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Content and Design Analysis of National Importance IISER and IISc Institute Library Websites in India

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ABSTRACT: This study specially focuses on analyzing content and design analysis of eight national importance IISER and IISc institute library websites and webpages in India by using checklists, website observation and survey method. The evaluation of website design and development has key role for website developer and also user for providing and retrieving, sharing and providing effective services on web. The study exhibit that majority library websites/webpages have useful website design and functionality features but does not include the basic authority and reliability information features in their websites and WebPages. Most of the website uses fixed width layout pattern with text, images, graphics and animation for design website/webpages by offering their content in two languages. The study recommends that the most of institution library website needs to improve their website features for increasing their website utility.

KEYWORDS: Content Analysis, Website Usability, Web Analysis, Library Website, IISER, Web 2.0., Webometrics

I. INTRODUCTION

Web based ICT tools and techniques affects on the modernization of services and also it helps in information exchange and dissemination. In this changing web based online environment, the information needs of academician and researchers across all fields are increasing day by day, and website has now become the most common and popular online way to access, share, and exchange up-to- date information. That's why the most of the research and academic institutions adopting the design and development of institutional website for information exchange and to fulfil information need of users. Most of academic institutions develop and maintain their own Websites or WebPages for their web presence and to provide their services and facilities to their stockholders.

For libraries, library website acts as a medium to information dissemination and used for providing quality services effectively and globally. For effective user services, website plays a leading role for catching attention of user towards the library services and resources which helps to improve library uses and it also helps to fulfil information needs of user quickly within a time. Most of library user depends on the Library websites or WebPages for web based services and resources. Academic and research institute library websites helps in access various online resources, electronic databases, open access and full text materials to the global library user. So for any Library, design and development of functional and user friendly website is very crucial for their existence, library development and user satisfaction. So, it is very crucial to determine the functioning, utility and efficiency of a library website through content and design analysis.

II. REVIEW OF LITERATURE

Shashidhara (2023) conducted the content analysis survey and assessment of nine institute's library websites of Karnataka state, which was having national importance, using some checklist criteria. The research showed that nearly half of the libraries their own separate dedicated websites with details of physical collections, information about reprography, remote access and grammar checking facilities. Also found that only one library have direct link on institutions parent website while details information on electronic resources and link of Web OPAC was available in fifty percent websites. Madhu & Kannappanavar (2023) conducted a study of web presence of institutes of Pharmacies in India by using content analysis parameters like website accessibility, prominence and general information, e-

resources including details of tools like web 2.0 etc. From the analysis it was found that majority of institutes have library web pages where most of library page links found under different navigation menus and most of libraries provides details of e-resources, databases and web OPAC links. Sushma & Ramesh (2023) analysed twenty four websites and web pages of state university libraries using checklist where the observation shows that most of the universities shows the authority, reliability readability, accuracy and copyright statement but only six universities have their separate library website. All universities show library link on the university home page with general information but no one library uses any type of graphics symbols or signs in library webpages. Verma & Pathak (2021) conducted a evaluative study of websites of twenty nine ICSSR institutes of India where it was found that nearly twenty eight are using graphics in their websites. More than half of the websites using only one language (i.e. English). Nearly all the library websites giving the details of statement of responsibility while most of the website lacking to show about details of maintenance. Das & Das (2018) conducted comparative study of content features of seven IISER library websites. They found that most of websites lacking to show the information regarding library sections, mobile version, information about back volumes, hit counter, photo gallery, suggestion box, site designer. Devi & Verma (2017) has evaluated the design trend features of twenty seven NIT library websites under 108 criteria where majority of the websites provides library webpage link under facilities and academics menu etc. More than fifty percent libraries includes search option and one language in website and also it was found that most of the website having text only version, providing information about the library, details of books, OPAC, e-books and e-journals etc.

III. OBJECTIVES

The following are the primary objectives of the study

- ♦ To analyse the design features of IISER and IISc. libraries websites
- ♦ To analyse the contents structure of IISER and IISc. library websites
- ♦ To examine the accessibility, availability and basic information in library websites
- ♦ To analyse the information of resources, services, collection of Library
- ♦ To measure the usability and functionality of the IISER and IISc. library websites
- ♦ To Suggest measures for improvement of library website

IV. SCOPE

For the study Indian Institutes of Science Education and Research (IISER) and Indian Institute of Science (IISc.) institutes have been considered, both the institutions working in science and integrated research discipline. Here, all seven IISERs and one IISc. Institutes Library websites/web pages considered for the study which has national importance in India. Total 8 IISER and IISc institutes library websites/WebPages considered for present study.

Sr. No.	Name of Institute	Abbreviations	Establishment Year	Library Website/Webpage URL
1	Indian Institute of Science Education and Research, Berhampur	IISERBE	2016	http://library.iiserbpr.ac.in/
2	Indian Institute of Science Education and Research, Tirupati	IISERT	2015	https://www.iisertirupati.ac.in/library/
3	Indian Institute of Science Education and Research, Thiruvananthapuram	IISERTH	2008	https://www.iisertvm.ac.in/pages/iiser_tvm_library
4	Indian Institute of Science Education and Research, Bhopal	IISERB	2008	https://library.iiserb.ac.in/
5	Indian Institute of Science Education and Research, Mohali	IISERM	2007	https://library.iisermohali.ac.in/
6	Indian Institute of Science Education and Research Pune	IISERP	2006	https://www.iiserpune.ac.in/library
7	Indian Institute of Science Education and Research, Kolkata	IISERK	2006	https://www.iiserkol.ac.in/web/en/facilities/library/#gsc.tab=0
8	Indian Institute of Science, Bangalore	IISCB	1909	https://library.iisc.ac.in/

V. METHODOLOGY

For conducting the present study the data have been collected from the relevant institutional library websites/webpages of respective IISC and IISER institutes websites by using methods of observation and survey. The data have been collected and compiled by using checklist parameters designed and developed to analyze website content and for the data collection of IISER and IISc. library websites.

VI. DATA ANALYSIS AND INTERPRETATION

6.1 Type of Domain Extension

The domain structure of the IISER and IISc websites in India is given in Table 1. It has been found that the websites of all IISER and IISc institutes websites have the similar domain extension i.e. .ac.in

Table 1: Type of Domain Extension

Sr. No.	Criteria	Domain Extension Type	Frequency
1	Domain Extension	.ac.in	8 (100%)

6.2 Website/Webpage Availability

Table-2 shows that the availability of the IISER and IISc Library websites and WebPages under two criteria. From study it is observed that only 2 (25%) institutes i.e. IISER Bhopal & IISc Bangalore have their separate website. 3 (37.5%) IISER institutes i.e. IISER Pune, Thiruvananthapuram and Tirupati have separate webpages for library. Two (25%) institutions i.e. IISER Mohali and Berhampur library use ILMS webpages as a library website and only one (12.5%) IISER Kolkata have dedicated webpage for library in their institutes website.

Table 2: Website/Webpage Availability

Sr. No.	Criteria	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Total	%
1	Library have separate website	No	No	No	Yes	No	No	No	Yes	2	25%
2	Library have a separate webpage	Yes	No	No	No	Yes	Yes	No	No	3	37.5%
3	Library have dedicated webpage in its parent institute website	No	Yes	No	No	No	No	No	No	1	12.5%
4	Library use ILMS as Website (Koha)	No	No	Yes	No	No	No	Yes	No	2	25%

6.3 Website Content Design Description

For any website the use of Text, images and graphics, animations play an very important role for their content presentation and look. Here these features analyzed under two criteria shown in Table-3. From the analysis It is observed that there are 3(37.5%) institution i.e. IISER Pune, Kolkata and Thiruvananthapuram Library websites/WebPages use only text for their website page design while 5 (62.5%) of the IISER & IISc. institutions i.e. IISER Mohali, Bhopal, Tirupati, Berhampur and IISC, Bangalore uses images, graphics and animations along with text for their library website and webpage design.

Table-3: Content Design Description

Sr. No.	Criteria	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Total	%
1	Use of Text only	Yes	Yes	No	No	Yes	No	No	No	03	37.5%
2	Use of Text and Images/Graphics/Animations	No	No	Yes	Yes	No	Yes	Yes	Yes	05	62.5%

6.4 Websites/Webpage Accessibility

Information usage of any website/webpages depends on their easy access of website/webpages. Here, Table-4 gives IISER and IISc's Library website/webpages accessibility observations details. From observations it is found that 3 (37.5%) institute libraries have direct access link on their parent institutes website home page. More than half 5(62.5%) institutes provide Library access link under Facilities, Resources, campus infrastructure, Quick Menu etc.

Table-4: of Websites/Webpage Accessibility

Sr. No.	Criteria	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Total	%
1	Direct Link on Home Page of Parent Institute Website	No	No	Yes	No	Yes	Yes	No	No	3	37.5%
2	Library link under Facilities, Student Corner, Infrastructure Resources, Quick Menu etc.	Yes	Yes	No	Yes	No	No	Yes	Yes	5	62.5%

6.5 Library Website/Webpage Language

Table-5 represents the Library Website/Webpage content Language of IISER & IISc. Websites / webpage. The website language plays a vital role in providing information of library to global and regional user. It is observed that only 2 (25%) institutes namely IISER Mohali and IISc. Bengalore offers information only in one language i.e. English. 4 (50%) IISER Pune, Kalkata, Bhopal and Thiruvananthapuram offer their information in both English and Hindi Language. While only 2 (25%) IISER institutions i.e. IISER Tirupati and IISER Berhampur offer more than two languages including some regional language facility in their website.

Table-5: Library Website/Webpage Language

Sr. No.	Criteria	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Total	%
1	Website Offers One Language (English)	No	No	Yes	No	No	No	No	Yes	2	25%
2	Website Offers Two Languages (English & Hindi)	Yes	Yes	X	Yes	Yes	No	No	No	4	50%
3	Website Offers More than Two Languages (Multilanguage)	No	No	No	No	No	Yes	Yes	No	2	25%

6.6 Library Website/Webpage Content Area Features

While designing and developing any website the layout of the website plays an important role for their visual presentation of content. Table-6 represents the Library website/webpage content area features about website layout. It is observe that out of eight institutions only one 12.5% i.e. IISER Berhampur website design in Full Screen Layout while most of the Institutions i.e. 5 (62.5%) IISERs and one IISc's websites design in fixed width website layout format. Only 2 (25%) of i.e. IISER Mohali and IISER Thiruvananthapuram provide their website content in fixed width website layout form.

Table-6: Library Website/Webpage Content Area Features

Sr. No.	Criteria	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Total	%
1	Full Screen Website Layout	No	No	No	No	No	No	Yes	No	1	12.5%
2	Fixed Width Website Layout	No	No	Yes	No	Yes	No	No	No	2	25%
3	Full width Header with Fixed Width Content Area Layout	Yes	Yes	No	Yes	No	Yes	No	Yes	5	62.5%

6.7 Compatibility and Support Features

The website compatibility and support features includes support of website to mobile, webpage printing, webpage saving and copying website content options etc. The mobile-friendly website facilitates easy access to library information for users around-the-clock. Table-7 show the compatibility and support features of library website/webpages. It is found that all 100% IISER and IISc library websites /webpages support all the compatibility features i.e. support mobile friendly view, support webpage printing option, support webpage save option and support website content copying option.

Table-7: Compatibility and Support Features

Sr. No.	Criteria	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Total	%
1	Support Mobile friendly and Responsive View	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
2	Support Webpage Printing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
3	Support webpage Save	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
4	Support Content Copying	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%

6.8 Website Support Features

Table-8 reveals the website support features provided by the IISER & IISc Library website /webpages. 6 (75%) IISER and IISc. Institute library website /webpages having a feature of search bar and parent website social media share links properly. Only 3 (37.5%) institute's i. e. IISER Mohali, Berhampur and IISc Bengalore have their library website home page with Marque Text, Images and gallery. 2 (25%) institutes namely IISER Pune and Tirupati provides site map in their website/webpages. Out of eight only 1 (12.5%) IISER Berhampur library website provides the facility of visitor counter.

Table-8: Website Support Features

Sr. No.	Criteria	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Total	%
1	Site map (Parent Website)	Yes	No	No	No	No	Yes	No	No	2	25%
2	Search Bar	Yes	Yes	Yes	No	Yes	Yes	No	Yes	6	75%
3	Visitor Counter	No	No	No	No	No	No	No	Yes	1	12.5%
4	Parent Site Social media share links	Yes	Yes	Yes	Yes	Yes	Yes	No	No	6	75%
5	Library Home page with Marquee Text/Image Gallery	No	No	Yes	No	No	No	Yes	Yes	3	37.5%

6.9 Additional Aids and Tools

The tools and aids like language selection, font resize option, screen reader etc. are the most commonly used features of any website. These tools provides additional user friendly environment for website user. The Table-9 gives information regarding the availability of these aids and tools on IISER & IISc. institutes' library websites/webpages and the analysis resolved that 6 (75%) research institutes i.e. IISER Pune, Kolkatta, Bhopal, Thiruvananthapuram, Tirupati and Berhampur provide language selection option on their respective websites while 2 (25%) of institutions namely IISER Pune, and Tirupati includes font resize tool. 2 (25%) IISER Pune and Tirupati provides theme color toggle switch tool facility while only 1(12.5%) of IISER i.e. IISER Tirupati provides screen reader facility and IISER Berhampur provides facility of Live User Help/ Support Tool in their library website/webpage. It is also found that no one institution provides any kind of Google Location Map/ Virtual Map of Library in their library website/webpage.

Table-9: Additional Aids and Tools

Sr. No.	Criteria	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Total	%
1	Language Selection	Yes	Yes	No	Yes	Yes	Yes	Yes	No	6	75%
2	Font Resize Option	Yes	No	No	No	No	Yes	No	No	2	25%
3	Screen Reader	No	No	No	No	No	Yes	No	No	1	12.5%
4	Theme color Toggle Switch Tool	Yes	No	No	No	No	Yes	No	No	2	25%
5	Live User Help/ Support Tool	No	No	No	No	No	No	Yes	No	1	12.5%
6	Google Location Map/ Virtual Library Map	No	No	No	No	No	No	No	No	0	0%

6.10 Currency of institute Website/Webpage

For any website currency is very important and essential feature which shows the availability of updated and latest information of any institution on the website/webpage. So, it has become a very challenging task for website developers/designers to provide up-to-date information to their users and keep their latest information on their library website/webpage on a regular basis as per the increasing user requirement. Table-10 shows that the Currency details of institute website/webpage. The analysis show that only 1(12.50%) research institute i.e. IISER Pune library website/webpage provides the date of updating and 1 (12.50%) IISER Berhampur provides current /present date in their website. It is also found that no one institute mentions the website creation date in their website.

Table-10: Currency of institute Website/Webpage

Sr. No.	Criteria	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Total	%
1	Website Creation Date	No	No	No	No	No	No	No	No	0	0%
2	Update Date	Yes	No	No	No	No	No	No	No	1	12.5%
3	Current /Present Date	No	No	No	No	No	No	Yes	No	1	12.5%

6.11 Statement of Responsibility

Table-11 depicts the statement of responsibility of IISER and IISC libraries' websites/webpages. It is observed from the study that all 8(100%) libraries websites provides E-Mail Address of Library/Librarian/Library Person while among the eight library websites, 7(87.5%) websites have provided the postal address and details of Phone No. of Library/Librarian/Library Person in their respective website and but 2 (25%) libraries i.e. IISER Mohali and IISC Bangalore the only libraries that provided the Fax No. of Library.

Table-11: Statement of Responsibility

Sr. No.	Criteria	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Total	%
1	Postal Address of Library	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	7	87.5%
2	Phone No. of Library/Librarian/Library Person	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	7	87.5%
3	E-Mail Address of Library/Librarian/Library Person	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
4	Fax No. of Library	No	No	Yes	No	No	No	No	Yes	2	25%

6.12 General Information About the Library

Table-12 shows observations about general library information provided in the IISER and IISC library websites/webpages. The analysis shows that all 8 (100%) institutes offer information about the library, their membership, and contact details on their websites/webpages. 7 (87.5%) websites provides information of Library hours/timing while only 6 (75%) Libraries giving the details of library collection/ resources Statistics. Details of library staff /team and about news & event/announcement/notification mention in 5 (62.5%) websites. Only half of the library websites provides the FAQ's facility while only 3 (37.5%) of library websites mention the Library Rules & Regulation on their respective website. It is also found that only few 2 (25%) library websites provides their Vision/Mission/Objective and details of Library Advisory Committee, Ask a librarian facility and Photo Gallery.

Table-12: General Information about the Library

Sr. No	Checklist /Parameter	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Frequency	%
1	About Library/History/Introduction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
2	Vision/Mission/Objective	No	No	Yes	Yes	No	No	No	No	2	25%
3	Library Hours/Timing	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	7	87.5%

4	News & Event/Announcement/Notification	No	No	Yes	Yes	Yes	No	Yes	Yes	5	62.5%
5	Staff / Team	Yes	Yes	No	Yes	No	No	Yes	Yes	5	62.5%
6	Rules & Regulation	No	No	No	Yes	Yes	No	Yes	No	3	37.5%
7	Library Collection/ Resources Statistics	Yes	Yes	Yes	Yes	No	Yes	No	Yes	6	75%
8	Library Membership	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
9	Ask the Librarian	No	No	Yes	No	No	No	No	Yes	2	25%
10	Library Advisory Committee	No	No	No	Yes	No	No	Yes	No	2	25%
11	Photo Gallery	No	No	Yes	Yes	No	No	No	No	2	25%
12	FAQ	Yes	No	No	Yes	No	No	Yes	Yes	4	50%
13	Contacts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%

6.13 Statistics of Collection & Resources Available in Library

The status of resources and libraries collection statistics of IISER and IISC Libraries are stated in Table-13. A study shows that 5 (62.5%) websites mention statistical information about books, while details on journals, e-journals, e-books, and databases are provided by only 4 (50%) library websites. Out of eight 2 (12.5%) libraries i.e. IISER Pune and IISC Bangalore mention record of Thesis/Dissertations, IISER Pune and Mohali shows the records of Magazine. 1 (12.5%) library provides the record of Bound Volumes and Newspapers. Out of eight institutions there are no any institutional website/webpage that provides information about journals back bound volume.

Table-13: Statistics of Collection & Resources Available in Library

Sr. No.	Checklist	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Frequency	%
1	Books	Yes	Yes	No	Yes	No	Yes	No	Yes	5	62.5%
2	Journals	Yes	No	Yes	No	No	Yes	No	Yes	4	50%
3	E-Books	Yes	Yes	Yes	No	No	No	No	Yes	4	50%
4	E-Journals	Yes	No	Yes	No	No	Yes	No	Yes	4	50%
5	Reference Sources	X	No	No	No	No	No	No	No	0	0%
6	Databases	Yes	No	Yes	Yes	No	Yes	No	No	4	50%
7	Thesis/ Dissertation	Yes	No	No	No	No	No	No	Yes	2	25%
8	Bound Volumes	No	No	No	No	No	No	No	Yes	1	12.5%
9	Newspapers	No	No	Yes	No	No	No	No	No	1	12.5%
10	Magazines	Yes	No	Yes	No	No	No	No	No	2	25%

6.14 Information About Services in Library

The presence of information regarding the services of library is given in Table-14. All the eight libraries have mentioned about circulation service and OPAC/WEB OPAC service while 7 (87.5%) libraries provides reference services except IISER Bhopal. Document Delivery Service, Bibliographic Service, Plagiarism Check/ Research Assistant and User orientation provided by 5(62.5%) libraries. Only half 4(50%) of libraries provide inter Library Loan Service. The services i.e. Reprography Service, Current Awareness Service (CAS) and Digital Library provide by only 3 (37.5%) libraries while out of eight only 1(12.5%) i.e. IISER Mohali provide the service of Newspaper Clipping.

Table-14: Information about Services in Library

Sr. No.	Checklist	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Frequency	%
1	Circulation Service	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
2	Reference Service	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	7	87.5%
3	Newspaper Clipping	No	No	Yes	No	No	No	No	No	1	12.5%
4	Reprography Service	No	No	Yes	Yes	No	No	No	Yes	3	37.5%
5	Document Delivery Service (DDS)	Yes	No	Yes	Yes	No	No	Yes	Yes	5	62.5%
6	Current Awareness Service (CAS)	Yes	No	No	No	No	No	Yes	Yes	3	37.5%
7	Bibliographic Service	No	Yes	Yes	No	Yes	Yes	No	Yes	5	62.5%
9	Plagiarism Check/ Research Assistant	Yes	Yes	X	X	Yes	Yes	Yes	No	5	62.5%
10	Inter Library Loan (ILL)	Yes	No	Yes	Yes	No	No	Yes	No	4	50%
11	Digital Library	No	No	Yes	Yes	Yes	No	No	No	3	37.5%
12	OPAC/Web OPAC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
13	User Orientation	Yes	Yes	Yes	Yes	No	No	Yes	No	5	62.5%

6.15 Information About E-Resources & E-Services

Involvement of ICT based technologies in libraries increase day by day so use of e-resources and e-service increase in academic libraries. Table-15 gives the analysis of information about e-resources & e-services provided by the IISER and IISC libraries. Study reveals that all 8 (100%) libraries have included the information regarding e-journals, e-books, and full text databases while 7 (87.5%) library websites provides the e-services like Bibliographic Database, E-Magazine, Remote Access and Research Support Tools. The service i.e. E-Newspapers, IRINS Profile Service and Library Catalogue provided by 6 (75%) library website while 5 (62.5%) library website gives details of Open Access Resources and OPAC Access service. Study also shows that only half of the IISER & IISC institutes mention details on E-Thesis & Dissertation and very few 3 (37.5%) libraries provide the information of Institutional Repository (IR) service.

Table-15: Information about E-Resources & E-Services

Sr. No.	Checklist	IISERP	IISERK	IISERM	IISERB	IISERTH	IISERT	IISERBE	IISCB	Frequency	%
1	E-Journal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
2	E-Books	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
3	Bibliographic Database	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	7	87.5%
4	Open Access Resources	Yes	Yes	Yes	Yes	No	Yes	No	No	5	62.5%
5	Full Text Database	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	100%
6	OPAC Access	Yes	No	Yes	Yes	Yes	Yes	No	No	5	62.5%
7	E-Newspapers	Yes	No	Yes	Yes	Yes	No	Yes	Yes	6	75%
8	E-Magazine	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	7	87.5%
9	E-Thesis & Dissertation	Yes	No	No	Yes	Yes	No	No	Yes	4	50%
10	Research Support Tools	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	7	87.5%
11	Remote Access	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	7	87.5%

12	Institutional Repository (IR)	Yes	No	Yes	Yes	No	No	No	No	3	37.5%
13	IRINS Profile Service	Yes	Yes	No	Yes	Yes	No	Yes	Yes	6	75%
14	Library Catalogue	Yes	Yes	No	Yes	Yes	No	Yes	Yes	6	75%

VII. RESULTS AND KEY FINDINGS

- It is found that all IISER and IISc institutions library website have .ac.in domain for their website and support mobile friendly responsive view, webpage save and printing option as well as content copying option
- More than half of the libraries 5 (62.5%) websites uses text, images graphics for design purpose using full width header with fixed width content layout and having a library accessibility link under the menu like facilities, resources, campus infrastructure etc.
- 50% of the library website offers two language (English & Hindi) in their websites
- 6 (75.5%) of IISER and IISc institutes library websites have search option, social media share links, and language selection option tool in their Library website home page.
- Only 2 (25%) institutions i.e. IISER Bhopal and IISc. Bengaluru have separate library website including Font resize, Theme color toggle switch and multilingual selection option.
- Only 12.5% of website providing screen reader facility with details of date of update and present date in website/webpage.
- All 8 (100%) institutes library website having the details about Library/History, Membership and Contact details.
- Only Half 4 (50%) library websites showing the details regarding statistics of databases, e-books, journals and e-journals.
- All 8 (100%) libraries provides the details about e-resources like full text databases, e-books and e-journals and while 7 (87.5%) library websites provides the e-services like Bibliographic Database, E-Magazine, Remote Access and Research Support Tools.
- All IISER and IISc provides circulation service and OPAC/WEB OPAC service while 7 (87.5%) libraries provides reference services except IISER Bhopal.
- Among the eight library, 7 (87.5%) library websites have provided the postal address and details of Phone No. of Library/Librarian/Library Person.

VIII. SUGGESTION

- Most of libraries not providing the information of library services which they provides and also not mentioning the collection statistics clearly, hence they needs to provide details on their services and e-resources and service.
- No one library website provide any details on Google location map/virtual map of library
- Most of the library needs to work on their user interface to upgrade their utility.
- Use of graphics and animation to increase the attentiveness of user towards the website.
- Libraries should need to focus on providing aids and tools which improve their website design and usability

IX. CONCLUSION

The study reveals that most of the IISER and IISc institutions library website/webpages differ from each other in many respect like in design and their development pattern, also differ in their web tools provided in their website for smooth functionality of website. Majority of the website not offering any tools such as site map, screen reader, font resize option in their website which not helps the user to use website smoothly. Top institutions like IISER Pune, Kolkata, Thiruvananthapuram and Tirupati not having separate website while IISER Mohali and Berhampur uses Koha ILMS for their library website for dissemination their library services and resource to user. Hence most of the library websites need to improve and update frequently as per the user requirements and needs with respect to their design, content and library information.

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