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**CONTENT ANALYSIS OF LIBRARY WEBSITES OF
CSIR-INSTITUTIONS OF UTTAR PRADESH AND
DELHI, INDIA: A STUDY**

A Dissertation

FOR THE DEGREE OF

MASTER OF PHILOSOPHY

IN

LIBRARY AND INFORMATION SCIENCE

SUBMITTED BY

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DECLARATION

I, hereby declare that the dissertation titled “**CONTENT ANALYSIS OF LIBRARY WEBSITES OF CSIR-INSTITUTIONS OF UTTAR PRADESH AND DELHI, INDIA: A STUDY**” has carried out by me under the supervision of **Prof. Shilpi Verma**, Head, DLIS, BBAU, Lucknow for the award of the degree of Master of Philosophy in Library and Information Science, is an outcome of my effort and with my knowledge, it is an original work. I declare that the content of this dissertation did not form a basis for the award of any previous degree or diploma to this or any other University. Further, I undertake that the dissertation is essentially free from all kinds of plagiarism and the sources used in this study have been duly acknowledged.

I hereby also undertake that the dissertation submitted by me to Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow satisfies all the requirements as stipulated in the *Master of Philosophy (M. Phil.) Regulations- 2016 as amended in 2019* and it is fit for the submission and evaluation for the award of the degree of Master of Philosophy in Library and Information Science of the university.

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CERTIFICATE

This is to certify that the dissertation titled “**CONTENT ANALYSIS OF LIBRARY WEBSITES OF CSIR-INSTITUTIONS OF UTTAR PRADESH AND DELHI, INDIA: A STUDY**” submitted by **Kamal Bajpai** is an original research work and has not been previously submitted in part or full for the award of any other degree or diploma to this or any other university.

The dissertation submitted to Babasaheb Bhimrao Ambedkar University, Lucknow satisfies all the requirements as stipulated in *Master of Philosophy (M. Phil.) regulations-2016 as amended in 2019* and it is fit for submission and evaluation for the award of the degree of Master of Philosophy of the University.

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ABBREVIATIONS

CSIR	Council of Scientific & Industrial Research
CDRI	Central Drug Research Institute
CIMAP	Central Institute of Medicinal and Aromatic Plants
IITR	Indian Institute of Toxicology Research
NBRI	National Botanical Research Institute
IGIB	Institute of Genomics and Integrative Biology
CRRI	Central Road Research Institute
NISCAIR	National Institute of Science Communication and Information Resources
NISTADS	National Institute of Science, Technology And Development Studies
NPL	National Physical Laboratory
KRC	Knowledge Resource Centre
ICT	Information and Communication Technology
WWW	World Wide Web
PWD	Person with Disabilities
UN	United Nation
SEO	Search Engine Optimization
SMS	Short Messaging Service
CAS	Current Awareness Service
OPAC	Online Public Access Catalogue
IIT	Indian Institute of Technology
CD	Compact Disc
DVD	Digital Versatile Disc
WHO	World Health Organization

FAO	Food and Agriculture Organisation
DSIR	Department of Scientific & Industrial Research
BSIR	Board of Scientific & Industrial Research
IRUC	Industrial Research Utilization Committee
JMAP	Journal of Medicinal and Aromatic Plant
JCCC	J-Gate Custom Content for Consortium
ISO	International Organisation for Standardization

PREFACE

Today, World Wide Web has become an essential and an increasingly vital part of our day to day lives. World Wide Web has transform the way we connect with others and share information. In 2021, the number of internet users in India stood at 560 million where is second throughout the world wide. Institutes and Universities in India have successfully implemented and utilized power of Internet in communicating and providing necessary information at single window to multiple users. Apart from internet serves to streamline the admission process with the arrival of Covid-19, internet has emerged as the saviour for education field.

Library websites is one of the best tool to publicize the resources and services of the library and make the users aware about them. Library websites can prove to be a single window for providing information to different users in different subject at same time. Library website is vital in the sense that it helps to build a long relationship with patrons and keep them updated with new service or product.

This dissertation work has been divided into the following five chapters.

CHAPTER 1: INTRODUCTION

The first chapter contain the brief introductory part about the background of the study, which introduces definition of key term, objectives of, the study, scope of the study, hypothesis, research methodology, tools and techniques and significance of the study.

CHAPTER 2: REVIEW OF THE LITERATURE

The second chapter review of literature discusses all recent study on content analysis of library websites with special reference to university library websites, institute library websites, medical library websites and other library websites.

CHAPTER 3: PROFILE OF CSIR- INSTITUTIONS

Third chapter presents the brief introduction of CSIR Institutions and their libraries.

CHAPTER 4: DATA ANALYSIS AND INTERPRETATION

Fourth chapter presents the tabulation, interpretation and graphical representation of the collected data from libraries

CHAPTER 5: FINDINGS, CONCLUSION AND SUGGESTIONS

Fifth and last chapter present the findings, and area of further studies. Findings are a collection of summarized form of data interpretation which are based on chapter-4. After finding, the conclusion, suggestion and areas for further research have been stated in this chapter.

CHAPTER 1
INTRODUCTION

CHAPTER-1 INTRODUCTION

1.1 INTRODUCTION:

India is a developing country and we are living in the era of technology. For the development of any university or institutions library plays an important role. As we know that this is the period of technology, library websites are key for the development of any institution. But we see that most of the institutions does not have its library websites. Before going to any Institution or University user wanted to see the things available on the websites. Library websites can be very simple, because the main purpose of any library websites is to promote its services.

Due to advance developments in ICT, it has transformed the education field by starting the new ways of learning and information sharing. Post -secondary students or undergraduate students are honoured with abundance of knowledge for their studies and research work in comparison to pre-ICT era before the innovation of WWW as it is one of the most effective ways to achieve and produce information. (Jer Yuen & Majid, 2007)

The advancement of the web is greatly changing the way of users interacts with information and with other people. As libraries are growing in electronic period, our perceptibility on web is gradually becoming important for conveying the needs and demands of our patrons. Academic libraries have accepted WWW by increasing better viewpoint to meet patron demands.(Lopes & Carriço, 2008)

In the contemporary age of internet there has been common use of information technologies. World Wide Web has made tremendous impact on every field. Libraries even not left untouched by its effect. Today in the age of ICT there has been significant changes in the functions and functioning of library.

Library website have been mirror image of the library. It provides a better platform to explore and access the content from any location at any given time. Libraries are playing a vital role in the dissemination information services through their websites (Haridasan & Uwesh, n.d.). They serve as essential tools for content delivery and outreach activities libraries (Wilson, 2015).

Khan, Idrees and Mudassir (2015) examined that the website is a fundamental source of information for people with disabilities (PWDs). This is basic human right perceived in the UN convention on the Rights of PWDs, clearly assign to the internet and other Information and Communication Technologies (ICT) as an access code for them. Various researchers served that the internet and ICT are three times more interactive and accessible for normal people than disabled persons

Library website serves as main window to access library resource and services. Special library websites not only provide information about libraries and libraries services, but also provides access to online catalogues, electronic database, subject resources and digital collection.

Due to changes in technologies, library websites need periodic evaluation to improve its quality and ensure user friendliness. Assessment of library website is inevitable in the current scenario and there is no exception from it (Still,2001). Since, libraries are becoming more accountable and have to prove that they are meeting performance metrics for funding and accreditation, a website is a way to display (Clunie and Parrish, 2018). Evaluation is a worthy judgement of its utility with several of the component elements of a website that facilitates browsing, navigation and searching and locating of the desired information (Madhusudhan, 2012). Evaluation of content available on library website must be done frequently so as to have proper and updated web content and information of the website.

Analysis of the contents of library websites from time to time not only keeps the quality of websites at high standards but also updates information to the users.

Website content analysis will help in analysing weakness and strength of library website. It helps in recommending better suggestion for redesigning of these library websites and in presenting users with better designed websites and user-friendly interface. Website analysis is the knowledge and method of gathering, measuring, examining; and reporting webs and details of using web application it's a way of evaluating and analysing website performance in terms of SEO (Search engine optimization). It's a series of test prints to see if website works properly (Burby and Brown, 2007).

Proper measurement, up-dation and evaluation of library website is very important from librarian perspectives too as it helps in finding out issues for rectification, upgradation, performance enhancement and improvement for effectiveness.

Some Checklist of innovative services given by library websites through webpages.

- **Use of interactive & revolutionary net features:** In trendy surroundings Web 2.0 administrations are regularly attending to be essential elements in libraries. Innovative upgrades inclusive of net innovation have developed making all, the more cordial, social and light situations for getting better & allocation of statistics.
- **OPAC / Web-OPAC internet / intranet:** With the invention of increase technology and automation in libraries it is possible to have online catalogue of all library books which may be handy via net or in the campus by intranet.
- **Institutional repositories:** Institutional repositories are digital collection of the institutional records to be had on intranet inside the institution. Library website offers hyperlinks to IR to get right of entry to that intranet or may be shared on web, e-book chapters with the aid of academic team of workers, conference lawsuits, research projects & theses etc.
- **Interlibrary mortgage:** Library is growing organism, something to be had in the library isn't enough. User may additionally explore greater series by using taking inter library loan from other libraries within the city.
- **Quick links:** Library presents quick links to different beneficial website which directs the consumer to browse that hyperlink without searching on net.
- **Online remarks:** Library creates on-line paperwork for library remarks and offers link to library internet site asking remarks from the users on-line. That helps to examine better and improve the library services as in keeping with remarks given by means of the users.
- **Library membership:** Public libraries can supply online library club by paying club costs on line. British library is online wherein online catalogues available. User can take a look at the catalogue online, and placed a request. Pick up and drop facility is given by the library.
- **Virtual reference desk:** Through digital reference desk person can ask reference query via electronic mail, messenger and many others. User want now not to return to the library physically. His queries may be solved surely or through net paperwork.

- **Ask a librarian service:** Libraries can create carrier of Ask –A –Librarian in which customers can ask reference queries via on line chat with reference librarian. Libraries have to provide dialogue discussion board & feedback facility so one can supply their precious guidelines for the brand-new services which can be commenced or can endorse to alter present provider for the higher utilization.
- **FAQs:** Frequently ask questions may be placed up on the internet site to recognize everything about the library. Some queries are generalized and asked through all of the users, those queries may be placed up in the form questions and the solutions of the same.
- **Social media utility:** In order to reach maximum users of society, libraries can create their account on social networking web sites and can be connected to them. Libraries can use theses platform to announce numerous offerings, new arrivals, numerous bulletins like club, workshops, seminar, exhibitions and so on.
- **Online library information:** Usage records of any unique library can place on-line through internet site showing utilization of diverse services to draw the readers more within the library. New arrival list, current journals listing and unique collection can be shared through internet site P a g e. SMS textual content messages may be sent to the clients (users of a library) with the intention to remind them of the late books and whilst they're due. The SMS facility can be used as a medium for the communication of reference queries in libraries. It is a shape of virtual reference provider. The text messaging statistics

Aim of Library Websites:

The important aim of library website is to focus on its patrons to provide them best services.

The five main aim of a library websites should be:

- Library websites shows a path to their rights to use the resources.
- It provides a platform to their users to search and by avoiding equivocal in accessing resources.
- Library websites serves as guide of availability of resources, which the library holds and the services provided by the libraries.
- It also makes user competent so that they become self-dependent in using the resources available on library.
- It builds a strong relationship between the library and users.

1.2 CONTENT ANALYSIS:

DEFINITION OF CONTENT ANALYSIS:

In simple term, content analysis is a study of the message itself. The content analysis is a method to make emphasis on aspects like system, objectivity, quantification, context and validity with reference to the inferences drawn from the communication content about the sender, the message, or the receiver of the message. It is related all about making valid, replicable and objective inferences about the message on the basis of explicit rules(Content Analysis A Method in Social Science Research 1, n.d.).

Holsti (1968) defined that it is a technique for making inferences by systematically and objectively identifying specified characteristics of messages.

Krippendorff (1980) defined it as a research technique for making replicable and valid inferences from data to their context.

Kerlinger (1986) defined it as “as a method of studying and analysing communication in a systematic, objective, and quantitative manner for the purpose of measuring variables”.

Bernard Berelson (1952) defined “content analysis as a research technique for the objective, systematic, and quantitative explanation of the apparent content of communication”.

Content analysis is based on the three basic principles of the scientific method like all other methods of research. They are as below;

1. Objectivity: As analysis is guided by certain rules, so different researchers will get same result from the same sources they are analysing.
2. Systematic: By eliminating the chances of integrating the only material supporting the researcher’s idea, the omitting and addition of the content are guided by strongly reliable rules.
3. External validity or Generalizability: Means that results can be applied to other same type of situations which is obtained by researchers.

From the above definitions it is clear that content analysis is quantitative explanation of content. It analyses the communication in systematic and quantitative manner.

Content Analysis is generally of two types:

Conceptual Analysis: It tries to find out the existence and frequency of communication done by humans.

Relational Analysis: As from the term it is clear that this analysis involves in determining the relationship of concept.

As per Krippendorff (1980), in content analysis, six questions must be addressed.

- Which types of information are analysed?
- How are related data is defined?
- From what population are the data drawn?
- What is the context which is relevant to the content?
- What are the extents of content analysis?
- What is to be measured?

1.3 Advantages of Content Analysis:

Content analysis is widely used in social sciences. It is used to determine the existence of the themes and concepts within a text. Mostly it is used by research scholars of social science and mass communication research. Content analysis is done to understand the change in cultural symbols, to study the changing trends etc.

For understanding the changing in cultural symbols, Tavis (1969) has done a content analysis of popular magazine fiction in the 1900's and 1950's for testing the hypothesis that social alienation had been decreasing in the middle-class American society while alienation had been increasing. The finding which comes out from this was that there was a large increase in self - alienation and there was a slight decrease in social alienation.

Another use of content analysis is to study the changing trends. Vijayalakshmi et.al (1996) analysed 194 articles using stratified random sampling which was published from 1971-1990 in the *Indian Journal of Social Work* to identify the authors characteristics and documents and also methodological characteristics such as research design, sampling and the statistical techniques which was used in the articles.

One of the significant areas of use of content analysis of newspaper of election is to determine the opinion of voters.

Prasad & Kumar (1991) analysed four dailies which was published in India before 1991 election. He analysed the editorials & letters to editors of four dailies to find out the theme which was figured in the news in that newspaper.

- Both qualitative and quantitative analysis are allowed.
- It permits to come close to the data.
- Communication which are in coded form can be analysed statistically.
- While analysis the text it does not take attraction means that it is an unobtrusive.

1.4 Disadvantages of Content Analysis:

- The inferences are constrained to the content of the textual content simplest. Similarly, symbols are processed and coded according to the attribution given via the researcher or coder. There is not any guarantee that the sender or receiver shares the identical attributed which means.
- When it deals with semantic variations or variations in regard to the meanings of words, the findings may be much less valid and dependable.
- It is time consuming, large quantities of content is coded manually which is time consuming.
- It is subjective which means that some personal interpretations are involved, which affects the reliability and validity.

1.5 STATEMENT OF THE PROBLEM: With the advancement of technology criteria for evaluation of any library has also changed. Now analysis of library websites can be done through the content analysis though which we can understand the quality level of any library, its collection and services by sitting at one place. The study is focused on the *Content Analysis of Library Websites of CSIR-Institutions of Uttar Pradesh and Delhi, India: A Study*

1.6 OBJECTIVES:

1. To know about the basic information available on these websites.
2. To know the library collection, library services and links to other resources available in the library website of institutions
3. To know about the features of library websites.
4. To examine the e-resources available on the websites.
5. To examine the application of Web 2.0 technologies on the website of CSIR Institutes.
6. To examine the changes and updation done during COVID-19
7. To prepare the comparative checklist of library websites of CSIR Institutions of Uttar Pradesh and Delhi

1.7 HYPOTHESIS

H₁: Basic information are available on library websites

H₂: CSIR institutions has separate library home pages

H₃: Library websites are updated regularly

1.8 SCOPE

There are 39 national institutes of CSIR in India but most of the CSIR institutes are located in Uttar Pradesh and Delhi. There are total 9 institutes of CSIR located in U. P and Delhi. The scope of the research work is to the analyse library websites of Council of Scientific & Industrial Research Institutes of Uttar Pradesh and Delhi region. There are 4 CSIR Institutes in Lucknow and 5 Institutes in Delhi. CSIR Institutes located in Lucknow are: 1- CSIR- Indian Institute of Toxicology Research (CSIR-IITR), 2- CSIR- National Botanical Research Institutes (CSIR-NBRI), 3-CSIR-Central Drug Research Institutes (CSIR-CDRI) and 4- CSIR- Central Institutes of Medicinal and Aromatic Plants (CSIR-CIMAP). CSIR Institutes located in Delhi are: 1-CSIR- Central Road Research Institutes (CSIR-CRRI), 2- CSIR-Institutes of Genomics and Integrative Biology (CSIR-IGIB), 3-CSIR- National Institute of Science Communication and Information Resources (CSIR-NISCAIR),4-CSIR- National Institutes of Science Technology and Development Studies (CSIR-NISTADS), 5- CSIR-National Physical Laboratory (CSIR-NPL).

1.9 LIMITATIONS OF THE STUDY

- The present study mainly focuses on the CSIR Institutes of Uttar Pradesh and Delhi.
- The study is limited to the contents available on library websites of CSIR institutes of Uttar Pradesh and Delhi.

1.10 RESEARCH METHODOLOGY:

Research methodology is one of the important part of any research. So, methodology should be very systematic, it gives the blue print of any research work. In the present study the library websites of CSIR institutions of U.P. and Delhi has been observed and studied during 1 July 2021 to 5th August 2021. The checklist was prepared based on the earliest studies. Investigator is also assuming that the things present on library websites means that these are present on library also.

The study was conducted in different phases. The methods which are followed in the study are described below:

- Literature search
- Design of the study
- Selection of sample
- Details of Tools
- Steps of Data collection
- Statistical Analysis
- Citation style used

1.10.1 Literature search: The investigator has searched various e- resources such as Emerald, Google scholar and Other Internet resources related to the topic. Investigator has also examined various primary sources such as journals, theses, books etc. related to the topic.

1.10.2 Design of the study: List of CSIR institutes of Uttar Pradesh and Delhi are taken from the official websites of CSIR.

1.10.3 Selection of Sample: As per CSIR there are 39 national institutes from which 9 institutes are selected for the study located in U.P. and Delhi.

1.10.4 Details of the tools: There is no standard parameter present to examine the contents of library websites of CSIR institutes. In this study the investigator has adopted the necessary elements for the following guidelines and thesis to analyse the contents of library websites of CSIR Institutes of Uttar Pradesh and Delhi.

- Guidelines for Indian Government websites: An integral part of Central secretariat manual of office procedure, NIC (Ministry of Communication and Information Technology [GOI],2009)
- Web Content and Design Trends of Indian Institute of Management (IIMs) Libraries Website: An Analysis (Verma & Devi, 2016)
- Content Analysis of select University library websites of India: An evaluative Study (Kumar & Verma, 2018)

1.10.5 Steps of Data Collection:

1.10.5.1 Main Study

In the main study a checklist of 62 parameter was finalised. In the present study investigator collected data from the library websites through online survey during 1 July 2021 to 5th August 2021.

The checklist was divided into the following eight categories.

1. General Information about libraries
2. Library Collection
3. Library Services
4. Information on e-resources
5. Features of Library websites of CSIR Institutes
6. Web 2.0 Tools
7. Interactive user Interface
8. Changes and updation on library website during COVID 19

1.10.6 Statistical Analysis Adopted: The rating system is 0 and 1. 0 is for the things which is not available on library websites and 1 is for available things given on library websites, through the following rating the researcher may come out to the result that which CSIR institutions provides better collection and services.

1.10.7 Citation Style:

Reference and Bibliography is prepared by applying (APA) 6th edition American Psychological Association which is widely used in Library and Information Science.

1.11 Significance of the Study: This study is done to evaluate the library home pages of CSIR institutes of U.P and Delhi. A checklist has been used to gather data of all library webpages to find out the general information, collection and service resources, features etc. of library websites. This study will help in analysing weakness and strength of library website and will also help in recommending better suggestion for redesigning of these library websites and in presenting users with better designed websites and user-friendly interface.

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CHAPTER 2
REVIEW OF LITERATURE

CHAPTER-2 REVIEW OF LITERATURE

2.1 Review of literature:

Review of literature is indispensable requirement for any field as it is important for any researcher. This helps the researcher to be familiar and aware of the ground that is already done, so that researcher can step forward in right direction.

Review of both published and unpublished sources was done for preparing this dissertation. The following studies related with the topic pursued in this particular dissertation.

C.A, Ambika and P, Ganesan (2021) in their article “**Central University library websites in India: A Web Content Analysis**” investigated 13 central universities established between 2001-2010. The study found that only four library websites has mentioned their mission/vision and information about the library committee. It is found that except for University of Kashmir library websites, every university has mentioned its working hours on library websites. A rich collection of books and journals are available. Except for University of Tamil Nadu, no library websites have given information regarding reference material. Every university library website provides services of OPAC except Indira Gandhi National Tribal University. A good number of library websites provide CAS services. Except for central university of Haryana, every university subscribes to e-journals. Library websites of the Central University of Orissa are ranked first, getting a 25 score out of 30. The study concludes that library services regarding reference materials should be provided, and library websites should also be regularly updated.

Haridasan, Sudharma and Firdaus, Shamama (2021) in their article “**Application of Web-Based sources and Services for Sustainable Development in University Libraries**”, he investigated 50 top-ranked Indian Universities, among which 42 were shortlisted. The study's objective was to find out the web-based services and sources provided by university library websites. The study reveals that 97.62% of university library websites provide OPAC services, but a small percentage of library websites provide library applications and virtual library tour. 90.48% library e-services, only one library provide video conferencing services to users. It was also found that large number libraries do not offer web 2.0 services. Only few libraries are active on Facebook, YouTube and Blog. A maximum number of libraries offered links to an online database, e-journal and e-books.

The study concludes that libraries are needed to explore full potential of social media services and web 2.0 tools.

Jhonson, Sheeba and Ramasamy (2021) in their article “**Content Analysis of Homepages of Library Websites of the top 10 IITs in India.**” It is observed that availability of library website content is not bilingual, it is just accessible in English only. Almost each IIT library websites have provided a link on its library homepage for its parent institutions. Top 10 IITs library websites are excellent in its design, colour and layout. No top IITs library websites have mentioned its vision and mission. 100% of library websites has mentioned library name with its institute logo, working hours, library news and recent updates and useful links. It is found that the top 10 IITs library websites are fare in web 2.0 tools.

Mandrekar, Bala K. and Rodrigues, M (2021) in their article “**Importance of Web-Based services during the Pandemic: A Critical Analysis of the Content of College Library Website**” the study focuses on finding out the library’s services provided on the library websites of Goa colleges. It was found that only 2.9% of libraries provide services by using social media tools such as Facebook, Twitter, YouTube, LinkedIn, while 5.8% of college library websites provide e-mail and SMS services. The study further reveals that a small number of library websites offer links to Swayam Portal, E- pg Pathshala, NPTEL, Shodhganga. The study concludes that out of 29 libraries, only four libraries were provided with grades as good. There is a lack of use of a social media tool, so the library website needs to focus on web 2.0 and social media tools.

Minzava, Ester and Katabalwa (2021) in their article “**Library websites during the COVID-19 pandemic**”, The study aimed to find out how universities and research library websites responded during the pandemic COVID-19. The study also focused on opening and closing hours of libraries. The study was conducted on 42 libraries which COTUL obtained, but only 24 library websites has been found which were available. It has been found that out of 24 library websites only 12 library websites were present, which had mentioned information about opening and closing hours of the library. The study concludes that there is a lack of updates on library websites.

Mumtaz, Rabia and Shahzad (2021) conducted a study on HEC recognized public and private sector university library websites. The study found that out of 103 public sector

universities only 34% of library websites provide access to home links on every page and out of 74 private sector universities only 24% of library websites provides access to home links. Only 3% of public sector universities provide feedback form on the library webpage and use of web 2.0 application on library website seems very less.

Rai, Poorvi and Verma, Shilpi. (2021) evaluated the library websites of central universities of Uttar Pradesh and found that maximum universities have mentioned general information about libraries. 50% of the library websites has provides collection on e-books, e-journal. E-references. Among all central universities of Uttar Pradesh, Aligarh Muslim University library website is on 1st rank providing maximum information about collection and providing best facilities.

Rafiq, Sadaf et al. (2021) evaluated the library websites of the top 50 universities of medicine globally and found all universities mentioned that general information about library services, library hours and ongoing projects. It is also found that some of general information has been missing, such as mission, vision and objectives. It is also founds that none of the top 50 universities offered all 16 resources mentioned on the list. The study also reveals that 98% of ranked universities preferred web of science database for accessing. For information collection and dissemination, all 50 ranked universities prefer Facebook, Twitter, Instagram, YouTube and Linked In. The findings reveal that some universities did not add information regarding COVID-19 in their homepages, so the library needs to be updated regarding new services and information.

Tunga, Santosh Kumar(2021)conducted a study on “Content analysis of library websites of National Institutes in West Bengal, India: An Evaluative study”. Content of websites was divided in 5 sections like basic information, collection, electronic resources, services, features of websites. The study found that AIIMS Kalyani did not have webpage. Out of fourteen Institutes Indian Statistical Institute library website has obtained 1st rank. None of the library websites has obtained ‘Excellent’ ranked. The study suggested that websites should be used as standard for improving library websites.

Yumnam, Gyanajeet and Singh, Cl. (2021) in their article “**Content Analysis of Library websites of Central Universities of North East India.**” found that all central universities of north east have a rich collection of books, periodicals, e-books, e-journals, reference

sources, newspapers. The study also found that all nine universities have e-mail account. 77.78% of central universities are active on Facebook. Only Mizoram university is active in Instagram. All nine central university of northeast gives general information about the library, Library hour, membership, services. Expert Manipur university all universities have mention about staff & website copyright.

Ibrahim, et.al (2020) conducted a study on content analysis of library websites of selected Nigerian Universities, the purpose of the study was to identify the basic information available on library websites, the type of services available on websites and the study found that 4.8% of library websites has given feedback option on the website. None of the library websites has given information about library staff. The findings also revealed that reserved section, special section was not available in the library websites. Only 2 state and none of the private universities provide social media services.

Rahman, Azizur and Batcha, M. Sadik (2020) in their article “**Content Analysis of Library Websites of Select Colleges of Delhi University: A Study**”, he conducted a study on 10 colleges of Delhi University. The study found that Aryabhata college and Ramjas college of Delhi University does not provide any library resources and services on their library websites which were given in the list. There score 0 out of 15 while Deshbandhu college got 15 Out of 15. None of the college’s libraries were updated. No libraries were having a feedback and keyword search facility. Further study reveals that Deshbandhu college has been ranked first in the list, getting a 38score out of 43while Ramjas college has been ranked as 9. Two colleges have been Aryabhata college and Hansraj colleges, are in the same position.

Aradhara, Apsora and Borah, Nayana (2019)in their article “**Library Websites of Central Universities of Assam: A Study**” studied that what were the facilities and services which were provided by central universities library websites and to evaluate the ranking of Assam university websites according to Google page rank. The study found that Assam university library website does not provide general information about mission/vision, library hours, library sections and services, while Tezpur university library websites give all general information that was shown on the list. Both of the universities do not provide any information about list of print journals. No information is being provided by Assam university library websites about library sections. Both central universities subscribe to e-

books, e-journal, e-databases, e-thesis, e-references. The study found that Tezpur university are rich in collection and services compared to Assam university.

Kumar, Nilesh & Verma (2018) conducted a study on “Content Analysis of Library Websites of NAAC Accredited ‘A’ Grade University in Central Zone of India: A Study”. The study found that there were six universities in central zone accredited ‘A’ grade. The purpose of the study was to find the content available on library websites about the general library information, library collection, library services, e-resources, library on social networking. The study reveals that 50% of library has Facebook page & Blogs on library websites. None of the library websites has given information of date of updating and feedback. The study recommended that library should design their own websites with maximum content

Kuri, Ramesh and O, Maranna (2018) in their article “**Content Analysis of Central University Library Websites of South India.**” the study reveals that all major university library websites have given information about the library, working hours of the library and authority. All central university library websites provide information about library collection of books, journals. Except for English and Foreign Language University all central universities library websites have a collection of magazines. 100% central university library websites subscribe to e-books, e-journals, online databases, CD/DVD. 100% central university library websites provide download facility and contact. Except University of Hyderabad, none of the central universities qualifies the criteria of quality of websites.

Devi, Krishna & Kumar, Verma (2018) evaluated library websites of IITs and NITs. The study was conducted on 19 IITs and 29 NITs. The study's objectives were to find out the rank of IITs and NITs based on 172 parameters and a five-point rating scale. In both IITs and NITs, IIT Kanpur is ranked first, getting a 102.5 score in NIT, Nit Rourkela is reaching 71.5 scores, and overall ranking is 9th. NIT Agartala ranked 41 with a 15.5 score. IIT Palakkad and 6 NITs (NIT Mizoram, NIT Manipur, NIT Meghalaya, NIT Patna, NIT Kurukshetra, NIT Agartala needs improvement because of their score between 1-35. The study further reveals that evaluation websites should be done frequently to check the status and information available on websites to keep them updated.

Ramalingam, Jayshankar & Nachiappan (2018) conducted a web metric analysis of CSIR institute of India and found that there was 41 CSIR research institutes in India and all of them were having a website. It is also found that Delhi has maximum 5 CSIR institute. Out of 41 institute 20 research institute were having the *.res.in* domain. The study found that National Physical Laboratory and Central Salt & Marine Chemical Research Institute are at 1st and 2nd rank which is based on their external Link web Impact Factor.

Gadhavi, Geeta (2017) conducted a study on 8 institutes library websites of Institute of National importance, the purpose of the study was to identify the library collection, services, features. The study found that every institute has mentioned information about institutes and library on their library webpage. Every institute has good collection of books, periodicals and reference source. The study also reveals that only 12% library institutes of Gujrat use social network sites.

Singh, M. P &Gautam, Virendra Kumar (2017) in their article “**Content Analysis of Websites of Central University Libraries in Delhi, India: A Study**”. The objectives of the study were to identify which central university library provide better services, the presentation of university library websites, features and the services provided by central university library websites. The study found that 100% of libraries have mention about the history of library, working hours, membership and library rules. 100% of library is rich in collection of books, 100% library subscribe e-journals, e-books. Only 60% of libraries were there which have given information about newspaper. Study also reveals that 100% libraries websites can be accessed by all browsers. Only 40% of websites were there which were bilingual rest 60% of them is only in one language. The study concludes that all library websites were accessible through all web browsers and each university library websites allows for its user to send feedback.

Kumar, Sandeep and Mir, Mahendra Singh (2017) in their article “**Content analysis of Central Universities Library Websites of Central Region of India: A survey**” the study reveals that all 4 central universities of central zone provide information about their libraries in library websites. 100% of central universities libraries websites of central zone provide information about membership, library rules, copyright, library committee, library staff and library section. 100% of central universities libraries websites of central zone subscribe to e-

books, e-journal, e-database, CD/DVD. So, study reveals that central university library websites of central zone are in a good position to tell what is available in their libraries.

K S, Manjunath (2016). In their article “**Content Analysis of Special Library Websites: An Analytical Study.**” finds that all 8 special libraries located in Bengaluru have library websites URL. All libraries have given general information about institutions, about library. Many libraries are there which has not given sitemap, visitor counter, mission statement. 50% of libraries has not mentioned the date of updation. 100% of the libraries have rich collection of books, periodicals, reference sources, newspapers. More than half of library websites does not provide theses. Only National Aerospace laboratories (NAL) library websites has a collection of patents and standards. The study also examines like circulation service, reference service, Digital library service, reprographic service, Database services, Web OPAC services. None of the libraries provide SMS queries services. More than 50% of libraries has good collection of e-books, e-journals, e-database, CDs. The study also gives information about search & retrieval interface, more than 50% of libraries does not provide feedback, suggestion box. It is also founding that the graphics quality is just an average & its need to be improve.

Rekha & Chandrashekara (2016) conducted study on content analysis of 43 medical college library websites in Karnataka and founded that website need to be updated regularly and also suggested some common guidelines for library websites.

Kumar Verma et al. (2015) in their article “**Content Analysis of Central Universities Library Websites of North Eastern States of India**” has conducted a survey of Seven central universities of north east India. More than 50% universities have provided direct link on library web page through home page Except Assam University every university gives information about the library, more than 50% libraries have a rich collection of books, journals. Only Sikkim University provide reference sources. All universities subscribe e-journals. Only NEHU library websites provides all service which were mentioned on the list. The study found that library websites need to develop good collection of reference source, theses/dissertation, CD/DVSs etc. Except Tezpur university, no library website provides abstracting service, E-query service, so in service matter, library websites are yet needed to be developed.

Haridasan, Sudharma & Uwesh (2014) in their article “**Content analysis of central university library websites in India: A study.**” The study reveals about the general information provided by library websites, collection and services, and the study found that most of library websites have provided library hours and library rules. Except university of AMU, every library has a membership. All central university library websites have a good collection of books and journals. Almost each central university provides OPAC service. Almost each central universities library subscribes to e-journals.

Sife & Tandika (2014) conducted a study on Tanzanian University Library Website, the purpose of the study was to find the information about collection, e-resources, services available on library websites. The study found that only 12.5% of library websites use web 2.0. The study also reveals that library should be updated regularly. Web designers should focus on emerging technologies.

Swapna, V.S and Francis (2014) in their article “Management of Library Websites of Agricultural Universities in South India: A Content Analysis”, identified that websites have not been updated regularly. The best thing was that 100% of the agricultural libraries had provided contact and copyright which is one of the essential things for users to understand the reliability of the website. None of the Agricultural Universities has mentioned about library annual budget. (Swapna & Francis, 2014)

Pareek and Gupta, Dinesh K. (2013) conducted a study on content analysis of 52 academic library websites of Rajasthan and found that 38% of institutes use web 2.0 which is very less. Utilization of web 2.0 is necessary for development of a library. Researcher has also suggested that guidelines should be prepared by National Library of India for website and designing of library websites should be added in curriculum of the library.

Haneefa and M. K, Anajana (2010) analysed 28 national libraries websites of Asia and found that general information about libraries shows that News and Events has been mentioned in the majority of websites. There were only two websites that have mentioned information on library tours that were Bhutan and Taiwan. The study also reveals that more than 50% of libraries have provided OPAC services and a maximum number of libraries provide training and guidance services to their users. The study found that the national library should focus on subscribing to e-journals and also online databases.

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CHAPTER- 3

PROFILE OF CSIR-INSTITUTIONS

CHAPTER- 3 PROFILE OF CSIR- INSTITUTIONS

3.1 Profile of Council of Scientific and Industrial Research:

In the year 1930, it was felt to established a research organisation to develop industries and national resources. Famous personalities of that era such as C.V. Raman. Lt. Col. Seymour Sewell and J.C. Ghosh advised to form and advisory board of Scientific research.

Sir Richard Gregory editor of 'Nature' took this task in hand and submitted its report in 1933. However in May 1934 Lord Willington declined the proposal to form DSIR (Department of Scientific and Industrial Research) but advised to form an 'Industrial intelligence and Research Bureau' and it was formed in April 1935. Under the Indian Stores Department with the budget was insufficient to initiate big research work.

In 1939 Industrial Intelligence and Research Bureau was proposed to terminated and it was abolished with the efforts of Arcot Ramaswamy Mudaliar who was the member of Viceroy's executive council, "Board of Scientific and Industrial Research came into existence on April 1, 1940 under department of Commerce for period of 2 years. Mr. Mudaliar was appointed its chairman and Mr Bhatnagar as Director into budget was fixed Rs.5 lakhs and it. During very short period BSIR took number of projects in hand and completed them successfully.

In 1941, Mr. Shanti Swaroop Bhatnagar advised to Government of India to set up and Industrial Research utilisation committee (IRUC) for translating results in application. Government accepted it and agreed to make a separate fund out of the royalties received from industries for conducting research works. The proposal of IRUC was presented in central Assembly on 14th November 1941 and it was accepted.

Origin of CSIR

Mr. Mudaliar and Mr. Bhatnagar were two prominent person who prepared the constitution of the council of Scientific and Industrial Research (CSIR) as an autonomous body. With the efforts of Mr. Mudaliar and Mr. Bhatnagar this premier institute came into existence on 26th September 1942. The BSIR and IRUC became the advisory bodies to governing bodies of CSIR.

In 1943 Mr. Bhatnagar proposed to established five national laboratories and this proposal was accepted by Governing bodies of CSIR. These five laboratories established in 1943 are

- The National Chemical Laboratory.
- The National Physical Laboratory.
- The Fuel Research Station
- The Glass and Ceramics Research
- The National Metallurgical Laboratory

It was a big task and needed much financial assistance therefore Rs. One crore grant was given to CSIR. In addition to it Tata Industrial House donated Rs 20 lakhs to CSIR for chemical, metallurgical and fuel research laboratories.

In these five projects the Central Glass and Ceramics Research Institute was founded at Calcutta in December 1945. In November 1946 “National Metallurgical Laboratories founded in Jamshedpur and National Chemical Laboratory founded at Pune in April 1947. These all laboratories were completed by 1950

Organisational Structure of CSIR

- President: Prime minister is the ex officio president of CSIR.
- Vice President: Minister of Science & Technology, Govt. of India is the ex officio vice president of CSIR.
- Governing body- Director General is the chairperson of CSIR. Finance secretary (Expenditure) is the ex officio member.
- Advisory Board- Advisory Board of CSIR consist of 15 member who are renowned personalities from respective field of science and technology. Term of these members are 3 years. These members assist to Governing body by providing input in science and technology.

Research Laboratories

There are 38 laboratories working under CSIR. These laboratories have been spread all over India. Name of Laboratories and places where situated are given here under.

LIST OF CSIR LABS

- CSIR-Advanced Materials and Processes Research Institute (CSIR-AMPRI), Bhopal
- CSIR-Central Building Research Institute(CSIR-CBRI), Roorkee
- CSIR-Centre for Cellular Molecular Biology(CSIR-CCMB), Hyderabad
- CSIR-Central Drug Research Institute(CSIR-CDRI), Lucknow
- CSIR-Central Electrochemical Research Institute(CSIR-CECRI), Karaikudi
- CSIR-Central Electronics Engineering Research Institute(CSIR-CEERI), Pilani
- CSIR-Central Food Technological Research Institute(CSIR-CFTRI), Mysore
- CSIR-Central Glass Ceramic Research Institute(CSIR-CGCRI), Kolkata
- CSIR-Central Institute of Medicinal Aromatic Plants(CSIR-CIMAP), Lucknow
- CSIR-Central Institute of Mining and Fuel Research(CSIR-CIMFR) Dhanbad
- CSIR-Central Leather Research Institute(CSIR-CLRI), Chennai
- CSIR-Central Mechanical Engineering Research Institute(CSIR-CMERI), Durgapur
- CSIR-Central Road Research Institute(CSIR-CRRI), New Delhi
- CSIR-Central Scientific Instruments Organisation(CSIR-CSIO), Chandigarh
- CSIR-Central Salt Marine Chemicals Research Institute(CSIR-CSMCRI), Bhavnagar
- CSIR Fourth Paradigm Institute(CSIR-4PI), Bengaluru
- CSIR-Institute of Genomics and Integrative Biology(CSIR-IGIB), Delhi
- CSIR-Institute of Himalayan Bioresource Technology(CSIR-IHBT), Palampur
- CSIR-Indian Institute of Chemical Biology(CSIR-IICB), Kolkata
- CSIR-Indian Institute of Chemical Technology(CSIR-IICT), Hyderabad
- CSIR-Indian Institute of Integrative Medicine(CSIR-IIIM), Jammu

- CSIR-Indian Institute of Petroleum(CSIR-IIP), Dehradun
- CSIR-Indian Institute of Toxicology Research(CSIR-IITR), Lucknow
- CSIR-Institute of Minerals and Materials Technology(CSIR-IMMT), Bhubaneswar
- CSIR-Institute of Microbial Technology(CSIR-IMT), Chandigarh
- CSIR-National Aerospace Laboratories(CSIR-NAL), Bengaluru
- CSIR-National Botanical Research Institute(CSIR-NBRI), Lucknow
- CSIR-National Chemical Laboratory(CSIR-NCL), Pune
- CSIR-National Environmental Engineering Research Institute(CSIR-NEERI), Nagpur
- CSIR-North - East Institute of Science and Technology(CSIR-NEIST), Jorhat
- CSIR-National Geophysical Research Institute(CSIR-NGRI), Hyderabad
- CSIR-National Institute for Interdisciplinary Science and Technology(CSIR-NIIST),Thiruvananthapuram
- CSIR-National Institute of Oceanography(CSIR-NIO), Goa
- CSIR-National Institute of Science Communication and Information Resources(CSIR-NISCAIR), New Delhi
- CSIR-National Institute of Science, Technology and Development Studies (CSIR-NISTADS), New Delhi
- CSIR-National Metallurgical Laboratory(CSIR-NML), Jamshedpur
- CSIR-National Physical Laboratory(CSIR-NPL), New Delhi
- CSIR-Structural Engineering Research Centre(CSIR-SERC), Chennai
- CSIR-UNIT: Open-Source Drug Discovery(CSIR-OSDD), New Delhi
- CSIR-UNIT: Traditional Knowledge Digital Library(CSIR-TKDL), New Delhi
- CSIR-UNIT: Translational Research and Innovative Science Through Ayurveda (CSIR-TRISUTRA), New Delhi

- CSIR-UNIT: Human Resource Development Centre(CSIR-HRDC), Ghaziabad
- CSIR-UNIT: Unit for Research and Development of Information Products(CSIR-URDIP), Pune
- CSIR Madras Complex(CSIR-CMC),Chennai

Out of 38 laboratories of CSIR. 9 laboratories of CSIR of U.P. and Delhi has been selected for research work. These are as under.

CSIR- INSTITUTES	PLACE
CSIR-Central Drug Research Institute(CSIR-CDRI)	Lucknow
CSIR-Central Institute of Medicinal Aromatic Plants(CSIR-CIMAP)	Lucknow
CSIR- National Botanical Research Institute(CSIR-NBRI)	Lucknow
CSIR-Indian Institute of Toxicology Research(CSIR-IITR)	Lucknow
CSIR-Institute of Genomics and Integrative Biology(CSIR-IGIB)	Delhi
CSIR-Central Road Research Institute(CSIR-CRRI)	Delhi
CSIR-National Institute of Science Communication and Information Resources(CSIR-NISCAIR)	Delhi
CSIR-National Institute of Science, Technology and Development Studies (CSIR-NISTADS)	Delhi
CSIR-National Physical Laboratory(CSIR-NPL)	Delhi

CSIR NISCAIR and CSIR-NISTADS is merged into a new institute named CSIR-National Institute of Science Communication and Policy Research (CSIR-NIScPR) but it is not included in this research. Content analysis of library websites has been done of both the institutes separately.

3.2 Profile of CSIR-CDRI

CSIR- Central Drug Research Institute came into force on 17th Feb 1951. The aim of CDRI was to upgrade and uplift in field of drug research in India. It is a unique model of modern drug research having everything in one place from synthesising to clinical studies. Some brands which are in market are E-mal, Memory Sure, Saheli etc.

Various types of researchers are being conducted in CSIR-CDRI such research is on malaria and other parasitic diseases, antimicrobial resistance, viral infections, Cancer, neuroscience, cardiovascular disorders, bone health etc.

CSIR-CDRI also provide training programs for their employees. Various types of certificate course are being provided by institutes.

CSIR-CDRI also have its own library known as knowledge resource centre which provides essential information to its scientific staff, students, to its visitors in both print as well as in digital format. The objective of CSIR-CDRI, knowledge resource centre was to provide the information which is access through online. To fulfil the objectives of CSIR-CDRI, knowledge resource centre develops a collection of peer-reviewed literature which is helpful in conducting research.

Resource Type	Collection Size
Books	23000
Bound Volumes of Journals	73969
Gratis/Donations	275
e-Journals	4700 approx.
Hindi Books	927 +
Reference/ Serials	2863 +
CDRI Theses & Dissertations	1527

3.3 Profile of CSIR-CIMAP:

CSIR-CIMAP Central Institute of Medicinal and Aromatic Plants is one of the research institutes of CSIR. CIMAP was originally established as Central Indian Medicinal Plant Organisation in 1959. CIMAP conducts research in biological and chemical science, it extends technologies and services to farmers and entrepreneurs from its headquarter at Lucknow and from another research centre too.

CIMAP has other research centres located at:

- Bengaluru
- Hyderabad
- Pantnagar and Purara

Strength:

Scientists-100

Technical officer-162

Support staff-129

Doctoral and post-doctoral research-300

Knowledge Dissemination:

CSIR-CIMAP disseminates its knowledge through research publication, books, bulletins, annual report and technical literature. JMAPs is a periodic research journal of CIMAP.

Women Empowerment:

CSIR-CIMAP contributes in empowering women also. Institute also organises various entrepreneurship programs on Alovera processing and Rose water production for women so that women can start their own processing unit.

3.4 Profile of CSIR-IITR:

Indian Institute of Toxicology Research was established in 1965. It is a constituent laboratory of Council of Scientific & Industrial Research. The main motto of this research institute is Safety to Environment & Health & Service to Industry.

Objectives of CSIR-IITR:

- To safety evaluate the industrial, agriculture and daily use chemicals.
- Collecting, storing and disseminating information related to toxic chemicals.
- Human Resource Development deals with industrial and environmental problems.
- Provide diagnostic test for disorders caused by industrial and environmental chemicals.

IITR focuses on research and development activities in following five groups:

- Environmental Toxicology
- Food, Drug and Chemical Toxicology
- Regulatory Toxicology
- System Toxicology and Health Risk Assessment
- ICT and Toxic informatics.

Knowledge Resource Center (Library) of IITR

In the field of toxicology, Knowledge Resource Center of IITR serves as excellent information resource centre.

KRC of CSIR-IITR holds a good collection of books, journals and reports on various topics of scientific from science & technology to microbiology and from biochemistry to environmental health. Beside all these KRC also holds documents of WHO, FAO, etc. KRC holds reference sources like Handbooks, Directories, Encyclopaedia and Directories. There is a good collection of national and International Periodicals, about 175 periodicals are available on library of IITR.

108 National and International periodicals are subscribed by library. Full e-text journals can be accessed by scientist and technical staff of IITR which is published by Oxford, University Press, Springer, Elsevier, Blackwell, Wiley, Taylor & Francis, Cambridge University Press etc.

Various types of services are also being provided by Knowledge Resource Centre such as abstracting services, In-house bulletin and Current Awareness Services etc.



3.5 Profile of CSIR-NBRI:

National Botanical Research Institute is a pioneer research institute in the field of research, in India. Actually, NBRI is the only plant research institute of the country which undertakes research over all kind of plants.

History of CSIR- NBRI- History of the NBRI, where it is situated is very old. In 1789 A.D. it was established by Nawab of Oudh, named Saddat Ali Khan. Thereafter Nawab Wajid Ali Shah, heir of the Nawab Saadat Ali Khan and last Nawab of Oudh gifted this Royal Garden to one of his beloved queen named Sikandar Mahal Begum, and it became famous on Sikandar Bagh. It was used as her Summer Villa.

After collapse of Mughal empire, British rule begun. Britishers took over Sikander Bagh in 1858 and established it as horticulture centre. IT was known as Government horticulture Garden.

Before 1932 ‘Government Horticulture Garden’ was involved in gardening and cultivation but thereafter Prof. Birbal Sahoni and Dr. S.K. Mukherjee who were the famous plant scientist took over the interest to develop it. They acquired more land from Government herbs so that scientific study of plants including herbs their physiology structure genetics ecology and economic importance could be done at the same place. Later on, this Botanic Garden relabelled as National Botanical Garden.

National Botanical Garden is situated in Lucknow, the capital of Uttar Pradesh. Since 1932 to 1953 tremendous work was done in the field of botanical research but it was

Horticulture involves garden management and cultivators. Botanical Science is a field it involves focus on plants as whole and traditionally includes classification of species.

The core council of scientific and industrial research is a pioneer institute. It was established in 26th September, 1942 by Government of India. CSIR is an autonomous body under the Minister of Science and Technology, Government of India. It has been founded by Mr. Arcot Ramaswamy Mudaliar and Shanti Swaroop Bhatnagar.

Prime minister of India is its president. The CSIR has been emerged as the largest research and development organisation in India. It has 38 laboratories, 39 outreach centres and 3 innovation centre and 5 units all over India.

Council of Scientific and Industrial Research is doing research and development work in under rated areas

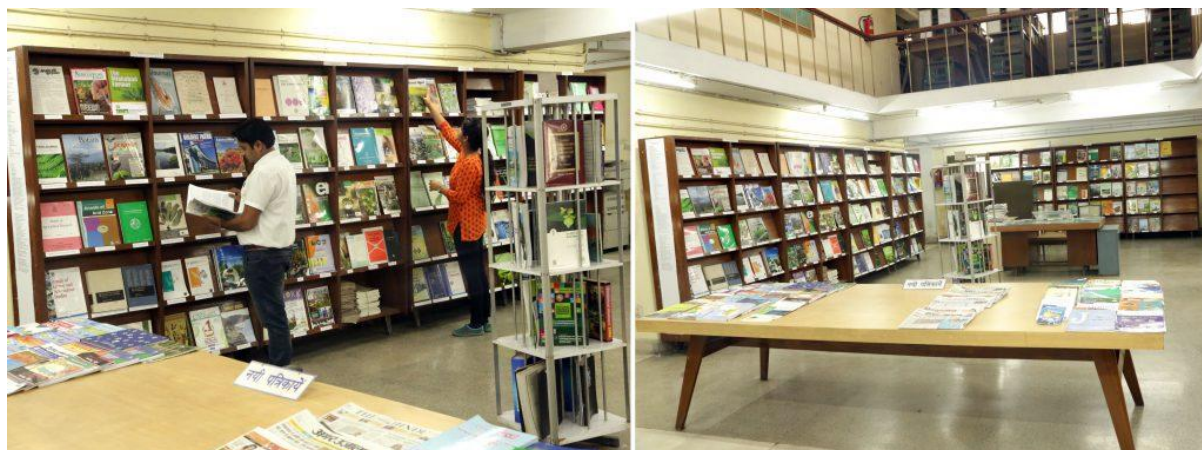
1. Aerospace Engineering
2. Structural Engineering
3. Ocean Sciences
4. Life Sciences

CSIR- Knowledge resource centre was established in the year 1964. The aim of establishment of CSIR-knowledge resource centre/ library was for its scientific, technical and for its administrative staff. The aim of this centre was to keep information in print and non-print format, maintain and disseminate information related to science & technology.

The aim of KRC was to provide correct information through electronic & print resources in the areas of science, technology and, management. Knowledge Resource centre of CSIR subscribe Indian and International print journals in the field of science, technology and management.

These knowledge resource centres maintain back volume print journals also. Users can access through online public access catalogue the resources of KRC. These Knowledge Resource Centre provides digital and reference services, Document delivery services and open access knowledge repositories.

KRC COLLECTIONS	
Books	30992
Journals Bound Volumes	30067
Theses	
– AcSIR	67
– Other Universities	83
Annual Reports	
– Institutes of CSIR	44
– Other Organizations	134
Current Periodicals	
– Online	482
– Print	50



3.6 Profile of CSIR- IGIB:

CSIR Institute of Genomics and Integrative Biology (CSIR-IGIB) is a scientific research institute firstly devoted to biological research. It was founded in the year 1977 as the centre for biochemical Technology but has since shifted its research focus to integrative biology known its is renamed as “Institute of Genomics and Integrative Biology “in 2002. IGIB has set up two extension centres- one at South Delhi and other at Western Delhi.

CSIR-IGIB Library: It was established in the year 1988. Its total collection is 8000 and Reference collection is 3200. IGIB library hold reference sources in print form such as Biographies, Dictionaries, Encyclopaedia, Bibliographies, Maps, atlas and globe, Abstracts and indexes manual and handbooks etc.

Databases subscribed by IGIB library are web of Science, Derwent Innovation Index, JCCC, Springer Journal Archive, Delphion, Journal Citation Reports (JCR) etc.

3.7 Profile of CSIR-CRRI:

Central road Research Institute is one of the premier laboratories of CSIR established in the year 1952. It is involved in carrying the research and development projects on design, construction and maintenance of roads, runway and transportation etc. It provides technical and consultancy services to user organisation in national and International.

Knowledge Resource Centre:

The motto of CRRI Knowledge Resource Centre is to be a bridge between READER & BOOK. The library of CSIR-CRRI is an ISO-9001-2015 certified library which was established in the year 1952 along with its parent organisation. It has good collection of books, standards, periodical conference, proceedings, database etc. containing worldwide information in the field of highway engineering, traffic transportation engineering. User can access through OPAC. Digital Repository software DSPACE is produced to showcase the scholarly publications. Services to access to e-journals, QR code services, Plagiarism check service, Reference and Referral Services, Library orientation programme, Bibliographic services etc.



3.8 Profile of CSIR- NISCAIR:

National Institute of Science Communication and Information Resources (NISCAIR), is located at Delhi. It is an information science institute of India which was founded in the year 2002.

Services provided by NISCAIR are e-publishing, editing, Indexing, Print & Production, Herbarium Techniques, Content, Abstracts and Photocopy Service (CAPS), Document Copy Supply Services, Translation Services, Training Programmes etc.

National Science Library:

To established National Science Library the decision was taken by CSIR in June 1963. The area of National Science Library building is about 3.5 acre. The National Science library has a good collection of printed documents of science and technology it includes monographs, standards and plants etc.

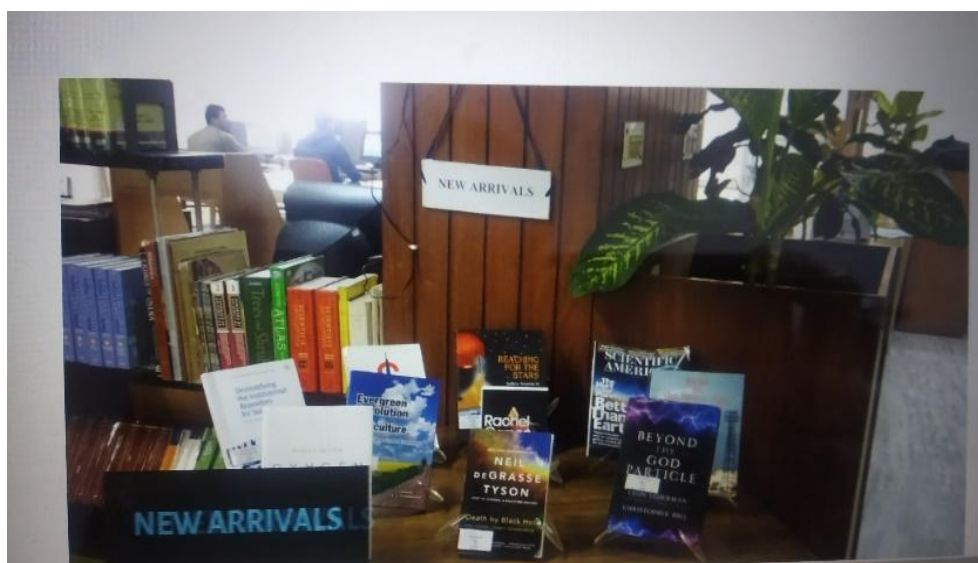
The objectives of National Science Library is to receive all scientific periodical which is of use to the nation and also a national repository for reports of scientific work of country both in published and unpublished.

Services provided by NSL is of two types(a) General Services (b) Specialised Services

General Services includes: Reference Service, Photocopying Service, Inter-library loan, Literature Search, OPAC, Membership and specialised services provided by NSL is ISSN, Bibliometric services, Walk in User Facility and CAPS.

Library has a good collection of monographs, periodical, CD-ROM database and electronic resources.

LIBRARY COLLECTION	NOS.
Bound Journal	1,20,000
Indian Periodical	1250
Foreign Periodical	300+
International e-journal	4256
e- journal	4000+
Conference Proceedings	9000
International Database	1500



3.9 Profile of CSIR-NISTADS:

CSIR-NISTADS Library is a National Resource Centre in Science Technology Society/Science Technology Innovation areas. It has diverse collection of books, archival materials, reports and handbooks in this area. The library subscribes primarily to journals covering the key contemporary trends in this area. The book and journal collection has built

up over the years. At present the library has 26581 books including books in Hindi and some in other languages. Keeping the increasing research focus on innovation and growth, sustainability, climate change, health among others, the library this year has focused on expanding the collection in these domains. A total of 176 books including handbooks primarily focusing in these areas and some new journals and scholarly magazines have been added this year. In addition, library also has subscribed two newspapers in Hindi language a few popular magazines in Hindi and English language.

3.10 Profile of CSIR-NPL:

In the field of physical sciences National Physical Laboratory is one of Premier Research Laboratory and it is also the National metrology institute of India.

It was established in the year 1943 by Governing body of Council of Scientific and Industrial Research (CSIR). Pandit Jawaharlal Nehru, the then Prime Minister of India laid the foundation stone for the laboratory on January, 1947. National Physical laboratory was one of the first laboratory which was set up under CSIR.

Knowledge Resource Centre:

Knowledge resource centre of National Physical Laboratory provides information and information Technology support to its researchers for research and development.

The aim of Knowledge Resource Centre is to enhance and modernize information technology infrastructure in laboratory. KRC serves National Physical Laboratory with wide range of services like Electronic Document Delivery service, Reprographic service, Inter library loan service, Reference service, Literature service, etc.

In addition, NPL-KRC manages:

- Wireless solution provided to various Departments/ Divisions/ Sections in National Physical Laboratory campus.
- There is Wi- Fi zone within KRC.
- 128 computers to make easy performance computing for research etc.

Library Collection as on 31st march 2021 in the following subject areas: Physics, Chemistry, Radio and Atmospheric Science, Gen. science, Metrology, Material Sciences, Electronics, Reference Books, Mathematics, Computer and Communication & Library and Information Science.

Books	44,673
Books in Hindi	2996
Back vol. of journal	80,964
Periodicals	10+
e-journals	6000+
Database	5

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- CSIR- Central Road Research Institute (2021) Accessed on 19 July 2021 <https://www.crridom.gov.in>
- CSIR- Central Road Research Institute (2021) Library. Accessed on 19 July 2021 <https://www.crridom.gov.in/content/>
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- CSIR- Institute of Genomics and Integrative Biology (2021) Accessed on 18 July 2021 <https://www.igib.res.in>
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- CSIR- National Institute of Science Communication and Information Resources (2021) Accessed on 21 July 2021 <https://www.niscair.res.in>
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- CSIR- National Institute of Science, Technology and Development Studies (2021) Accessed on 1 August 2021 www.nistads.res.in

- CSIR- National Institute of Science, Technology and Development Studies (2021) Library. Accessed on 1 August 2021 <https://www.nistads.res.in/index.php/node/60>
- CSIR- National Physical Laboratory (2021) Accessed on 4 August 2021 www.nplindia.in
- CSIR- National Physical Laboratory (2021) Library. Accessed on 4 August 2021 <https://www.nplindia.in/about-krc>

CHAPTER-4
DATA ANALYSIS AND
INTERPRETATION

CHAPTER-4 DATA ANALYSIS AND INTERPRETATION

4.1 DATA ANALYSIS AND INTERPRETATIONS: The collected data has been organised in tabular form collected from the library websites of CSIR institutions of U.P and Delhi. The study analysed the content from the CSIR institutions library websites and divided the content into following areas: CSIR institution links of library websites, General information about libraries, library collections, library services, Information on e- resources, features of library websites, Interactive user interface, Changes done on library websites during COVID 19, and Comparative checklist of library websites of CSIR institutions

TABLE 1

CSIR INSTITUES OF LUCKNOW AND DELHI

S. I	INSTITUTE NAME	YEAR	STATE	WEBSITE	LIBRARY WEB LINK
1	CSIR-CENTRAL DRUG RESEARCH INSTITUTE	1951	Lucknow	https://cdri.res.in	https://cdri.res.in/KRC.aspx Knowledge Resource Centre KRC(Library)
2	CSIR-CENTRAL INSTITUTE OF MEDICINAL & AROMATIC PLANTS	1959	Lucknow	https://www.cimap.res.in	NA
3	CSIR- INDIAN INSTITUTE OF TOXICOLOGY RESEARCH	1965	Lucknow	http://iitrindia.org	iitrindia.org/En/library-toxicology
4	CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE	1953	Lucknow	https://nbri.res.in	https://nbri.res.in/r-d-areas/s-t-support/knowledge-resource-centre-library Knowledge Resource Center (Library)

5	CSIR- INSTITUTE OF GENOMICS AND INTEGRATIVE BIOLOGY	1977	Delhi	https://www.csir.res.in	https://www.csir.res.in/ knowledge -resource-center
6	CSIR- CENTRAL ROAD RESEARCH INSTITUTE	1952	Delhi	https://www.crridom.gov.in	https://www.crridom.gov.in/ content/ documentation-library-services
7	CSIR- NATIONAL INSTITUTE OF SCIENCE COMMUNICATION AND INFORMATION	2002	Delhi	https://www.niscair.res.in	www.niscair.res.in
8	CSIR- NATIONAL INSTITUTE OF SCIENCE, TECHNOLOGY AND DEVELOPMENT STUDIES	1980	Delhi	www.nistads.res.in	https://www.nistads.res.in/ index .php/node/60
9	CSIR- NATIONAL PHYSICAL LABORATORY	1947	Delhi	www.nplindia.in	https://www.nplindia.in/ about- krc

Table 1. shows that there is total 9 CSIR institutes in Lucknow and Delhi. All institutes were established in different years. The first institute established under CSIR was National Physical Laboratory which was established in 1947. Table 1. also shows domain name of institutes and library web link.

TABLE2

GENERAL INFORMATION ABOUT LIBRARIES

GENERAL INFORMATION	CDRI	CIMAP	IITR	NBRI	IGIB	CRRI	NISCAIR	NISTADS	NPL	%
INTRODUCTION	1	0	1	1	1	1	1	1	1	89%
OBJECTIVES	1	0	0	1	1	0	1	0	0	44%
MISSION/VISION	0	0	0	0	0	0	1	0	0	11%
LIBRARY HOURS	1	0	0	0	1	0	1	0	0	33%
LIBRARY RULES	1	0	0	0	1	0	1	0	0	33%
PHOTOS/GALLERY	0	0	1	1	0	0	1	0	0	33%
MEMBERSHIP	1	0	1	0	1	1	1	0	1	67%
SERVICES	1	0	1	1	1	1	1	0	1	78%
LIBRARY STAFF	0	0	0	1	0	1	1	1	1	56%
FLOOR PLAN	0	0	0	0	0	0	1	0	0	11%
VISITOR	0	0	0	0	0	0	1	0	0	11%
Total (11)	6	0	4	5	6	4	11	2	4	

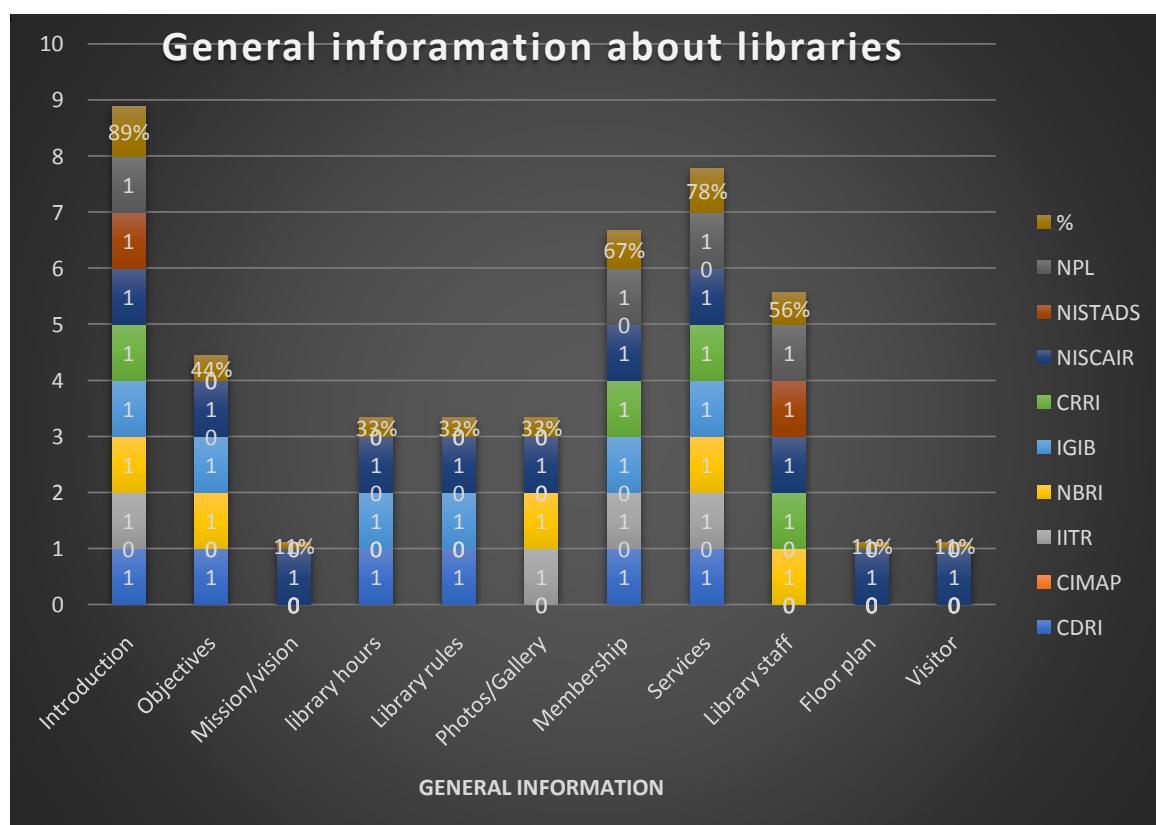


Figure 1

Table 2 and Figure 1 shows that 89% institutes has mentioned introduction, only 44% of the libraries have mentioned their objectives.33% institutions have given library rules, library hours and photos. 78% institutions have mentioned services. 55% libraries have given information about their staff and only 11% libraries have mission/vision, floor plan and visitor on their library’s website. Beside all these only NISCAIR library provides all the general information given above.

TABLE 3

LIBRARY COLLECTION

LIBRARY COLLECTION	CDRI	CIMAP	IITR	NBRI	IGIB	CRRRI	NISCAIR	NISTADS	NPL	%
Books	1	0	1	1	1	1	1	1	1	89%
Periodicals	1	0	1	1	0	1	1	1	1	78%
Journals	1	0	1	1	1	0	1	1	1	78%
Reference Source	1	0	1	1	1	0	1	1	0	67%
Reports	1	0	1	0	0	1	1	1	0	56%
Theses/ Dissertation	1	0	0	1	0	0	1	0	0	33%
Newspaper	1	0	0	1	1	0	1	1	0	56%
Conf. Proceedings	0	0	0	0	0	1	1	0	0	22%
Annual Reports	1	0	0	1	1	0	1	0	0	44%
Maps	0	0	0	0	1	1	1	0	0	33%
Monographs	0	0	0	0	0	0	1	0	0	11%
Patent	1	0	0	0	1	0	1	0	1	44%
Standards	0	0	0	0	1	1	1	0	1	44%
Manuscript	0	0	0	1	0	0	0	0	0	11%
Total (14)	9	0	5	8	8	6	13	6	5	

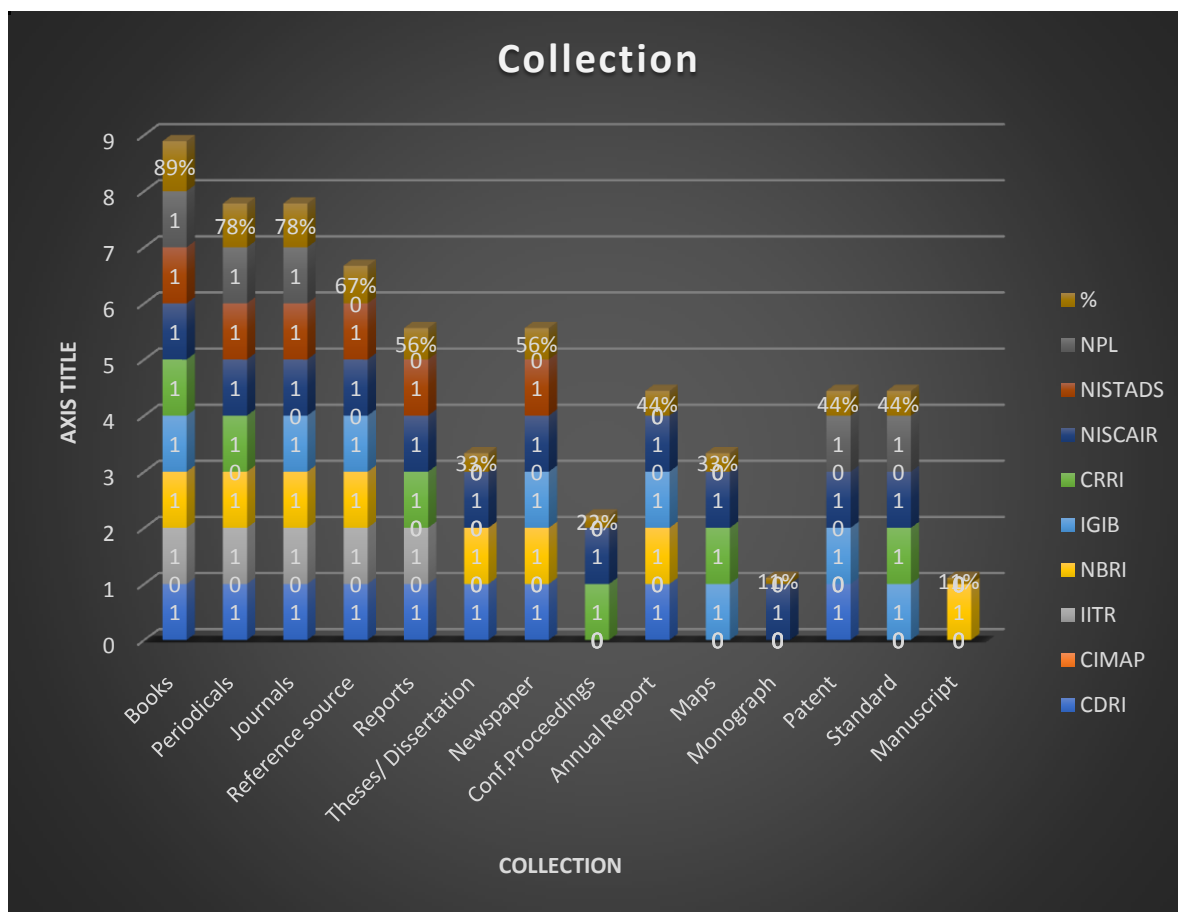


Figure 2

From table 3 and figure 2, we can see that Except CIMAP all library websites have mentioned about the collections of books.78% libraries provide periodicals and journals information also.67% libraries provide reference sources .56% of the library’s websites provide details of reports and newspaper.44% of the websites provide annual reports, patents and standards .33% of the library websites shows thesis/ dissertations and maps. Only 11% of the libraries provide details of manuscripts and monographs.

TABLE 4
LIBRARY SERVICES

LIBRARY SERVICES	CDRI	CIMAP	IITR	NBRI	IGIB	CRRI	NISCAIR	NISTADS	NPL	%
OPAC	1	0	0	1	1	1	1	1	1	78%
CD ROM	0	0	1	0	1	1	1	0	0	44%
Document Delivery Service	1	0	0	1	1	0	1	0	1	55%
Inter Library Loan Service	0	0	0	1	1	1	1	0	1	55%
Plagiarism Check	1	0	0	1	0	0	0	0	1	33%
Reprographic Service	1	0	0	1	1	0	1	0	1	55%
Abstracting Service	0	0	1	0	0	0	1	0	0	22%
Current Awareness Service	0	0	1	0	0	1	1	0	0	33%
Bibliographic Services	0	0	0	1	1	1	1	0	0	44%
Circulation Service	1	0	0	1	0	1	1	0	0	44%
Reference Service	0	0	0	0	1	1	1	0	1	44%
Bibliometric and Scientometric Service	1	0	0	0	0	0	1	0	0	22%
E-mail	1	0	0	1	1	0	1	0	0	44%
Total (13)	7	0	3	8	8	7	12	1	6	

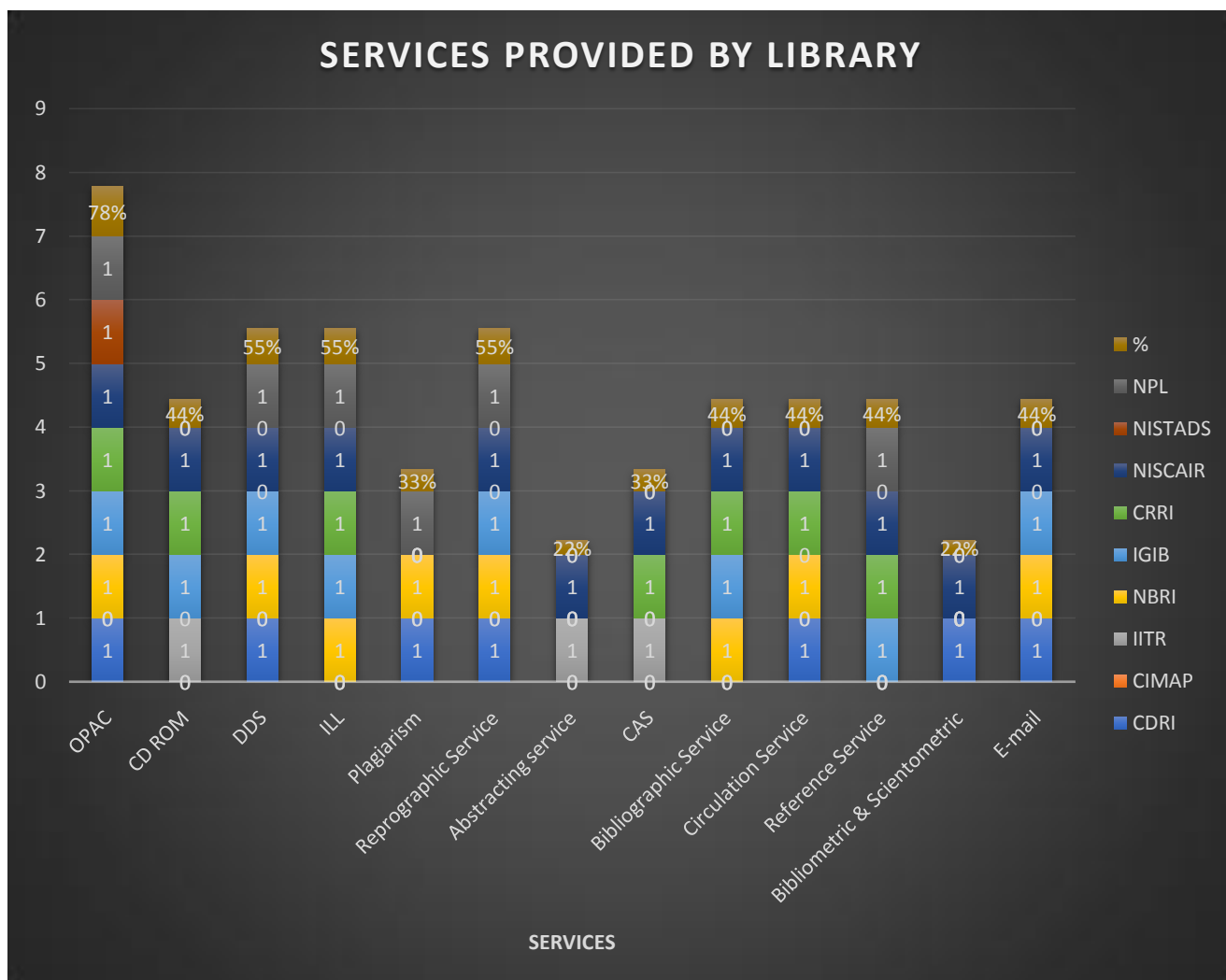


Figure 3

Table 4 and figure 3 show that except CIMAP and IITR all libraries provide OPAC services. 55% of the libraries websites show that KRC provides Document Delivery Services, Inter Library Loan and reprographic services to its users. 44% of the KRC provides services of CD-ROM, bibliographic services, Circulation Service, Reference Service and E-mail service. 33% of the libraries provide plagiarism checker and Current Awareness Services to its users and only 22% of the libraries provide abstracting and bibliometric and scientometric service.

TABLE 5

INFORMATION ON E- RESOURCES

E- RESOURCES	CDRI	CIMAP	IITR	NBRI	IGIB	CRRI	NISCAIR	NISTADS	NPL	%
E-Books	1	0	0	1	1	1	1	0	0	55%
E-Journals	1	0	1	1	1	1	1	1	1	89%
Online Database	1	0	1	1	1	1	1	0	1	78%
CD Rom Database	0	0	1	0	1	1	1	0	0	44%
Institutional Repository	1	0	0	1	1	0	1	0	1	55%
Total (5)	4	0	3	4	5	4	5	1	3	

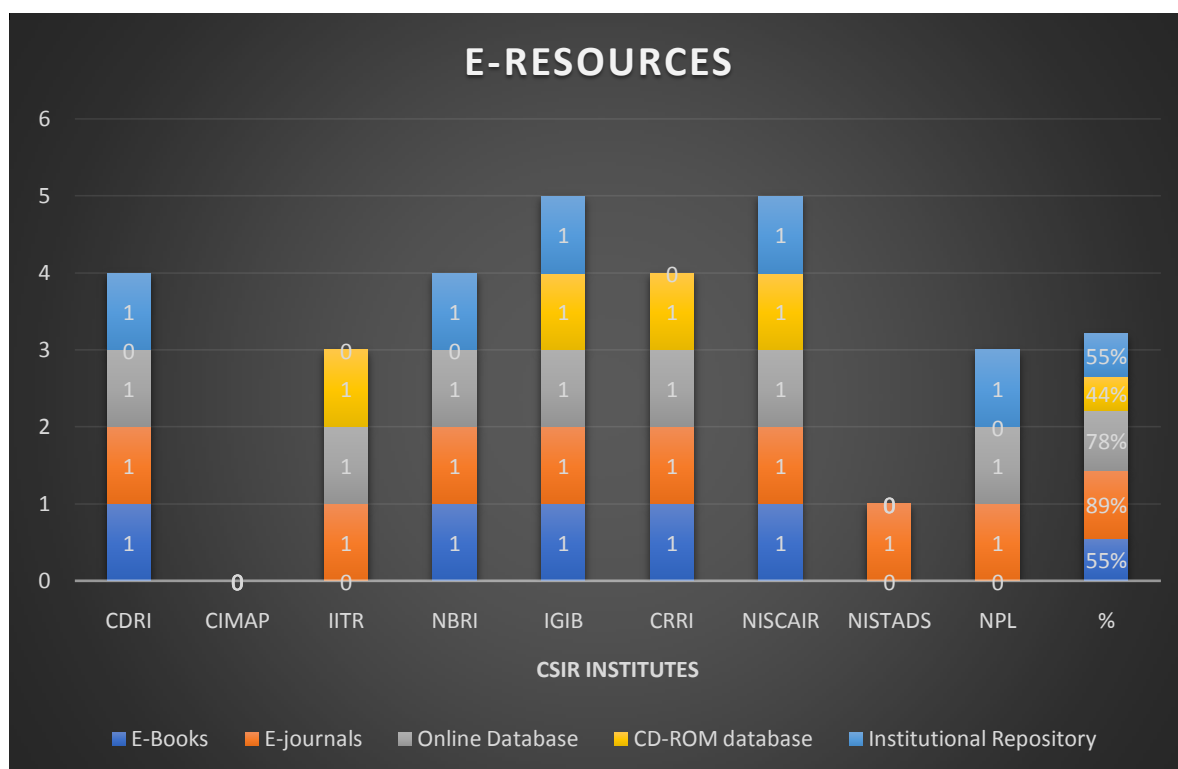


Figure 4

Table 5 shows that 89% of libraries subscribes E-journals. Except 2 libraries websites, CIMAP AND NISTADS, all libraries provide online database .55% of the KRC websites provide details of E-books and Institutional repository. 44% of the libraries have CD ROM Database.

TABLE 6
FEATURES OF CSIR INSTITUTES LIBRARY WEBSITE

FEATURES	CDRI	CIMAP	IITR	NBRI	IGIB	CRRRI	NISCAIR	NISTADS	NPL	%
Registration/ Login	0	0	0	0	1	0	1	0	0	22%
Last Updated	0	0	0	0	0	1	0	0	0	11%
Download	0	0	0	0	1	0	1	0	0	22%
Feedback	0	0	0	0	0	0	1	0	0	11%
Social Networking	0	0	0	0	0	0	1	0	0	11%
TOTAL (5)	0	0	0	0	2	1	4	0	0	

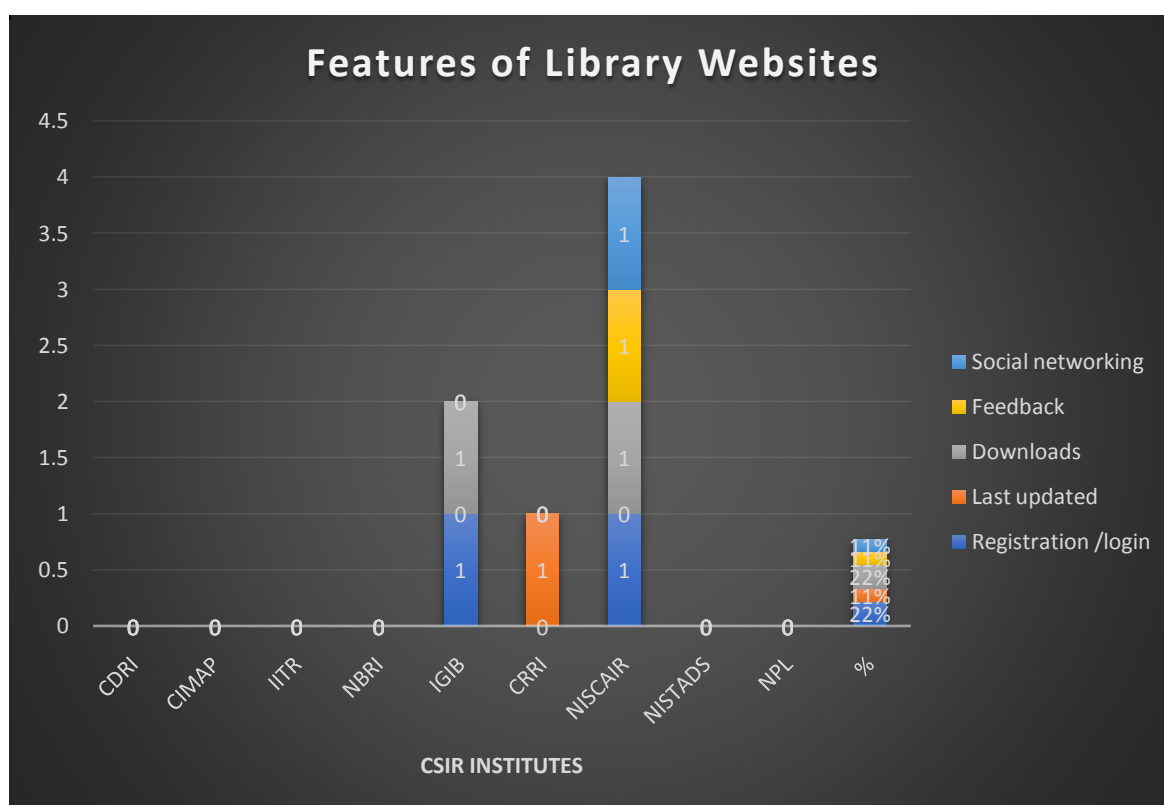


Figure 5

Table 6 presents that 22% libraries websites have a registration/ Login and download option. Only 11 % of the libraries have last updated, feedback and social networking option on their library websites. Some or the other features are missing in each and every library website.

Table 7

WEB 2.0 TOOLS

CSIR INSTITUTES										
WEB 2.0 TOOLS	CDRI	CIMAP	IITR	NBRI	IGIB	CRRI	NISCAIR	NISTADS	NPL	%
Google+	0	0	0	0	0	0	0	0	0	0
RSS feeds	0	0	0	0	0	0	0	0	0	0
Blogs	0	0	0	0	0	0	0	0	0	0
Instagram	0	0	0	0	0	0	0	0	0	0
Telegram	0	0	0	0	0	0	0	0	0	0
Total (5)	0	0	0	0	0	0	0	0	0	0

Table 7 shows that there is no involvement of web 2.0 tools mentioned on the list.

TABLE 8

INTERACTIVE USER INTERFACE

USER INTERFAC E	CDR I	CIMAP	IITR	NBR I	IGIB	CRR I	NISCAIR	NISTADS	N P L	%
Font size	0	0	1	1	0	1	0	1	0	44%
Date & Time	0	0	0	1	0	0	0	0	1	22%
Colour Skin	0	0	1	1	0	0	0	1	0	33%
Language option	0	0	1	0	1	1	1	1	1	67%
Total (4)	0	0	3	3	1	2	1	3	2	

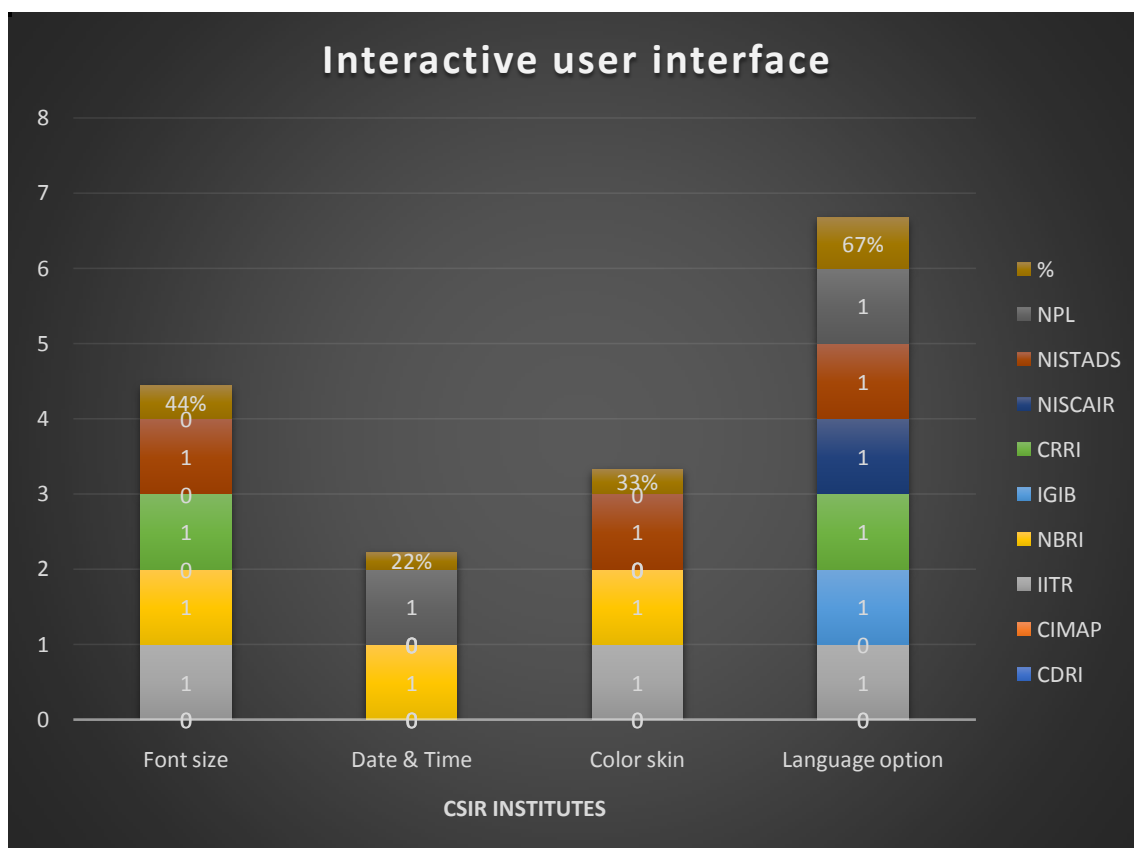


Figure 6

Table 8 and figure 6 present that only 4 libraries websites that is IITR, NBRI, CRR I and NISTADS has adapted font size. 67% of the library's websites have a language changing option in Hindi and English. 33% of the libraries has provided option to choose color skin for interactive accessibility Only 22% of the libraries websites have mentioned Date & time and Screen reader access option

TABLE 9

CHANGES AND UPDATION ON LIBRARY WEBSITES DURING COVID-19

Changes done during covid 19	CDR I	CIMAP	IITR	NBRI	IGIB	CRR I	NISCAIR	NISTADS	NPL	%
Library hours during covid-19	0	0	0	0	1	0	0	0	0	11%
Safety Protocols	0	0	0	0	1	0	0	0	0	11%
Information for visitors	0	0	0	0	1	0	0	0	0	11%
Library services during covid 19	0	0	0	0	1	0	0	0	0	11%
Library resources during covid19	0	0	0	0	1	0	0	0	0	11%
Total (5)	0	0	0	0	5	0	0	0	0	

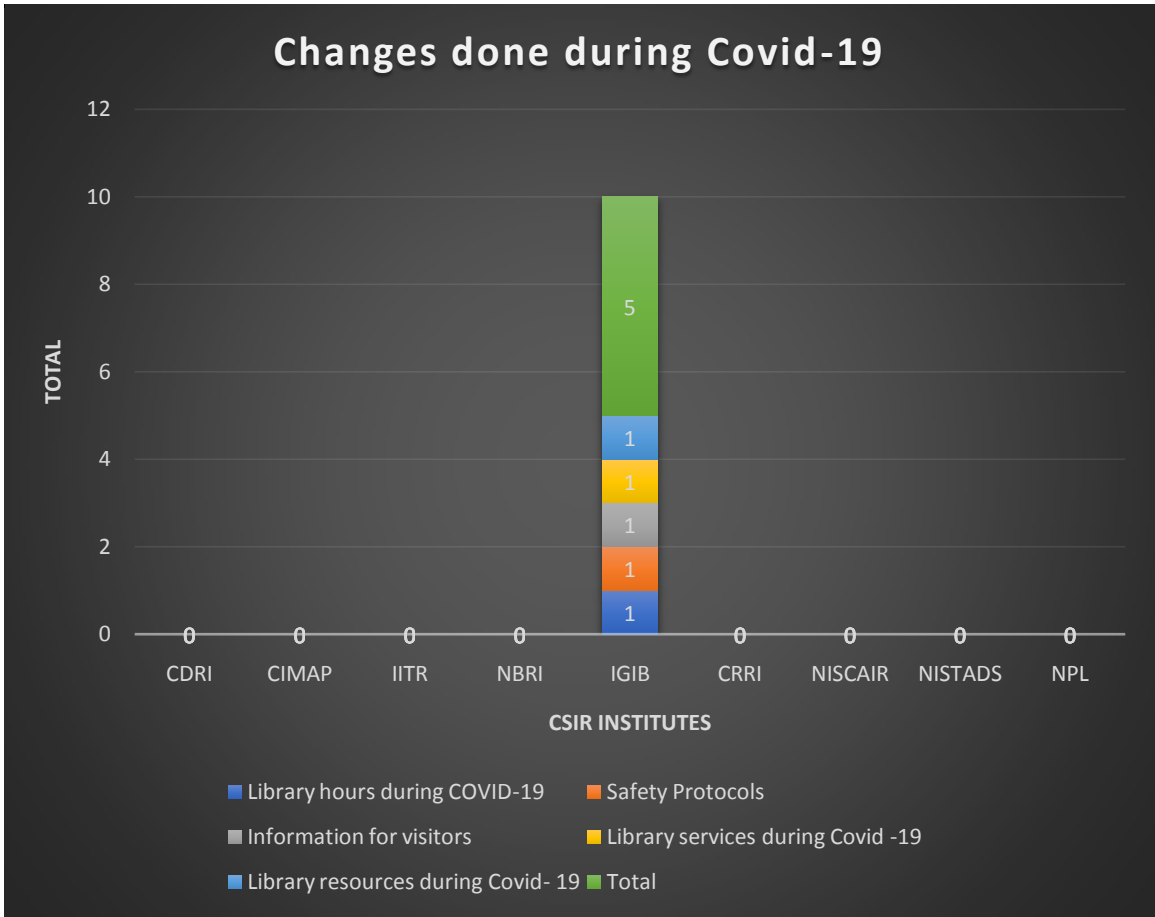


Figure 7

Table 9: shows that only one library that is IGIB library websites has given information regarding COVID19. None of the other library websites has given information regarding COVID 19 pandemic.

TABLE 10**COMPARATIVE CHECKLIST OF CSIR LIBRARIES WEBSITES**

	CDRI	CIMAP	IITR	NBRI	IGIB	CRRRI	NISCAIR	NISTADS	NPL
General Inf. About libraries (11)	6	0	4	5	6	4	11	2	4
Library collection (14)	9	0	5	8	8	6	13	6	5
Library Services (13)	7	0	3	8	8	7	12	1	6
Inf. On e- resources (5)	4	0	3	4	5	4	5	1	3
Features of CSIR Institutes library websites (5)	0	0	0	0	2	1	4	0	0
Interactive user interface (4)	0	0	3	3	1	2	1	3	2
Web 2.0 Tools(5)	0	0	0	0	0	0	0	0	0
Changes during COVID19 (5)	0	0	0	0	5	0	0	0	0
(62)	26	0	18	29	35	24	46	13	20

Comparative Checklist of Library Websites of CSIR Institutions

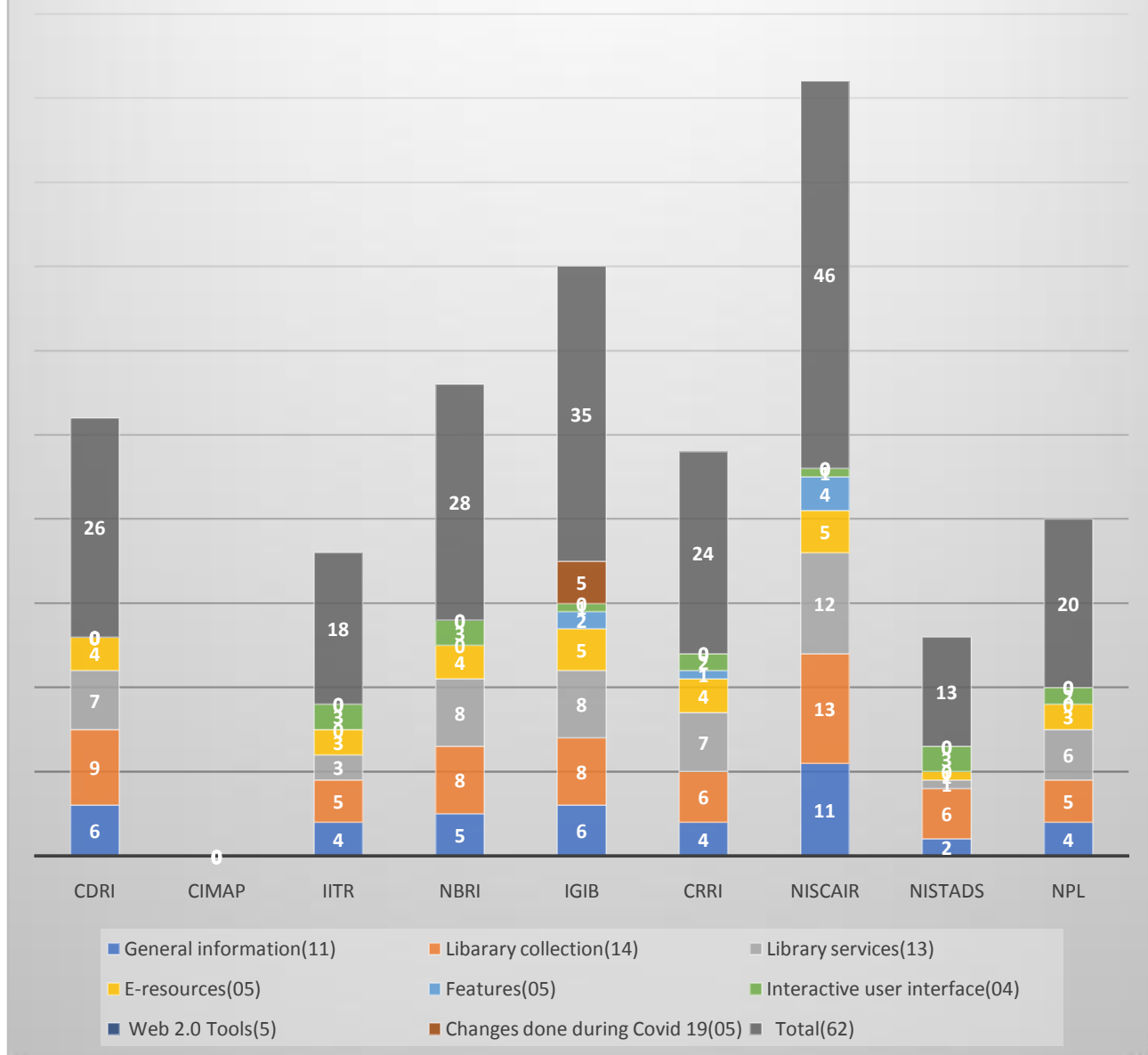


Figure 8

Table 10 shows that library websites of CSIR-NISCAIR have obtained the highest score that is 46 out of 62. Second highest score is gone to library website of CSIR-IGIB obtaining 35 score and third is library website of CSIR-NBRI. If we see from downwards library websites of CIMAP is worst in providing all the above-mentioned information.

CHAPTER 5
FINDINGS, CONCLUSION AND
SUGGESTION

CHAPTER 5 FINDINGS, CONCLUSION AND SUGGESTION

The whole study is divided into five chapters the first chapter contain the introduction, definitions, objectives, scope, research methodology and Limitations. The second chapter deals with the review of literature available online. The third chapter deals with the profile of CSIR-Institutes of U.P. and Delhi. The fourth chapter contains data analysis and Interpretation and the last which is fifth chapter of the study contain findings of the study and recommendation for further research.

5.1 FINDINGS:

There is total 9 CSIR institutes in Lucknow and Delhi. All institutes were established in different years. The first institute established under CSIR was National physical laboratory, New Delhi which was established in 1947. Except CSIR-CIMAP knowledge Resource Centre each Institute of CSIR provide library web link to access the services of library.

5.1.1 GENERAL INFORMATION

- The study finds that 89% of the libraries has given introduction about libraries on their library websites.
- 78% institutions have mention services.
- 67% libraries provide membership.
- Less than 50% of library websites provide objectives of the library, library hours, Photos/ gallery, mission/vision, floor plan, and visitor.
- Only library websites of NISCAIR have scored 11 out of 11 under this category.

5.1.2 COLLECTION

- 89% of library websites have a good collection of books.
- 78% of library websites have a collection of periodicals and journals.
- 56% of library websites provides reports & newspapers.
- 44% of library websites provides annual reports and standards.
- 33% websites provide theses/dissertation and maps.
- 11% of institution provides collection of manuscript and monographs.

5.1.3 SERVICES

- Except CIMAP and IITR all libraries provide OPAC services.
- 55% of the libraries websites shows that KRC provides Document Delivery Services, Inter Library Loan and reprographic services to its users.
- 44% of the KRC provides services of CD-ROM, bibliographic services, Circulation Service, Reference Service and E-mail service.
- 33% of the libraries provide plagiarism checker and Current Awareness Services to its users.
- 22% of the libraries provide abstracting and bibliometric and scientometric service.

5.1.4 E-RESOURCES

- 89% of libraries subscribe E-journals.
- Except 2 libraries websites, CIMAP AND NISTADS all libraries provide online database.
- 55% of the KRC websites provide E-books and Institutional repository.
- 44% of the libraries have CD ROM Database.

5.1.5 FEATURES OF LIBRARY WEBSITES

- 22% libraries websites have a registration/ Login and download option.
- Only 11 % of the libraries have last updated, feedback and social networking option on their library websites. Some or the other features are missing in each and every library website.

5.1.6 INTERACTIVE USER INTERFACE

- Only 4 libraries websites that is IITR, NBRI, CRRRI and NISTADS has adopted font size.
- 67% of the library's websites have a language changing option in Hindi and English.
- 33% of the libraries has provided to choose color skin for interactive accessibility.

- Only 22% of the libraries websites has mention Date & time and Screen reader access option.

5.1.7 CHANGES AND UPDATIONON WEBSITES DURING COVID 19

- Only one library that is IGIB library websites has given information regarding COVID19. None of the other library websites have given information regarding COVID 19 pandemic on their websites.

5.1.8 COMPARATIVE CHECKLIST OF CSIR INSTITUTES

- CSIR-NISCAIR obtained highest score 46 out of 62.
- CSIR- IGIB obtained second highest score 35 out of 65.
- CSIR-NBRI obtained third rank getting 28 score out of 62.
- CSIR-CDRI obtained fourth rank getting 26 score out of 62.
- CSIR-CRRI obtained fifth rank getting 24 score out of 62.
- CSIR-NPL obtained sixth rank getting 20 score out of 62.
- CSIR-IITR obtained seventh rank getting 18 score out of 62.
- CSIR-NISTADS obtained eight rank getting score 13 out of 62.
- CSIR- CIMAP obtained 9th position having very less information.

5.2 CONCLUSION:

The researcher in the present research has design checklist which was based on the earlier study to check the content available on the library websites of CSIR- Institutes.

This study provides an information, services, collection, e-resources available on 9 library websites. It is found that content and information available on each library websites varies from each other.

Day by day it is becoming important to evaluate the library website to check the web usability and content. Though library is the replicate of any organisation so it is essential for any institution to have independent library websites which provide all features of library. Library websites also acts as a knowledge center of any institute where everything can be browsed via library website.

It is necessary to make library website effective dynamic and effective user's survey and feedback techniques may be carried out and comparison of contents and information may be done time to time from fully dynamic library websites of other reputable institution.

As CSIR institutes are known for its research and development in science and technology so for development and research work, knowledge resource centre plays an important role. It is observed that websites of CSIR institutes are just good in condition. Every CSIR Institutes has a library web link except CIMAP, every institute has provided information about libraries. Utilization of Web 2.0 has not been observed which is necessary for development of any library. Changes done during pandemic Covid-19 has also not been seen in library websites. Libraries are not updated regularly. So, this study will help us as roadmap in developing websites of knowledge resource centre.

5.3 TESTING OF HYPOTHESIS:

H₁: Basic information are available on library websites.

Table 2 and Fig. 1 shows that most of the library websites has mentioned general information on their library websites, hence this is proved and accepted.

H₂: CSIR institutions has separate library home pages.

From the table 1 it can be seen that except CSIR-CIMAP every institute has its library home pages. Hence above hypothesis is proved and accepted.

H₃: Library websites are updated regularly.

Table 6 and fig.5 shows that websites are not updated on regular basis. Hence this hypothesis is not proved and rejected.

5.4 RECOMMENDATION AND SUGGESTION OF THE STUDY:

- Standard guidelines for library websites should be prepared by National Library of India
- Library websites should be more attractive and informative so that user can easily access required information
- Checklist should be used as standard guidelines for improving websites.
- Separate corner for e- resources should be given

- Clear link of library websites should be given in CSIR Institutes home page in a separate corner.
- Library should take advantage of web 2.0 such as Blogs, RSS feed, telegram to promote their libraries
- Each and every content of library should have separate corner on library websites.
- All the form should be online as it saves the time of user.
- Library should be updated on regular basis.
- Librarian should assist the web developers while designing the library websites.
- Background colour and language choosing option should also be provided by institute.

5.5 FURTHER AREAS OF RESEARCH:

The present study was carried out on Content Analysis of CSIR-Institutes of Uttar Pradesh and Delhi, India. According to the outcomes, the present study can be extended in the following areas:

1. Content Analysis of Library websites of CSIR Institutes of India.
2. Role of LIS professionals in helping the website developer to make attractive websites with regularly updated content.
3. Content Analysis of Library Websites of Disabled Institutes.
4. Content Analysis of ICAR Library websites.

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APPENDIX

APPENDIX-I

Checklist

A. Qualitative evaluation

The qualitative analysis of the checklist does not give any numerical value. Therefore these values are not considered for in ranking for evaluation of library websites.

Table 1: List of CSIR- Institutes

- a) Institute Name
- b) Year
- c) State
- d) Website
- e) Library Web Link

B. Quantitative Evaluation

The quantitative analysis of checklist contains various questions to evaluate the websites based on certain criteria –

Table 2: General Information about libraries

- 1. Introduction
- 2. Objectives
- 3. Mission/ Vision
- 4. Library Hours
- 5. Library Rules
- 6. Photos/ Gallery
- 7. Membership
- 8. Services
- 9. Library Staff
- 10. Floor Plan

11. Visitor

Table 3: Library Collection

12. Books

13. Periodicals

14. Journals

15. Reference Source

16. Reports

17. Theses/ Dissertation

18. Newspaper

19. Conference Proceedings

20. Annual Reports

21. Maps

22. Monographs

23. Patent

24. Standards

25. Manuscripts

Table 4: Library Services

26. OPAC

27. CD ROM

28. Document Delivery Service

29. Inter Library Loan Service

30. Plagiarism checker

31. Reprographic Service

32. Abstracting Service

33. Current Awareness Service

34. Bibliographic Service

35. Circulation Service

36. Reference Service

37. Bibliometric Service & Scientometric Service

38. E-mail Service

Table 5: Information on e-resources

- 39. E- Books
- 40. E-Journals
- 41. Online Database
- 42. CD ROM Database
- 43. Institutional Repository

Table 6: Features of CSIR Institutes Library Websites

- 44. Registration/ Login
- 45. Last Updated
- 46. Download
- 47. Feedback
- 48. Social Networking

Table 8: Web 2.0 Tools

- 49. Google +
- 50. RSS feed
- 51. Blogs
- 52. Instagram
- 53. Telegram

Table 9: Interactive User Interface

- 54. Font Size
- 55. Date & Time
- 56. Colour skin
- 57. Language Option

Table 10: Changes done on library websites during COVID-19

- 58. Library hours during covid-19
- 59. Safety Protocols
- 60. Information for visitors

61. Library services during covid-19

62. Library resources during covid-19

Table 11: Comparative Checklist of CSIR Libraries Websites

- General Information about libraries
- Library Collection
- Library Services
- Information on e-resources
- Features of CSIR Institutes Library Websites
- Interactive User Interface
- Changes done on library websites during COVID-19

APPENDIX-II

LIST OF INSTITUTIONS TAKEN FOR THE STUDY

S.I	INSTITUTE NAME	LIBRARY WEB LINK
1	CSIR-CENTRAL DRUG RESEARCH INSTITUTE	https://cdri.res.in/KRC.aspx Knowledge Resource Centre KRC(Library)
2	CSIR- CENTRAL INSTITUTE OF MEDICINAL & AROMATIC PLANTS	NA
3	CSIR- INDIAN INSTITUTE OF TOXICOLOGY RESEARCH	litindia.org/En/library toxicology
4	CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE	https://nbri.res.in/r-d-areas/s-t-support/knowledge-resource-centre-library Knowledge Resource Center (Library)
5	CSIR-INSTITUTE OF GENOMICS AND INTEGRATIVE BIOLOGY	https://www.csir.res.in/knowledge -resource-center
6	CSIR- CENTRAL ROAD RESEARCH INSTITUTE	https://www.crridom.gov.in/content/documentation-library-services
7	CSIR- NATIONAL INSTITUTE OF SCIENCE COMMUNICATION AND INFORMATION	www.niscair.res.in
8	CSIR-NATIONAL INSTITUTE OF SCIENCE, TECHNOLOGY AND DEVELOPMENT STUDIES	https://www.nistads.res.in/index.php/node/60
9	CSIR-NATIONAL PHYSICAL LABORATORY	https://www.nplindia.in/about-krc