central universities have provided information about institutional repositories on their library website or portal. They are Sikkim University, NEHU, Nagaland University, Manipur University, Mizoram University, Tripura and Tezpur University.

Since the price of e-resources is very high, it is quite impossible for a library to subscribe to all the e-resources, therefore libraries opt and go for consortium to share the resources among themselves and make the clientele use the e-resources available through the consortia. It is found from the study that 8 libraries i.e., 88.89% of the central universities in NE India namely, Mizoram University, Tezpur University, Manipur University, Nagaland University, NEHU, RGU, Sikkim University, and Tripura University, all using consortium facilities.

Value-added services

The value-added services (VAS) refers to those services that add value to the library services and help in generating more clients to the library and its webpage. 7 parameters are investigated under this criterion. The VAS are discussed in Table 11.

Open access resource is the first parameter here, and through the study, it is found that 7 university libraries and 7 libraries, i.e., 77.78% of the central universities in NE India provide links to open access resources on their library website/portal. They are Mizoram University, Manipur University, Nagaland University, NEHU, Tezpur University, Sikkim, and Tripura University. While, 4 university libraries namely, Nagaland University, Tezpur University, Sikkim University, and Tripura University provide new arrival information. The study also found that It is found from the study that eight libraries, i.e., 88.89% of the central universities in NE India namely, Tezpur University, Mizoram University, Manipur University, Nagaland University, NEHU, RGU, Sikkim University, and Tripura University, provides both links to other repositories and plagiarism check on their library website, while intranet facility information is given only by three university libraries namely Tezpur University, Nagaland University and Mizoram University.

Web 2.0 facility

Web 2.0 in simple words, refers to the 2nd generation of the W3 (WWW) with its emphasis on participatory culture, user-generated content, and interoperability for the end users. The application of Web 2.0 is very significant as it helps in serving the users and providing the services to a larger community (Table 12). For this study, the researchers checked the application of Web 2.0 on the library websites of the surveyed university libraries, for which the application of 7 Web 2.0 tools, was considered for the research. The various tools are RSS, Facebook, YouTube, Twitter, Blog, Chat, and Instagram.

Table 11: Availability of value added services

VAS	Number of libraries	percentage
Open Access Resources	7	77.78
New Arrival	4	44.44
Link to other repositories	8	88.89
Plagiarism check	8	88.89
Intranet	3	33.33
Federated Search	4	44.44
Virtual Library Tour	1	11.11

Source: Survey Data

Table 12: Adoption of Web 2.0 tools

Web 2.0 tools	No. of libraries	percentage
RSS	0	11.11
Facebook	5	55.56
YouTube	2	22.22
Twitter	1	11.11
Blog	1	11.11
Instagram	0	0

Source: Survey Data

From the study, it is found that no libraries have applied or are using RSS and Instagram. 5 university libraries, namely Tezpur University, Mizoram University, RGU, Sikkim University, and Tripura University are using Facebook, while the libraries of Tezpur University and Tripura University are also on YouTube. It is also found that Twitter, Blog, and Chat are used by Tezpur University, but no other university library has applied these tools.

Major findings

It is found that only the NEHU library website gives the best view resolution and browser compatibility information. According to it, the library webpage of the library is best viewed with IE8/Google Chrome and 1024x768 screen resolutions, while library portals of Tezpur University, Nagaland University, and Tripura University show the number of visitors. Information on any of these parameters has not been provided by the library website and portals of Assam, Mizoram, Manipur, Rajiv Gandhi, and Sikkim University.

The statement of responsibility information is not given by Rabindra central library of Assam University, while, the library websites of Manipur University, Mizoram University, and Rabindra Central Library of Assam University have not given any information about the postal address as well as no separate link for contact. Information on Phone no. is not provided by the library websites of Assam University, Manipur University, and Nagaland University, and no email information by the library websites of NEHU and Rabindra central library of Assam University. Fax detail is given only by Mizoram University and Tezpur University library website.

Regarding the helping and aiding tools on the library website, no such tools were available on the website of Rabindra central library of Assam University. The sitemap tool is available on the library websites of Mizoram University, Tezpur University, Manipur University, RGU, and Sikkim University. While the library websites of NEHU, Sikkim University, and Tezpur University provide search option; FAQ is available on the library websites of Mizoram University, NEHU, Sikkim University, Tripura, and Tezpur University. And feedback facility is given only on the library websites of Nagaland University and Tezpur University

Copyright information of the website is provided by 6 university library websites and maintenance information by 4 library website while only 3 university library website provides data of updated information.

Sikkim University and Tezpur University have given information on all the parameters except the location guide map. Tripura University has also given information on all parameters except that of the photo gallery and location guide map. All information except that of the photo gallery, news, and events is given to NEHU while Nagaland University and Rajiv Gandhi University did not give information on the floor plan and photo gallery. The aim and floor plan are missing on Mizoram University, while Manipur University gives information only on, timing and membership.

All the University libraries except Assam University have given information about their collection of books and journals in the print format while Assam University, Manipur University, and the NEHU library website did not provide the reference sources. With regards to the collection in electronic format, all the university libraries except Assam University have provided information on its e-resource parameters like e-books, e-journals, online databases, IR, and consortium. Along with the Assam University Library, the Rajiv Gandhi University Library also did not give information about institutional repositories.

It is also found that almost all the libraries except Assam University offer general services such as circulation, reprographics, bibliographic links to OPAC, plagiarism checks, links to repositories, etc. The information on Ask-A-Librarian is given only to Mizoram University and Tezpur University. Sikkim University offers a special service of giving users a virtual library tour.

It is also found that web 2.0 tools like YouTube, and Facebook were applied by Tezpur University, Mizoram University, RGU, Sikkim University, and Tripura University. Tezpur University also applies more Web 2.0 applications such as Twitter, Blog, and Chat.

Conclusion

It is found from the study that most libraries have portals instead of separate websites. These portals are often linked under "facilities" or "services" rather than having direct links on the parent institute's homepage. It is found that there is limited information available regarding design factors, and many web pages contain graphics aimed at attracting users. However, a significant shortcoming is the absence of update dates; only 3 out of the 9 library websites surveyed provided this information. Most library websites and webpages do offer general information, including details about collections such as books, journals, e-resources, online databases, consortia, and institutional repositories. They also provide information about various services offered by the library, both in physical and virtual formats. While the structure, design, and application of library websites may not be entirely satisfactory, the information regarding collections and services is somewhat adequate in some cases. Nevertheless, there is room for improvement in these areas. To address the deficiencies identified, further research is necessary and suggested recommendations can be employed to enhance the quality of library websites.

Reference

Assam University. (n.d.). Retrieved from http://www.aus.ac.in/library/

Bao, X. M. (2000). Academic Library Home Pages: Link Location and Database Provision. *Journal of Academic Librarianship*, 26(3), 191-195. http://pirate.shu.edu/~baoxuemi/bao2000-05.pdf

Bharati, S. K., & Madhusudhan, M. (2019). Content evaluation of Jawaharlal Nehru University and Banaras Hindu University Library Websites in India. *Library Philosophy and Practice (e-journal),* 2290. doi: https://digitalcommons.unl.edu/libphilprac/2290

Brower, S. M. (2004). Academic Health Sciences Library Website Navigation: an analysis of forty-one Websites and their navigation tools. *Journal of the Medical Library Association*: *JMLA*, 92(4), 412–420. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC521512/

Devi, K. K. (2017). Institutes of Technology IITs and National Institutes of Technology NITs Libraries Website: An Evaluation (Doctoral Thesis). Mizoram University, Shodhganga@INFLIBNET. http://hdl.handle.net/10603/247422

Devi, K. K., & Verma, M. K. (2016). Conceptual Approach of Web Content Analysis: A Tool to Analyze Library Websites to Improve their Web-Based Services in Academic Institutions. In D. K. Shrivastava, A. K. Jharotia, V. Bansal, & R. Mittal (Eds.), International Conference on Contemporary Innovations in Library Information Science, Social Science and Technology for Virtual World, 132-138. Delhi: Modern Rohini Education Society.

Gardner, S. J., Juricek, J. E., & Xu, F. G. (2008). An Analysis of Academic Library Web Pages for Faculty. *The Journal of Academic Librarianship,* 34(1), 16–24. https://doi.org/10.1016/j.acalib.2007.11.006

Gautam, V. K. (2017). Content analysis of websites of Central University libraries in Delhi: India. International Journal of Information Movement, 2(6), 82-89.

Islam, A., & Tsuji, K. (2011). Evaluation of Usage of University Websites in Bangladesh. *DESIDOC Journal of Library & Information Technology*, 31(6), 469-479. https://doi.org/10.14429/djlit.31.6.1322

June Rod-Welch, L. (2012). Incorporation and visibility of reference and social networking tools on ARL member libraries' websites. *Reference Services Review*, 40(1), 138-171. https://doi.org/10.1108/00907321211203694

Kannappanavar, B. U., & Biradar, S. B. (2011). Credibility of Dental College Websites in Karnataka. *International Journal of Digital Library Services,* 1(1), 62-70. http://www.ijodls.in/uploads/3/6/0/3/3603729/ijodls06111.pdf

Khatri, A. B., & Baheti, S. R. (2013). Evaluative Study of University Web Sites and their Library Web Pages. *International Journal of Digital Library Services*, 3(1), 1-11. http://www.ijodls.in/uploads/3/6/0/3/3603729/part_1.pdf

Madhusudhan, M. (2012). Content Evaluation of Indian Institutes of Technology Library Websites in India. *World Digital Libraries: An International Journal*, 5(2), 1-20. https://www.du.ac.in/du/uploads/Faculty%20Profiles/2016/LibraryScience/May2016_DLIS_MMadhusudhan.pdf

Majumdar, S. (2012). Web 2.0 Tools in Library Web Pages: Survey of Universities and Institutes of National Importance of West Bengal. *DESIDOC Journal of Library & Information Technology,* 32(2). https://doi.org/10.14429/djlit.32.2.1594

Manhas, J. (2015). A Comparative Study of Design and Development Issues in Various Websites (Ph.D. Thesis). University of Jammu. http://hdl.handle.net/10603/125437

Manipur University. (n.d.). Retrieved from https://www.manipuruniv.ac.in/p/library

Michalec, M. (2006). A Content Analysis of Art Library Web Sites. Art *Documentation: Journal of the Art Libraries Society of North America,* 25(2), 46–54. http://www.jstor.org/stable/27949440

Mizoram University. (n.d.). Retrieved from https://library.mzu.edu.in/

Nagaland University. (n.d.). Retrieved from https://library.nagalanduniversity.ac.in/

NEHU. (n.d.). Retrieved from https://www.nehu.ac.in/library/index.html

Rajiv Gandhi University. (n.d.). Retrieved from https://www.rgu.ac.in/ext_uploads/library/index.html

Rocha, Á. (2012). Framework for a global quality evaluation of a website. *Online Information Review*, 36(3), 374-382. https://doi.org/10.1108/14684521211241404

Sikkim-University. (n.d.). Retrieved from https://library.cus.ac.in/

Still, J. M. (2001). A content analysis of university library Web sites in English-speaking countries. *Online Information Review,* 25(3), 160-165. https://doi.org/10.1108/14684520110395281

Tripathi, M., & Kumar, S. (2010). Use of Web 2.0 tools in academic libraries: A reconnaissance of the international landscape. *The International Information & Library Review*, 42(3), 195-207. https://doi.org/10.1016/j.iilr.2010.07.005.

Yumnam, G., & Singh, C. I. (2021). Content analysis of library websites of central universities of North East India. *IP Indian Journal of Library Science and Information Technology*, 6(1), 9-13. https://doi.org/10.18231/j.ijlsit.2021.003