INTERNATIONAL JOURNAL FOR INNOVATIVE RESEARCH IN MULTIDISCIPLINARY FIELD ISSN: 2455-0620 Volume - 7, Issue - 8, Aug – 2021
Monthly, Peer-Reviewed, Refereed, Indexed Journal with IC Value: 86.87 Impact Factor: 6.719
Received Date: 12/08/2021 Acceptance Date: 27/08/2021 Publication Date: 31/08/2021

Content analysis of Library Websites of top NIRF-ranked Universities of India

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Abstract: *In this era of digital technology, it is extremely important that the libraries at university level should share the information about the activities, facilities, collections and services to their users through well designed and attractive websites. The usefulness of library a website depends upon the authoritative, accurate and up-to-date content provided by it. The library websites content of top universities of India were assessed in this study and necessary improvements were suggested to enhance the quality of content concerning its coverage and usability features. The procedure followed in this study is a content analysis technique and the study was carried out in four steps. The study used 88 content criteria to describe the type of information provided by the library websites to their user community. The researcher has suggested crucial measures which can be adopted by content developers of library websites while developing and updating the library websites.*

Key Words: *Content Analysis, University Library, Library Website, Library website content analysis, Web Content Analysis*

1. INTRODUCTION:

Websites serve as crucial communication channels in the digital age, allowing information to be efficiently transmitted to any area of the globe. Due to this organizations including academic institutions have developed websites to provide various services to their academic community. The libraries of these academic institutions are also sharing a variety of information, information sources and services, required by their users through well designed and attractive websites. The usefulness of library a website depends upon the authoritative, accurate and up-to-date information provided by it, about its collection, services, facilities and policies. These kinds of information available in the website are collectively referred to as the content of the library website. The richness of the library website depends upon the quality of its content.

The technique used for making replicable and valid inferences from some qualitative data is kown as content analysis (Krippendorff, 1980). This content analysis technique can also be applied to analyse the content of any website. It seems reasonable that content analysis method can also be applied to library websites content. The examination of library website content showed to be advantageous in a broader sense in terms of improving website content quality (Kim & Kuljis, 2010). According to Khatri and Baheti's (2013) research, library pages should be assessed on a regular basis using established criteria in order to increase their credibility and dependability. Many research have already been undertaken to evaluate the content of library websites, according to the literature study (for example Mahalaxmi, 2015; Devi & Verma, 2016; Savitha, 2016; Gadhavi, 2017; Kumbhar, 2018). These content analysis studies helped to improve the usability features of libraries (Verma & Shukla, 2018).

The current study looks into the content of top Indian university library websites in order to analyse the status and coverage of those websites' contents and make recommendations for improvements. The research will greatly aid in demonstrating the content coverage and features of the library websites of India's top-ranked universities of India.

1.1. OBJECTIVES:

The specific objectives of this study are as follows:

- To examine the library websites of India's top-ranked universities.
- To come up with a set of criteria for evaluating the content of university library websites.
- To figure out what kind of information the university library websites supply.
- To make recommendations for improving university library websites
- To make suggestions for significant web content of university library websites.

2. METHODOLOGY:

The procedure followed in this study is a content analysis technique applied to the content of library websites and a judgemental sampling technique has been used as per the requirement of the study. The sample for the study includes the university library websites of India selected from the list of top-ranked universities. The ranking list (i.e.

India Rankings 2020: University) published in the NIRF website (https://www.nirfindia.org) for the year 2020 was considered for identifying the top universities. For this study, the library websites of top 50 universities were selected as the final sample. The list of criteria was prepared to examine various content features of the sample websites. This list comprises 88 criteria, which was identified and adapted from the previous studies, during the review of related literature. All these criteria again classified into 8 categories of information based on their relevancy. The library websites were accessed by using their web links and the criteria indentified were measured by observing their occurrence in the library websites. The presence and absence of particular criteria in a library website was represented by 'Y' and 'N' respectively. After measuring all the criteria for all the sample websites, the 'Y-frequency' and 'N-frequency' for each criterion was calculated. The analysis of the data collected in step 3 was carried out by using standard descriptive statistics techniques to assess the content of library websites and finally obtain important results of the study.

3. ANALYSIS AND RESULTS:

The demographic statistics of the sample reveals that there are 16 State Universities (32%), 15 Deemed Universities (30%), 14 Central Universities (28%) and 5 Private Universities (10%) in the top 50 list of NIRF rank 2020.

Table 1: List of NIRF-ranked top 50 Universities and their Library Link

Rank	Name of University	State	Library Link
1	Indian Institute of Science	Karnataka	https://library.iisc.ac.in/
2	Jawaharlal Nehru University	Delhi	http://lib.jnu.ac.in/
3	Banaras Hindu University	Uttar Pradesh	https://www.bhu.ac.in/lib/
4	Amrita Vishwa Vidyapeetham	Tamil Nadu	https://www.amrita.edu/amritapuri/department/central-library/
5	Jadavpur University	West Bengal	https://www.soa.ac.in/library
6	University of Hyderabad	Telengana	http://igmlnet.uohyd.ac.in:8000/
7	Calcutta University	West Bengal	https://www.culibrary.ac.in/
8	Manipal Academy of Higher Education	Karnataka	https://manipal.edu/mu/campus-life/around-campus/campus-facilities/libraries.html
9	Savitribai Phule Pune University	Maharashtra	http://lib.unipune.ac.in:8002/
10	Jamia Millia Islamia	Delhi	https://www.jmi.ac.in/zhlibrary
11	University of Delhi	Delhi	http://www.du.ac.in/du/index.php?page=libraries
12	Anna University	Tamil Nadu	https://library.annauniv.edu/
13	Bharathiar University	Tamil Nadu	http://www.b-u.ac.in/Home/Library
14	Homi Bhabha National Institute	Maharashtra	http://www.hbni.ac.in
15	Birla Institute of Technology & Science	Rajasthan	https://www.bits-pilani.ac.in/library
16	Vellore Institute of Technology	Tamil Nadu	https://vit.ac.in/academics/library
17	Aligarh Muslim University	Uttar Pradesh	https://www.amu.ac.in/libraries/maulana-azad-library
18	Institute of Chemical Technology	Maharashtra	https://www.ictmumbai.edu.in/DisplayPage.aspx?page=q
19	Andhra University	Andhra Pradesh	https://www.andhrauniversity.edu.in/central-facilities/library
20	Siksha `O` Anusandhan	Odisha	https://www.soa.ac.in/library
21	Jamia Hamdard	Delhi	http://www.jamiahamdard.ac.in/LibrayInformationSystem/
22	University of Madras	Tamil Nadu	https://www.unom.ac.in/index.php?route=library/library
23	Kerala University	Kerala	http://www.kulib.in/

24	Kalinga Institute of Industrial Technology	Odisha	http://library.kiit.ac.in/
25	Shanmugha Arts Science Technology & Research Academy	Tamil Nadu	https://www.sastra.edu/2014-01-29-07-16-45/library.html
26	Panjab University	Chandigarh	https://library.puchd.ac.in/
27	Mysore University	Karnataka	http://uni-mysore.ac.in/english-version/library/
28	Sri Ramachandra Institute of Higher Education And Research	Tamil Nadu	https://www.sriramachandra.edu.in/university/library
29	Osmania University	Telengana	https://www.osmania.ac.in/studentsupport-library.php
30	Mahatma Gandhi University	Kerala	http://library.mgu.ac.in/
31	Thapar Institute of Engineering & Technology	Punjab	http://cl.thapar.edu/index.php
32	King George`s Medical University	Uttar Pradesh	http://www.kgmu.org/campus_library.php
33	JSS Academy of Higher Education and Research	Karnataka	https://jssuni.edu.in/JSSWeb/WebShowFromDB.aspx?MID=14005&CID=0&PID=10005
34	Tata Institute of Social Sciences	Maharashtra	http://library.tiss.edu/
35	S. R. M. Institute of Science and Technology	Tamil Nadu	https://www.srmist.edu.in/content/library
36	Alagappa University	Tamil Nadu	http://ws.alagappauniversity.ac.in/lib/
37	Amity University Noida	Uttar Pradesh	http://auup.amity.edu/infra-library.aspx
38	Sri Venkateswara University	Andhra Pradesh	https://www.svuniversity.edu.in/Campus/Library.aspx
39	Sathyabama Institute of Science and Technology	Tamil Nadu	https://www.sathyabama.ac.in/academics/library
40	Tezpur University	Assam	http://www.tezu.ernet.in/Library/
41	Koneru Lakshmaiah Education Foundation University	Andhra Pradesh	https://www.kluniversity.in/lib/default.aspx
42	Saveetha Institute of Medical and Technical Sciences	Tamil Nadu	http://www.saveetha.com
43	Symbiosis International	Maharashtra	https://siu.edu.in/library/
44	Gujarat University	Gujarat	http://gulibrary.com/
45	Delhi Technological University	Delhi	http://library.dtu.ac.in/
46	Dr. D. Y. Patil Vidyapeeth	Maharashtra	http://www.dpu.eedu.in
47	Gauhati University	Assam	https://www.gauhati.ac.in/academic/library/kk-handiqui-library
48	University of Kashmir	Jammu & Kashmir	http://ail.uok.edu.in/Main/Default.aspx
49	North Eastern Hill University	Meghalaya	http://www.nehu.ac.in/library/index.html
50	Visva Bharati University	West Bengal	http://vbulnet.lsdiscovery.in/

Table 1 shows the list of selected universities along with their library links. These links were available in the website of their parent institutions (Figure1) and it was observed that most of the library website could be accessible

through the link provided at their Home page (58%) followed by Central facilities (21%), Library image (13%) then Campus life (6%).

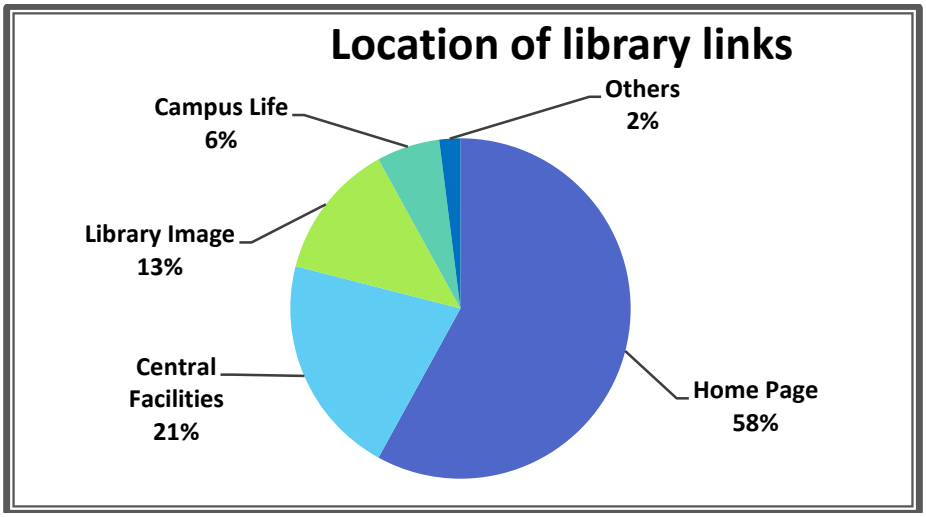

Figure 1: Library website access from parent website

Out of the 50 university library websites, 48 were accessible and two websites of the universities namely, Homi Bhabha National Institute and Saveetha Institute of Medical and Technical Sciences could not be accessed during the data collection, which may be due to any temporary technical issues. It was observed that the JSS Academy of Higher Education and Research is not having an independent separate website for the library.

Table 2: List of Criteria for Library Website Information

S. N.	Library Website Information	Y-Freq.	Y-Avg.	N-Freq.	N-Avg.	Y-Cum.	N-Cum.
1	Copyright	39	81%	9	19%	39	9
2	Disclaimer	10	21%	38	79%	49	47
3	Multi-lingual Option	6	13%	42	88%	55	89
4	Update date	7	15%	41	85%	62	130
5	Visitor Counter	16	33%	32	67%	78	162
6	Website map	6	13%	42	88%	84	204

Table 2 shows that 81% of university library websites provide copyright information. The websites visitor counter feature used to count the number of people visits the website is provided by 33% of library websites. The content update feature enhances the accuracy and currency of the website content. It is quite unexpected that only 15% of websites are having information about their content update. Furthermore, 88% websites are not having multi-lingual facility and provision of website map.

Table 3: List of Criteria for Library General Information

S. N.	Library General Information	Y-Freq.	Y-Avg.	N-Freq.	N-Avg.	Y-Cum.	N-Cum.
1	About Library	34	71%	14	29%	34	14
2	Annual report	10	21%	38	79%	44	52
3	Contact details	20	42%	28	58%	64	80
4	Floor map	20	42%	28	58%	84	108
5	History	29	60%	19	40%	113	127
6	Librarian Contact	33	69%	15	31%	146	142
7	Library committee	13	27%	35	73%	159	177
8	Library name	48	100%	0	0%	207	177
9	Library Postal address	47	98%	1	2%	254	178
10	Library rules	34	71%	14	29%	288	192
11	Link to departmental library	26	54%	22	46%	314	214
12	Location	24	50%	24	50%	338	238
13	Memberships	35	73%	13	27%	373	251
14	News & events	21	44%	27	56%	394	278

15	Newsletter	6	13%	42	88%	400	320
16	Objective	23	48%	25	52%	423	345
17	Staff Contact	10	21%	8	17%	433	353
18	Staff directory	31	65%	17	35%	464	370
19	Statistics	6	13%	42	88%	470	412
20	Vendor List	4	8%	44	92%	474	456
21	Working hour	31	65%	17	35%	505	473

Table 3 contains list of content elements under general information category, which the university libraries provide to their users. Almost all of the library websites under investigation, as predicted, reflect the library's name (100%) and the postal address (98%) in their websites. Some of the other content elements such as membership (73%), about library (71%), librarian contact (69%), library rules (71%), staff directory (65%) and working hour (65%) were found in many library websites. There are 26 out of 48 library websites having link to their departmental libraries (54%). Further it was found that information about vendors list (92%), library committee (73%), library statistics (88%), reports (79%) and staff contact (79%) are not provided by many library websites.

Table 4: List of Criteria for Library Services Information

S. N.	Library Services Information	Y-Freq.	Y-Avg.	N-Freq.	N-Avg.	Y-Cum.	N-Cum.
1	Abstracting & Indexing	3	6%	45	94%	3	45
2	Bibliography	15	31%	33	69%	18	78
3	Book bank facility	16	33%	32	67%	34	110
4	Current Awareness (CAS)	13	27%	35	73%	47	145
5	Digital library	9	19%	39	81%	56	184
6	Digitization	10	21%	38	79%	66	222
7	Document Delivery (DDS)	19	40%	29	60%	85	251
8	Inter Library Loan (ILL)	28	58%	20	42%	113	271
9	Library orientation	18	38%	30	63%	131	301
10	New arrivals display	17	35%	31	65%	148	332
11	News Paper Clipping service	11	23%	37	77%	159	369
12	OPAC Service	39	81%	9	19%	198	378
13	Plagiarism check	18	38%	30	63%	216	408
14	Reading room facility	29	60%	19	40%	245	427
15	Reference service	24	50%	24	50%	269	451
16	Reprographic Service	40	83%	8	17%	309	459
17	SDI Service	5	10%	43	90%	314	502
18	Seminar Conference	20	42%	28	58%	334	530
19	Translation service	4	8%	44	92%	338	574
20	Trial access facility	9	19%	39	81%	347	613
21	User awareness	4	8%	44	92%	351	657
22	User Education	14	29%	34	71%	365	691
23	Web-OPAC Service	19	40%	29	60%	384	720

The university library offers a diverse range of services to its patrons, and it is critical to provide detailed information about these services on the library's website. This study observed 23 varieties of services offered by the university libraries (Table 4) and found that reprographic service (83%) and OPAC service (81%) are common to many library websites. Surprisingly, reading room facility is usually provided by all university libraries but only sixty percent (29) libraries have mentioned that in their websites. Other important services information includes ILL (58%), reference service (50%), DDS (40%), web OPAC (40%) and CAS (27%). Information on user related training programmes has been provided through content elements like library orientation (38%), user education (29%) and user awareness (8%). It is important to note that online library services particularly plagiarism checking (38%), new-paper clipping (23%) and trial access to e-resources (19%) are also being provided by university libraries through their library websites.

Table 5: List of Criteria for Print Collection Information

S. N.	Print Collection Information	Y-Freq.	Y-Avg.	N-Freq.	N-Avg.	Y-Cum.	N-Cum.
1	Back Volumes	42	88%	6	13%	42	6
2	Books & Monographs	43	90%	5	10%	85	11
3	Faculty Publication	17	35%	31	65%	102	42
4	Govt. Publications	13	27%	35	73%	115	77
5	Journals	41	85%	7	15%	156	84
6	Magazines	17	35%	31	65%	173	115
7	Maps	5	10%	43	90%	178	158
8	Newspapers	22	46%	26	54%	200	184
9	Reference Sources	40	83%	8	17%	240	192
10	Reports	15	31%	33	69%	255	225
11	Standards	11	23%	37	77%	266	262
12	Theses & Dissertations	39	81%	9	19%	305	271

The websites of university libraries should exhibit information on various collections of the library, which may be in any form like print or electronic. Table 5 shows that the majority of the top university library websites provide information about its Books & Monographs (90%), Journals (85%), Back volumes (88%), Reference sources (83%), and Theses & Dissertations (83%) collections (81%). Only 17 libraries (35%) have information on their academic publications, whereas 13 have information on government publications (27%). Several library website are not providing information on collections like standards (77%), reports (69%) and maps (90%).

Table 6: List of Criteria for Electronic Resources Information

S. N.	E-Resources Information	Y-Freq.	Y-Avg.	N-Freq.	N-Avg.	Y-Cum.	N-Cum.
1	Databases	37	77%	11	23%	37	11
2	E-Books	41	85%	7	15%	78	18
3	E-Journals	42	88%	6	13%	120	24
4	E-Newspaper	9	19%	39	81%	129	63
5	ETDs	29	60%	19	40%	158	82
6	E-Zines	3	6%	45	94%	161	127

Table 6 presents the type of e-resources university libraries are dealing with and the pattern of information they provide in their websites about these e-resources. It was found that among the e-resources e-journals (88%), e-books (85%), databases (77%) and ETDs (60%) are the most preferred contents in the website.

Table 7: List of Criteria for Special Collection Information

S. N.	Special Collection Information	Y-Freq.	Y-Avg.	N-Freq.	N-Avg.	Y-Cum.	N-Cum.
1	CD/DVD/Cassette	38	79%	10	21%	38	10
2	Children Collection	2	4%	46	96%	40	56
3	Microforms	10	21%	38	79%	50	94
4	Photo Collection	9	19%	39	81%	59	133
5	Question Paper	12	25%	36	75%	71	169
6	Rare Books	24	50%	24	50%	95	193
7	Resources for Disabled Persons	12	25%	36	75%	107	229

The special collection includes some unique collections which are very distinct in their form and nature. It is worth to note that university libraries are having good collection of audio visual collections as was found in the study (Table 7) that CD/DVD/ Cassettes (79%) and rare book collection (50%). Microforms (21%) and old Questions paper (25%) were also found to be mentioned in some library websites. It is appreciable that 12 library websites (25%) were found to be having information on the resources for disabled persons. Although not very significant but library websites were found to be holding information on their children collection (4%).

Table 8: List of Criteria for Social Networking Information

S. N.	Social Networking Information	Y-Freq.	Y-Avg.	N-Freq.	N-Avg.	Y-Cum.	N-Cum.
1	Blogs	5	10%	43	90%	5	43
2	Facebook	29	60%	19	40%	34	62
3	Google +	7	15%	41	85%	41	103
4	Instagram	10	21%	38	79%	51	141
5	LinkedIn	12	25%	36	75%	63	177
6	RSS Feed	5	10%	43	90%	68	220
7	Twitter	25	52%	23	48%	93	243
8	YouTube	20	42%	28	58%	113	271

Table 8 indicates the list of social networking sites used by university libraries to promote their activities and services and provide updated information to their users. This study found that most of the university libraries have their profile in Face book (60%), Twitter (52%) and YouTube (42%). By contrast, five university library websites (10%) were found to be having their own blogs.

Table 9: List of Criteria for Online support Information

S. N.	User Support Information	Y-Freq.	Y-Avg.	N-Freq.	N-Avg.	Y-Cum.	N-Cum.
1	Ask the Librarian	9	19%	39	81%	9	39
2	FAQs	15	31%	33	69%	24	72
3	Feedback/ Suggestion	11	23%	37	77%	35	109
4	Help option	5	10%	43	90%	40	152
5	Web mail	33	69%	15	31%	73	167

Table 9 reveals that 33 (69%) out of 48 university libraries provide their online user support through web mail facility. Other user support facilities include feedback/ suggestion (23%), FAQs (31%) and Ask the librarian (19%).

4. FINDINGS AND SUGGESTIONS:

Based on the findings of this study, the researcher recommends the following actions for university library websites to ensure their efficient use. These suggestions may be adopted by the content developers of library websites to strengthen the neglecting areas of their contents so that the user community can get more accurate and updated information.

- The university library should develop their independent separate website for the library by using any free content management system so that many advanced services can be delivered.
- The university Library website should have the provision of visitor counter to keep track of number of visitors accessing the site. A good quality of content will attract more number of visitors to access the library website.
- Although there are many technical ways are available to know the last updated date of a website, but it is very useful if the information is available on the home page of the website. Hence, it is suggested that the last updated date must be provided by the university library website in its home page so that it will ensure the accuracy of information.
- The university library website should provide information about the collections available at the Departmental libraries. It would be very helpful to the user if all the resources available in the central library as well as in departmental library be accessible at a single interface.
- Library statistics are very essential as it gives a satisfactory and correct picture about the current situation of the library and also facilitate effective management of the library. Therefore, it is suggested that every university library must provide the statistical data about the use of library resources, budget details etc. in their library website.
- The university library should provide online access to their library catalogue through the Web-OPAC service, so that anybody can access it from anywhere at any time.
- The university library should provide user related training programmes for the library users on a regular basis, so that it will help them to use the resources effectively.
- The university library should take the leadership in helping the researchers in checking the plagiarism of their research papers and the complete information regarding this should be available in the library website.

- The university library should take the initiative to provide online news paper clipping service to their user by providing important news of their interest. It may help the users in saving their valuable time, which can be utilized for academic works.
- The library website should include information on all sorts of print collections available at the university library. It should organise information in such a way that it serves as the ultimate interface for users to access all of the library's e-resource collections, such as multiple publisher databases, e-journals, and e-books, among other things.
- The university library may develop some special collections relate d to rare books, old question papers, photos of various important events and children collections to add value to its regular services. The information about all these services should be included in the library website.
- Profile in various social networking sites particularly in Face book, Twitter, Blogger sites and YouTube may be created by the university libraries and the links to these profiles should be available in the home page of the library website.

5. CONCLUSION:

The study evaluated the content of library websites of top 50 universities by using 88 content criteria and described the type of information provided by them to their user community. Despite the fact that the survey was limited to 50 university library websites, the findings show that in this digital age, the university library website is the primary means of informing users about the library's numerous collections and services. Although the nature and way of presentation of content of library websites varies from each other, but the overall quality of the website depends upon the content coverage, it authenticity and accuracy. The inconsistent pattern of the result obtained establishes the fact that shows that no web site can be considered and recommended as a model university library website.

The study found the presence of all the 88 content criteria in the sample of top university library websites under study. This list of criteria can be taken into considerations by the university library authorities and web managers to enhance the value and usability of the content. Furthermore, the study offers a few suggestions that might be used to improve the content quality of university library websites.

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