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Content Analysis of Websites of University Libraries in Delhi: A Study

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Content Analysis of Websites of University Libraries in Delhi: A Study

Abstract

Purpose - This study aims to evaluate the library websites of selected state and deemed universities in Delhi, capital city of India to ascertain how effectively libraries are leveraging their respective websites to provide library related information on their websites.

Design/ Methodology - The study adopted the checklist technique to evaluate the content of library's websites. A comprehensive checklist was designed on the basis of previous studies. It consists of 6 main aspects which are further divided into 66 elements.

Findings -The study reveals that library related information such as general library information, about collection, links to e-resources, library services, currency and authority of websites are presented on the university library websites but not to the full extent. Web 2.0 tools are used by least libraries where only 2 libraries have library Facebook page, and only one has a library blog. DTU scored the highest, 45 out of 66 and Indira Gandhi Delhi Technical University for Women (IGDTUW) scored the least 13 out of 66 in overall ranking of websites based on elements presented on their websites.

Originality/Value – The study suggested that libraries need to incorporate more information on their websites to promote the use of library resources and services. Libraries need to have a dedicated website and provide all the valuable and relevant information related to the library on their websites. This paper will guide librarians to effectively utilise and improve the quality of library websites.

Keywords - Content Analysis, Library Website, University Libraries

Paper Type - Research Paper

Introduction

Technology has evolved drastically over the last few decades, bringing drastic transformation and breakthrough in the library landscape. Libraries have to continuously adapt the emerging technologies to effectively cater the users of digital world. Website creates new opportunities for libraries to meet the users evolving needs. Vasishta (2013) affirmed that contemporary users prefer to access the information of library services from library websites without the need to visit the library; make it obligatory for all libraries to have their web presence through the library website.

The library is the centre of the university, accommodating all the information requirements of its users. Library website is the reflection of library image and act as a mirror for the library. (Singh and Gautam, 2016). It is the digital front door of the library, where users make their visit before making the physical visit to the library. A library website is a collection of concise and descriptive information on the web for the academic community in various multimedia formats such as text, audio and video material, databases, graphics and links (Vasishta, 2013).

It is an effective medium for uploading information about library collection, services and resources. It provides customised interface for better navigation and ease of use (Vasishta, 2013). Websites are the excellent platform for users to get the recent update of library-related activities and access most library services digitally. As the website of library should be interactive and responsive with proper usability, information architecture, navigation, graphics that hold user attention. Maintaining and updating the library website is also necessary to make it easily reachable (Mani, Thirumagal and Vinodh, 2017).

It can be inferred that library website holds greater significance to provide relevant and trouble-free access of library-related information. Content is the key to analysing the library website. The study has used the content analysis method to conduct research. Content analysis is the technique to assess content based on various parameters. This method can analyse the various aspects of content available on the website (Singh and Gautam, 2016). Therefore, the study aims to evaluate the content available on the library websites of State and Deemed Universities in Delhi.

Literature Review

The numerous studies have been conducted on the various aspects of library websites. Previous studies mainly used a checklist method to assess the content of library websites. The major studies which evaluated the library websites are discussed.

Aharony (2012) demonstrated the changes that happened in the American academic libraries' websites from 2000 to 2010. The findings observed the major transformation in the academic libraries website in 10 years pertaining to the use of graphics, e-journals, feedback links, site search, live chats, frequently asked questions (FAQs), OPAC, and Web 2.0 tools. Vasishta (2013) evaluated the websites of technical university libraries to assess how libraries were utilising websites for providing access to electronic journals. The author found that most of the libraries' websites were at the nascent stage and had simple structure and designs. Websites were not adequately utilised for disseminating electronic journals' information. Ganaee and Rafiq (2016) studied the 85 library Websites of Pakistani universities based on specific categories such as navigation, website aid and tools, appearance, authority and currency, languages, library building, general library information, information on different library sections, value-added services and OPAC. The author pointed out the scope of improvement related to providing information about library services and resources to users by raising the visibility of existing library websites, developing interactive, modern, mobile-friendly websites, regularly adding and updating the content on the website.

Another study by Gayan and Das S. (2017) explored the websites of national libraries of the South Asian region based on specific criteria, which covered 64 item checklist such as design, domain, CAS, search criteria, authority, general information, query, page rank and resource information. The study found that all the national universities had library websites; however, libraries still need to cop up with the emerging web technologies to serve users better. Kumar and Verma (2018) evaluated the content of library websites of NAAC accredited "A" grade universities in Central Zone by developing a predefined checklist for analysing the content of websites. The study found that maximum libraries mentioned the general library information, e-resources and digital services. The author recommended that all the libraries should have a

dedicated website with all the relevant information content and organised in a standard manner by developing certain parameters. Gupta and Walia (2017) conducted a webometrics study to analyse the structure of European national library websites by using the checkpoint method. The Google search engine and Check PageRank tool were used to collect webometrics data. The study reported that most European national libraries had a good web presence with a large number of web pages, in-links, rich content files, and user-friendly structure.

Sahoo and Panda (2019) investigated the websites of the IIT library by developing a checklist of 100 items under seven main categories which were accessibility, navigation and links, authority and currency, general library information, user support and resource discovery tools, library services section and web 2.0 tools. They found that all the IIT libraries did not fulfil the evaluation criteria. 16 percent of libraries scored less than 50 items. Library organizational chart was not found on any IIT library websites. Similarly, Devi and Verma (2019) assessed the content and web design of the library websites of 27 NITs under 108 criteria and 13 main headings. The study found that the majority of the NIT libraries had no separate websites and gave fruitful suggestions such as libraries should develop a dedicated website to provide information related to library services and facilities that would attract more users. The library website should give contact information where they interact in case of any problem, direct link of the library website should be linked with the institute website for the ease of accessing the website. Use of Web 2.0 tools are the effective way to disseminate the latest information of library. Library should regularly update the website and delete the dead links for the reputation building in front of users.

A content analysis study by Rahman and Sadik Batcha (2020) was conducted on the library websites of the colleges affiliated to the University of Delhi based on the accessibility, accuracy, currency, user-friendliness and the services and facilities using a structured checklist. The author reported that most of the libraries mentioned the information pertaining to the introduction, library staff, library hours and membership on their websites. However, none of the library websites had features of social networking tools, feedback and regular updates. Yadav and Mishra (2021) studied accessibility, efficiency, and effectiveness by conducting a content analysis of websites of Indian Institutes of Science Education and Research (IISERs) libraries. The study revealed that websites did not perform well in the usability characteristics, and most of them were very basic and simple. The authors suggested that the webmaster must promptly review and update the website to improve usability ratings using usability tools.

Objectives of the Study

1. To examine the content and information available on the selected university library websites in Delhi.
2. To ascertain how effectively libraries utilise their websites to provide information pertaining to library resources, services, and facilities.

Scope of the Study

The university library websites in Delhi are selected from the study as per UGC recognised university. Based on the examination of previous literature, the state and deemed university library websites in Delhi are selected for the study. State universities are funded and operated by state government. Deemed Universities hold the status of autonomy by the Ministry of Human Resource Development, Department of Higher education, means holding complete autonomy to decide their programs, syllabus and application procedure. The state and deemed university library websites in Delhi that had no website and only a single webpage in their respective institute website and displayed only basic library information were excluded from this study. Thus, the present study confined to the selected library websites of 10 State and Deemed Universities in Delhi which are listed below-

Table I: List of Universities included in the Study

| S.No. | Name of the University | Type |
|-------|-------------------------------------------------------------|--------|
| 1. | Dr. B.R. Ambedkar University (DBAU) | State |
| 2. | National Law University (NLU) | State |
| 3. | Indraprastha Institute of Information Technology (IIIT) | State |
| 4. | Delhi Technological University (DTU) | State |
| 5. | Guru Gobind Singh Indraprastha University (GGSIU) | State |
| 6. | Indira Gandhi Delhi Technical University for Women (IGDTUW) | State |
| 7. | Indian Law Institute (ILI) | Deemed |
| 8. | Institute of Liver and Biliary Sciences (ILBS) | Deemed |
| 9. | TERI School of Advanced Studies (TSAS) | Deemed |
| 10. | Jamia Hamdard (JH) | Deemed |

Methodology

A content analysis method was used to collect data from the library websites under study. Total 10 university library websites in Delhi were selected, out of which 6 were state, and 4 were deemed universities. A quantitative research instrument in the form of a comprehensive checklist was designed, including 6 aspects. Each aspect consists of various elements, which were examined based upon the information uploaded on the libraries' websites under study. The checklist was built based on earlier studies. (Hugar, 2019; Khatri and Baheti, 2013; Kumar and Mir, 2017; Mohamed Haneefa & Jiji, 2019; Sahoo & Panda, 2019; Vasishta, 2013).

The following are the main aspects or categories of the checklist.

1. Library General Information (21 elements)
2. Library Collection (8 elements)
3. Links to E-Resources (6 elements)
4. Library Services (19 elements)
5. Web 2.0 Tools (7 elements)
6. Authority and Currency (5 elements)

Results & Findings

The data was collected by visiting and analysing the content of each university library website under study in February 2022. The websites were evaluated based on specific parameters developed using the checklist method. Data was collected in a tabulated form where Y and N are marked against the element where Y =Yes implies that element is available on the website, whereas N=No means that element is not available.

Library General Information

The general information about library contains basic library information such as about library, library basic rules and regulations, membership details, library events, library staff, information about library collection and contact details information.

Table II: General Information about the Library

| General Information | DB AU | NL U | IIIT | DT U | GGS IU | IGDT UW | ILI | ILB S | TSA S | JH | F (N=10) |
|--------------------------------------|-------|------|------|------|--------|---------|-----|-------|-------|----|----------|
| About Library | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | 9 |
| Mission & Vision Statement | Y | Y | N | N | N | N | N | N | N | N | 2 |
| Library Rules & Regulations | Y | Y | Y | Y | Y | Y | Y | Y | N | Y | 10 |
| Library Timing | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | 9 |
| Library Membership Details | Y | N | Y | Y | Y | Y | Y | Y | Y | Y | 9 |
| Library Staff/Team | Y | Y | N | Y | Y | Y | N | Y | Y | N | 7 |
| Library Governance/Library Committee | Y | N | N | Y | Y | N | Y | Y | N | N | 5 |
| Library Floor plan | N | N | N | N | Y | N | N | N | N | Y | 2 |
| Library Events and News | N | Y | Y | Y | N | N | N | N | Y | N | 4 |
| Library Collection (Print) | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | 9 |
| Library Collection (E-Resource) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 10 |
| Library Services | Y | Y | Y | Y | Y | Y | Y | N | Y | Y | 9 |

| | | | | | | | | | | | |
|------------------------------------------|----|----|----|----|----|---|----|----|----|----|---|
| Book Bank | N | N | N | Y | Y | N | N | N | N | Y | 3 |
| Library Newsletter | Y | Y | Y | N | N | N | Y | N | N | N | 4 |
| Library Holidays | N | N | N | N | Y | N | N | N | Y | N | 2 |
| Purchase Suggestion/ Recommendation Form | Y | N | Y | Y | N | N | Y | N | N | N | 4 |
| Library Telephone Number | N | Y | Y | Y | Y | Y | Y | Y | N | Y | 8 |
| Library Email-address | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | 9 |
| Visitor Count | N | N | N | N | N | N | Y | N | N | N | 1 |
| FAQs | N | N | Y | Y | N | N | N | N | Y | N | 3 |
| Feedback Form | N | N | Y | Y | N | N | N | N | N | N | 2 |
| Total Score (Out of 21) | 12 | 12 | 14 | 16 | 14 | 7 | 13 | 10 | 11 | 11 | |

Table II illustrates all the libraries 10 out of 10 provide information about library rules & regulations and e-resource collection. Most of the 9 out of 10 libraries have mentioned information about library timing, library print collection, and library services except the IGDTUW library. Library membership is not mentioned only on the NLU library website. The majority of the library websites have given telephone number information except DBAU and TSAS library and email -addresses except DBAU library website. DBAU, the only library has not provided information about both library telephone numbers and email-address and TSAS has not provided information about the telephone number. The maximum number of libraries, 7 out of 10, have rendered information about the library staff/ team except IIIT, ILI and JH. 50 per cent of the libraries have given information about Library Governance/Library Committee namely DBAU, DTU, GGSIU, ILI and ILBS. 4 out of 10 libraries have information about library news and events, library newsletter and purchase suggestions. Only 3 libraries, IIIT, DTU and TSA, have mentioned the FAQs and Book Bank information. 2 libraries namely IIIT and DTU libraries have a feedback form on their library website and also only 2 libraries give information on library mission, library floor plan and library holidays out of 10. Only the ILI library has information about visitor count. Among all the libraries, the least general information about the library is available on the IGDTUW library website, and has scored 7 out of 21. The highest number of general library information is mentioned on the DTU library website, and has scored 16 out of 21.

Library Collection

This section provides the information of different kinds of library collection provided by the library to its users. The library collection includes books, journals, thesis and dissertation, reference materials, gifted books, newspaper, magazines and CD/DVD.

Table III: Information About Library Collection

| Library Collection | DB AU | NLU | IIIT | DTU | GGSIU | IGDTUW | ILI | *ILBS | TSA S | *JH | F (N=10) |
|---------------------------------|-------|-----|------|-----|-------|--------|-----|-------|-------|-----|----------|
| Books | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | 9 |
| Journals | Y | Y | Y | N | Y | N | Y | Y | Y | Y | 8 |
| Reference Materials/ Sources | N | Y | N | N | N | N | Y | N | N | N | 2 |
| Thesis & Dissertations | Y | N | N | N | Y | N | N | Y | Y | N | 4 |
| Gifted Books | Y | N | N | N | N | N | N | N | N | N | 1 |
| Newspaper | Y | N | Y | Y | Y | N | N | N | Y | N | 5 |
| Magazines | Y | N | Y | Y | Y | N | N | N | N | N | 4 |
| CD/DVDs | Y | N | N | N | Y | N | N | Y | Y | Y | 5 |
| Total Score (Out of 8) | 7 | 3 | 4 | 3 | 6 | 0 | 3 | 4 | 5 | 3 | |

Note: * marks libraries have not provided separate description of their physical library collection, and their collection information is available on 'about library' description.

Table III shows that all the libraries except IGDTUW have provided information about books. The majority of the libraries 8 out of 10 have mentioned information about journals except DTU and IGDTUW libraries. 50 percent of the libraries means 5 out of 10 libraries, namely DBAU, IIIT, DTU, GGSIU and TSAS have rendered newspaper-related information. Half of the libraries 5 out of 10, comprise DBAU GGSIU, ILBS, TSAS and JH have given CD/DVDs related information. Only 4 libraries including DBAU, GGSIU, ILBS and TSAS have given information about thesis and dissertations collection and magazines related information also rendered by 4 libraries namely DBAU, IIIT, DTU and GGSIU. Merely two libraries namely NLU and ILI library have given information about reference materials and only the DBAU library has mentioned information on gifted books. The DBAU has provided most of the information about physical library collection and scored 7 out of 8. IGDTUW has not mentioned any information about library print collection and scored 0 out of 8.

E-Resources

The library website act as an effective tool to access electronic resources. (Savitha K S, 2016). This section provides information about different kinds of e-resources and their links available on the selected university library under study. The e-resources consist of e-books, e-journals, e-databases, thesis and dissertations, e-question papers and free e-resources. Links of e-resources on library websites provide easy navigation and visibility of online resources.

Table IV: Links to E-Resources

| Links To E-resources | DB AU | NLU | IIIT | DTU | GGSIU | IGDTUW | ILI | ILBS | TSA S | JH | F (N=10) |
|----------------------|-------|-----|------|-----|-------|--------|-----|------|-------|----|----------|
|----------------------|-------|-----|------|-----|-------|--------|-----|------|-------|----|----------|

| | | | | | | | | | | | |
|------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|----|
| Links to Subscribed E-Books | Y | Y | Y | Y | Y | N | Y | N | Y | N | 3 |
| Links to Subscribed E-journals | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 10 |
| Links to Subscribed E-Databases | Y | Y | Y | Y | Y | N | Y | N | Y | Y | 8 |
| Links to E-Theses & Dissertation/ Institutional Repository | Y | N | Y | Y | N | N | Y | N | Y | N | 5 |
| Links to Free Online Resources | Y | Y | Y | Y | Y | Y | Y | N | Y | Y | 9 |
| Links to Question Papers | N | Y | Y | N | N | N | Y | N | N | N | 3 |
| Total Score (Out of 6) | 5 | 5 | 6 | 5 | 4 | 2 | 6 | 1 | 5 | 3 | |

Table IV indicates that all the libraries have given the links of subscribed e-journals on their library website except ILBS. Most of the libraries, 9 out of 10 have provided the links of free online e-resources. The majority of the libraries 8 out of 10 have provided links to subscribed e-databases. Half of the libraries 5 out of 10 have given links of their e-theses and dissertations/ institutional repository. The least number of libraries 3 out of 10 have given information and links of subscribed e-books and e-question papers. IIIT has given links to all kinds of e-resources and scored 6 out of 6. ILBS has scored least 1 out of 6 and given information only about e-journals.

Library Services

This section mentions the information of library services given by the libraries on their websites. Library Services include Web OPAC, CAS/SDI, Remote Access, Inter-library loan, ask a librarian, library orientation service etc.

Table V: Information about Library Services

| Library Services | DB AU | NL U | III T | DT U | GGs IU | IGDT UW | ILI | ILB S | TSA S | JH | F (N=10) |
|------------------|-------|------|-------|------|--------|---------|-----|-------|-------|----|----------|
| Web OPAC | Y | Y | Y | Y | Y | Y | Y | N | Y | Y | 9 |
| My Account | Y | N | Y | Y | Y | N | Y | N | Y | Y | 7 |

| | | | | | | | | | | | |
|----------------------------------------|----|---|----|----|---|---|----|---|----|---|---|
| Single Window Search/Federated Search | N | N | N | Y | N | N | N | N | Y | N | 2 |
| Remote Access | Y | N | Y | Y | Y | N | Y | N | Y | N | 6 |
| Plagiarism Software | N | Y | N | Y | Y | N | N | N | Y | N | 4 |
| Current Awareness Service | Y | Y | N | Y | N | N | N | N | N | N | 3 |
| Selective Dissemination of Information | N | N | N | N | N | N | N | N | N | N | 0 |
| Reprographic Service | N | Y | N | Y | N | N | Y | N | Y | Y | 5 |
| Inter-library loan | Y | N | Y | Y | Y | N | Y | N | Y | Y | 7 |
| Document Delivery Service | Y | N | Y | N | N | N | Y | N | N | N | 3 |
| Circulation Service | Y | Y | Y | Y | Y | N | N | N | N | Y | 6 |
| Reference Services/ Ask a Librarian | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | 9 |
| Wi-fi service | N | N | Y | Y | N | N | Y | N | Y | Y | 5 |
| Video Tutorials | Y | N | N | Y | N | N | N | N | N | N | 2 |
| New Arrivals | Y | N | Y | Y | N | N | Y | N | Y | N | 5 |
| Newspaper clipping service | Y | Y | Y | Y | N | N | Y | N | Y | Y | 7 |
| Library Orientation Service | Y | Y | Y | N | N | N | Y | N | Y | N | 5 |
| Virtual Library Tour | N | N | Y | Y | N | N | N | N | N | N | 2 |
| Mobile Library App | Y | N | N | Y | N | N | N | N | Y | N | 3 |
| Total Score (Out of 19) | 13 | 8 | 12 | 16 | 6 | 2 | 11 | 1 | 13 | 8 | |

Table V depicts that most of the libraries, 9 out of 10 have provided a link to Web OPAC and Reference Service/ Ask a Librarian service. Most of the libraries, 7 out of 10 have given information on my account, inter-library loan and newspaper-clipping service. 6 out of 10 libraries have remote access service namely DBAU, IIIT, DTU, GGSIU, ILI and TSAS. Half of the libraries 5 out of 10 have mentioned information about new arrivals, reprographic service, wi-fi service and library orientation service. Less than half of the libraries 4 out of 10 have plagiarism software namely NLU, DTU, GGSIU and TSAS. Three libraries namely DBAU, DTU and TSAS, have mobile library app. Merely 3 libraries have given the information of current awareness service and document delivery service. Only two library

websites namely DBAU and DTU guide users in the form of video tutorials. Similarly, only two libraries, IIIT and DTU have virtual library tour video on their website. Single window search/ federated search is available only on DTU and TSAS library websites. Not a single library website has provided information on selective dissemination of information. DBAU and TSAS have mentioned maximum information and scored 13 out of 19. ILBS has scored the least and got only 1 out of 19 regarding the information on library services.

Web 2.0 Tools

This section gives information on Web 2.0 tools used by the libraries. Web 2.0 tools are a new generation tool to act as a great bridge between users and library and provide better reach to library resources and services among users. Various Web 2.0 tools are Facebook, Instagram, Twitter, LinkedIn, Blog and RSS.

Table VI: Web 2.0 Tools

| Web 2.0 Tools | DB AU | NL U | IIIT | DT U | GGs IU | IGDT UW | ILI | ILB S | TSA S | JH | F (N=10) |
|---------------------------|----------|---------|------|---------|-----------|------------|-----|----------|----------|----|-------------|
| Library Facebook Page | N | N | Y | Y | N | N | N | N | N | N | 2 |
| Library Twitter Page | N | N | N | N | N | N | N | N | N | N | 0 |
| Library LinkedIn Page | N | N | N | N | N | N | N | N | N | N | 0 |
| Library Instagram | N | N | N | N | N | N | N | N | N | N | 0 |
| Library Blog | N | N | N | Y | N | N | N | N | N | N | 1 |
| RSS feed | N | N | N | N | N | N | N | N | N | N | 0 |
| Library YouTube Channel | N | N | N | N | N | N | N | N | N | N | 0 |
| Total Score (Out of 7) | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | |

Table VI observes that the level of use of Web 2.0 tools in the university libraries of Delhi are minor. Only two libraries, IIIT and DTU have provided the link of library Facebook page on their websites, and only DTU has its own library blog. The rest of the Web 2.0 tools such as Twitter, LinkedIn, Instagram, RSS feed and YouTube channel are not provided by any library.

Authority and Currency of Website

Authority and Currency are the two major aspects to check the credibility and authenticity of the website. Authority signifies the author of the website which can be identified through domain name which makes the website trustworthy. Currency identifies how recent the information on the website by checking their copyright and update information.

Table VII: Authority and Currency of Website

| Authority and Currency | *DB AU | *N LU | III T | DT U | *GG SIU | *IGD TUW | *IL I | *IL BS | *TS AS | *J H | F (N=10) |
|-----------------------------------|--------|-------|-------|------|---------|----------|-------|--------|--------|------|----------|
| Proper domain name of the library | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 10 |
| Webmaster Name | N | N | N | Y | Y | N | N | Y | N | Y | 4 |
| Copyright Information | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 10 |
| Date of updation of Website | N | N | N | N | Y | N | N | N | N | N | 1 |
| Disclaimer | Y | N | N | N | Y | N | N | Y | N | Y | 4 |
| Total Score (Out of 5) | 3 | 2 | 2 | 3 | 5 | 2 | 2 | 4 | 2 | 4 | |

Note: * mark libraries have webpage on their institution website rather than dedicated website. Their currency and authority analysed on the basis of their institution website.

Table VII shows that all the libraries have mentioned copyright information and proper domain name. However, less than half of the libraries, 4 out of 10 have provided information about Webmaster and disclaimer. DTU, GGSIU, ILBS and JH have given the webmaster information and DBAU, GGSIU, ILBS and JH have mentioned the information of disclaimer. GGSIU has scored full 5 out of 5 in authority and currency information. NLU, IIIT, IGDTUW, ILI and TSAS have scored least, only 2 out of 5 in authority and currency of library websites.

Rank List of Websites under Study

The total score of each university library website under study using the checklist technique has been presented in Table 8, based on the previous tables from table 3 to table 7.

Table VIII: Ranking of Library Websites based on Total Score

| Rank | Checklist | Library General Information (out of 21) | Library Collection (out of 8) | Links to E-Resources (out of 6) | Library Services (out of 19) | Web 2.0 Tools (out of 7) | Authority and Currency (out of 5) | Total Score | Percentage |
|------|-----------|-----------------------------------------|-------------------------------|---------------------------------|------------------------------|--------------------------|-----------------------------------|-------------|------------|
| 1 | DTU | 16 | 3 | 5 | 16 | 2 | 3 | 45 | 68.1 |

| | | | | | | | | | |
|---|----------------|----|---|---|----|---|---|----|------------|
| 2 | DBA U | 12 | 7 | 5 | 13 | 0 | 3 | 40 | 60.60 % |
| 3 | IIT | 14 | 4 | 6 | 12 | 1 | 2 | 39 | 59% |
| 4 | TSA S | 11 | 5 | 5 | 13 | 0 | 2 | 36 | 54.50 % |
| 5 | GGSI IU | 14 | 6 | 4 | 6 | 0 | 5 | 35 | 53% |
| 5 | ILI | 13 | 3 | 6 | 11 | 0 | 2 | 35 | 53% |
| 6 | NLU | 12 | 3 | 5 | 8 | 0 | 2 | 30 | 45.40 % |
| 7 | JH | 11 | 3 | 3 | 8 | 0 | 4 | 29 | 43.90 % |
| 8 | ILBS | 10 | 4 | 1 | 1 | 0 | 4 | 20 | 30.30 % |
| 9 | IGD TU W | 7 | 0 | 2 | 2 | 0 | 2 | 13 | 19.60 % |

Table VIII demonstrates the ranking of the university library websites under study based on the elements available on their website. Among all the libraries, 6 libraries have scored more than 50 percent out of 10. DTU has scored maximum among all the libraries, 45 (68.1%) out of 66 followed by DBAU- 40 (60.6%), IIT – 39 (59%), TSAS- 36 (54.5%), GGSIU and ILI scored the same – 35 (53%). The 4 libraries have scored less than 50 percent, including NLU- 30 (45.4%), followed by JH – 29 (43.9%), ILBS- 20 (30.3%). IGDTUW has scored 13 (19.6%) out of 66, least among all the libraries.

Discussion

In today's world, users prefer to access information and library services through digital medium. The library website is a vital tool to digitally communicate and interact with the users. Library websites make the users aware of various kinds of information sources and services available in the library, thereby efforts should be made by the libraries to develop a dedicated library website and link it to the university website for better accessibility.

It is evident from the findings that general library information is available on all the library websites. However, none of the libraries have provided all the library related general information on their website. General library information is an integral part of the library website, which should be provided on all the websites irrespective of the resources and services rendered by the libraries. The study found majority of libraries have mentioned information about library rules & regulations, e-resource collection, library timing, library print collection, library services, library membership, telephone number, email -addresses and library staff/team. Half of the libraries have given information about library governance/Library Committee, whereas only few library websites have feedback form, purchase suggestion/recommendation form, usage statistics and FAQs. Statistics pertaining to visitors count must be provided by all the libraries and users' feedback form on their website that enable libraries to improve their functioning and services according to their users' needs. Purchase suggestion form helps the library staff to understand the information sources requirement of the users and can better serve their users by developing the library collection accordingly.

Library should upload the purchase form on their website, so that users can easily access them. FAQs are the effective way to get quick answers all the basic questions that users frequently ask related to the library. Library should mention all the FAQs on their library website, which saves the time of both users and library staff. A similar study by Ali K. S. *et al.* (2018) also reported that most libraries were provided information about membership details, library rules, policies and procedures on their library websites. In contrast, no library had information regarding library newsletters, web-based user education/virtual-library tour, visitor count, and online feedback form on their websites.

The findings also manifested that information about books and journals collection are provided by considerable and most of the studied libraries. However, smaller number of libraries are providing information of reference sources. The users are generally not aware of various kinds of reference sources such as encyclopaedias, dictionaries, and bibliographical sources, which are excellent sources of information that should be included in the website to promote the use of such resources. Previous studies also revealed similar findings Pareek and Gupta (2012); Ali K. S. *et al.* (2018) that the library websites provided information about books, journals, reference sources and back volume of journals.

E- resources especially subscribed online databases consisting of various types of e-resources contain quality content extremely useful for ongoing research. Concerned funding authorities allocate large amount of their budget for the subscription of e-resources to enhance the quality of research as well as all academic activities but these resources need to be widely publicised for increasing users' awareness of the same. The website can act as a gateway for users to get the access of all the subscribed e-resources by providing the links of e-resources on the library website. It enables users to access the information resources promptly. It is revealed from the study that most of the libraries' websites have given links of e-resources of both subscribed and open-access resources. The rest of the libraries should also give links to all the subscribed e-resources such as e-books, e-journals, e-databases, and also the links of free and online e-resources on different subjects for promoting the use of e-resources. The Institutional Repository (IR) was found only in half of the libraries. IR act as a digital library to preserve the scholarly work of the university. All university libraries should develop and maintain their institutional repository. It enables users to get free access of scholarly work contributed by their university's researchers and faculty members.

Information regarding all the library services rendered by the library should be mentioned on their website to provide better visibility and reach of library services. The library should make optimum use of all the ICT tools and technology so that users can easily access the information sources and services. The article revealed that most of the libraries have given the information of Web OPAC, Reference Service/ Ask a Librarian, my account, Inter-library loan and newspaper-clipping service, and remote access. However, certain vital and emerging services in libraries that were missing most of the studied library websites such as plagiarism software, mobile app, virtual library tour, video tutorials, and single-window search, which can enhance and improve the library services. University libraries should provide plagiarism software to their researchers to enable them to produce quality and plagiarised free research. Mobile apps ensure library access on the users' pockets, which give a more interactive and responsive interface. Virtual library tour makes users familiar with all the library related resources, services, facilitates and a glimpse of library physical appearance. Video tutorials are the best way to guide and educate the users on how to access library resources and services. It also

saves the library staff's time and enables users to access the library without the assistance of library staff. Single-window search are nowadays started implemented in the libraries, which enables users to access all the library resources, including physical library collection, subscribed, and open-access e-resources through a single consolidated platform that saves a lot of time of the users. It is quite surprising that current awareness services and document delivery service, which are very prominent library services, are given by very few libraries, and not none of the libraries has selective dissemination service on their library websites. Current awareness service let the users aware the recent information resources added in the library. Selective dissemination of information is more personalised service that notify the users about particular resources according to their preferences. Both the services play a pivotal role to make the users updated related to library resources and services and must be available in all the libraries.

Libraries should also need to effectively implement and leverage Web 2.0 tools to promote and create awareness of library resources and services among patrons. It is revealed from the findings that adoption of Web 2.0 tools are the least among libraries where only two has library Facebook page, and one has a library blog out of 10. Other than this, none of the Web 2.0 tools are used by libraries. Similarly, Singha and Verma (2020) reported that none of the university library websites of Northeast region were using Web 2.0 tools to promote library services and also consistent with Gangwar and Verma (2021), where they found all the six selected IIM libraries were not using Web 2.0 tools. It is imperative that all the libraries make their library page on various social media platforms such as Facebook, Twitter, and LinkedIn to give regular updates of new arrivals, library events, current awareness services, marketing library services, and answer users' queries. It is demonstrated from the study that most of the library websites are deficient in providing some of the authority and currency related information. Library websites must give information of last update, copyright information and webmaster details to maintain the credibility and authenticity of the website.

In a technology-driven world, it has become highly significant and necessary for libraries to leverage tools and technology to make libraries relevant and valuable to their users. It is not enough only to have a library website. Website should effectively utilise by libraries for providing all the possible library related information, a better interface and a user-friendly website that enhance the use of library services and facilities.

Conclusion

The study depicts that most of the library websites under study are at the development stage. A lot more information could be incorporated to enhance the utilisation of these websites. Library general information is the primary and most important information that should be available on all the websites. However, not even a single library website under study scored full in the section of general library information. Majority of library mentioned information about rules & regulations and e-resource collection, library timing, library print collection, and library services, library membership, telephone number information email -addresses and library staff/ team and only few libraries had feedback form, purchase suggestion/recommendation form, usage statistics and FAQs.

Libraries are called the storehouse of information. Library collection information makes the users aware of different kinds of resources available in their library. Library collection information was mentioned on all websites except IGDTUW and varies among libraries depending on their libraries' collections. Most of the libraries had information about books and journals, whereas reference materials and gifted books were least mentioned. E-resources have become extremely significant especially due to covid and highly used resources in such crisis. Libraries can enhance the visibility of resources by listing the links of all the subscribed resources and free e-resources on the library websites. The study found that the majority of the library websites provided links to subscribed e-journals, subscribed e-databases and links to free e-resources. In contrast, few libraries provided links to questions papers and subscribed e-books.

Library services related information generally varies, dependent upon the services provided by libraries. The article reported that most of the libraries gave the information of Web OPAC, Reference Service/ Ask a Librarian, my account, Inter-library loan and newspaper-clipping service, and remote access. In contrast, only few libraries provided some of the vital and emerging library services including inter-library loans, document delivery service, plagiarism software, mobile app, virtual library tour, video tutorials, and single-window search. Web 2.0 tools are gaining momentum and most used medium to communicate and interact with users. The majority of the libraries found the minor implementation of Web 2.0 tools. Only two libraries among 10 had their Library Facebook page, one had library blog and the rest of them were not using any Web 2.0 tools. Authority and Currency play a significant role to check the website's credibility and trustworthiness. Only proper domain and copyright information were available on all websites under study and only GGSIU library website gave the information of last update of the website. The library's motto should not just have a library website but also design an interactive, responsive, user-friendly, and productive website that provides all the relevant and necessary information keeping in mind the requirements of the users. To make this possible, the library should hire staff with web development and user experience competencies and skills. Library websites need to be updated regularly and need continuous improvement according to the changing needs of the users.

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