

**STUDY OF WEB BASED INFORMATION SERVICES OF PUBLIC
LIBRARIES OF INDIA**

DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENT OF THE GOA UNIVERSITY FOR THE DEGREE OF
MASTER OF LIBRARY AND INFORMATION SCIENCE (MLISc)

BY

PRANITA PRAKASH NAIK

ENROLMENT NUMBER:

22P034009

UNDER THE SUPERVISION OF

DR. SHAMIN PEREIRA



*Presented for
Viva. Voce on
28/4/2023*

by

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SCIENCE**

**D. D. KOSAMBI SCHOOL OF SOCIAL SCIENCES AND BEHAVIOURAL
STUDIES**

LIBRARY AND INFORMATION SCIENCE PROGRAMME
GOA UNIVERSITY, TALEIGAO PLATEAU, GOA

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**D. D. Kosambi School of Social Sciences
& Behavioural Studies
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CERTIFICATE

This is to certify that dissertation entitled “**Study of Web Based Information Services of Public Libraries of India**” submitted by **Miss Pranita Prakash Naik** in partial fulfilment of the requirement of the Degree of Master of library and information Science in the Discipline Master of Library And Information Science at the, D.D Kosambi School Of Social Sciences And Behavioural Studies Goa University is her own work carried out under my guidance and worthy of examination.

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Assistant Professor
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Place: Goa University

DECLARATION

I state that the present dissertation “**Study of Web Based Information Services of Public Libraries of India**” is my original contribution and the same has not been submitted on any occasion for any other degree or diploma of this university or other university/ institute. To the best of my knowledge, the present study is the first comprehensive work of its kind from the area mentioned. The literature related to the problems investigation has been cited.

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CHAPTER 1

INTRODUCTION

1.1: INTRODUCTION

Some people view a library as a location to read books, get the most recent news from current newspapers, conduct research, or access or share information in answer to a specific need. A library must continually update its services because it plays a significant part in forming knowledge. The majority of users choose to utilize the library digitally rather than physically visiting it.

The role of the library has shifted from providing traditional sources of information to providing web-based information as a result of the rapid advancement in technology. Information is now accessible with just a click. The user's personal devices can be used to access the information. Many library services use web-based services, including the institutional repository, library blog, alerting systems, and online catalogue service.

Utilizing these services is quite advantageous and useful because they simplify getting information, offer access to various users, and are always available. The majority of libraries currently offer these services via the library portal. All of these library services can be accessed through a library portal.

The development of the Internet, particularly the World Wide Web, is leading to a revolution in libraries and information centers and is emerging as the new method of delivering information resources and services. Because information resources and services in this web-based environment may be accessed and provided as needed, library services are no longer restricted to the four walls of a building. Still, they are instead incorporated into local, regional, national, and international networks. Web services in libraries are extremely helpful for both users and librarians in providing their services.

The library website is becoming more and more significant as a service provider in its own right and as a key tool for marketing other library items as more and more services are moving online.

1.2: DEFINITION

According to Ranganathan's Law of Library Science, the library should be viewed as a living, evolving organism. As a result, the adoption of Web 2.0 technologies can be seen as a logical step in the evolution of print-based libraries into their more advanced virtual counterparts. (Barner, 2011)

1.3: OBJECTIVES

- To examine the web based library services in selected public libraries in India.
- To know what type of e-resources available on their websites.
- To identify whether the library websites are updated regularly.

1.4: SCOPE

- The study has been restricted to web based information services, focusing on specific categories of their website.
- The study is restricted to only public libraries of India.
- The study aims to investigate how libraries use their website to provide proper guidance and giving information to users through their websites.

1.5: HYPOTHESIS

- The public library websites are not user friendly.
- The public library websites are not updated regularly.

1.6: RESEARCH METHODOLOGY

- The analysis is carried out on the websites of the public libraries of India looking at the main option they provide to users and researchers.
- Search has been done to determine whether states have public library website that are operational and in English language.
- First number of states are identified which have a designated public library and among them number of public libraries were selected which have a website.
- Each of the website are checked for its functionality.
- The data is analyzed using online information available on these websites.
- The results of website analysis is further represented using different methods.

1.7: LIMITATIONS

- Only public libraries of India are studied.
- Only the information provided on websites of the public libraries are being analysis for data collection.

1.8: FINDINGS

- A majority of library websites are discovered to be open to everyone and reachable from anywhere. Only 2 of them—out of the entire list—restrict access to users who are not library members. Library's website requires a username and password for access.
- It is discovered that users can get in touch with librarians by email, chat or query box, or by calling the number supplied. It turns out that 42% of websites offer

email addresses, 39% of websites offer phone numbers, and 13% of library websites offer question forms so that customers can submit their inquiries online

- Majority of library websites offer a virtual tour of their library that details each floor. Some websites provide photo galleries for libraries where they showcase their collection as well as pictures from events and programmes. The virtual tour feature is quite helpful because it serves as an orientation service to introduce new users to the library and encourage their use.
- The majority of libraries don't notify their users about the activities and events they plan for them. There are just six library websites that provided user-friendly activities and information about a variety of programs, including book displays, educational talks, career counseling, National Youth Day celebrations, etc.
- The library's website has a sizeable section dedicated to OPAC services for users. Users can access the library's books, magazines, and other materials from anywhere thanks to the OPAC. OPAC saves users time by making it simpler for them to keep track of the materials that are either in the library or out on loan.
- It is found that there is only one library that provides document delivery and interlibrary loan services online. The other 15 don't have such possibilities.
- This indicates that nine of the sixteen library websites do not provide services for persons with disabilities, which could cause them to feel excluded. Only seven library websites offer particular online features, such brightness control, font size, audio readers, braille settings, and movies with captions that let impaired individuals use the website and, as a result, are regarded as a part of the library.
- The majority of the library website have added extra links to its pages, including links to websites for other libraries, government websites, websites for Aadhaar cards, and websites linked to election cards.
- They merely provide a brief excerpt from the article's abstract. While the websites of two libraries allow visitors to view the full texts of the e-resources at anytime like eBooks, e-journals, databases, online gazettes, and digital archives etc.
- A study discovered that 14 of 16 library websites did not offer full-text access to their electronic resources. They merely present a small part of the abstract. In

comparison, the two libraries' websites allow people to access the full text of the e-resources, which they can use whenever they choose.

- It is discovered that a password and login are required to access the library's collection. However, just two library websites offer complete access to their digital collection to consumers. Because they don't place any restrictions on the user, you can also download the material or article for later use.
- While utilizing the webpages for 4 of the libraries works smoothly. These websites have various features that are either completely missing or have issues compared to 12 other websites. Some websites associated with libraries send the user to another website with nothing to do with libraries. It took some time for the homepage of several websites to load.
- It shows that 12 out of 16 library websites do not provide the most recent update time. Only four websites have a scheduled time for updates; the time and date are listed below each website's description. Additionally, they offer daily updates on news, tests, and alerts from the library, and other items. Most websites update once a week, once a month, or occasionally.
- It reveals that, despite the fact that the majority of websites do not publish their daily footfall, 7 out of 16 library websites do offer a daily usage ratio at a certain time. It also provides a clear image of how many people use the library's website.

1.9: CHAPTERIZATION

Chapter 1 – Introduction

Chapter 2 – Review of literature

Chapter 3 – Explanation of concepts

Chapter 4 – Web based services –national & international level

Chapter 5 – Data analysis and interpretation

Chapter 6 – Findings, suggestions and conclusion

CHAPTER 2

LITERATURE REVIEW

1. “Web-Based Library and Information Services in the Libraries of the Institutions of National Importance in India: A Study with Reference to Karnataka, Kerala and Tamil Nadu”. This article investigates how libraries in Institutions of National Importance in India offer web access to their collections and other services with a focus on the usage of web-based library services in India. The creation and use of new technology, particularly Internet and web technologies, has fundamentally altered the way academic libraries currently provide library and information services. The Internet is a never-ending source of innning these studies, several web-based library services offered by the chosen libraries are highlighted, along with how they were used. As the emergence of new technology web 2.O And 3.O have an important role in present day library. This helps the people to communicate, create and share the resource. (Ali & Shah, 2018)

2. “Web Based Library Services” The paper gives introduction of the web and related technologies, particularly the World Wide Web, has given consumers access to a completely new media. The library's services were static in the past. The user had to physically visit the library to access the resources, but thanks to the rapid development of technology, library services are now dynamic. The library is now accessible to users from anywhere at any time. In order to satisfy their users with the appropriate information at the appropriate moment, the library's primary goal is to offer high-quality information services. A trend is online library services. (Gavit B. K., 2019)

3. “The Mission and Role of the Library Web Site”. In this paper author says that Websites for public libraries have a variety of uses. A typical public library may aim to offer free and unrestricted access to information to all local inhabitants, and

this may be reflected on the library website through links to community information sources, links to job listings, access to the library's online catalogue, etc. Although a public library may wish to provide unrestricted access to its online resources, licensing constraints on some electronic databases may prevent this from happening. In some circumstances, password security may be required. (Stover, 1997)

4. "The World Wide Web as an Information Resource". Author say about the problems librarians facing in issue of locating and utilizing accurate and trustworthy information as the World Wide Web grows in popularity as a medium for the dissemination of digitized material. Internet consumers with little to no technological knowledge can now access its contents thanks to browsers like Netscape and Microsoft Explorer. As a result, the idea of the Internet as a virtual library that is accessible with a mouse click is growing in popularity, especially for libraries with modest holdings and scarce resources. However, it turns out that using the internet to acquire correct and trustworthy information is a challenging task. Putting aside technical issues, attempting to exert intellectual control and achieve precise recall over a constantly growing corpus of text, image, and sound can soon become challenging. Effective use of the online necessitates the use of the right technology, software, and search techniques, in addition to the fact that websites are notoriously unreliable and frequently lack the authority that we associate with published works. (Kibbee, 2006)

5. "Web-Based Services Expected from Libraries". Putting aside technical issues, attempting to exert intellectual control and achieve precise recall over a constantly growing corpus of text, image, and sound can soon become challenging. Effective use of the online necessitates the use of the right technology, software, and search techniques, in addition to the fact that websites are notoriously unreliable and

frequently lack the authority that we associate with published works. (Kanamadi & Kumbar, 2006)

6. “A Study of Web Based Information Sources and Services”. The author says that Technology today is a major factor in every industry, including healthcare, business, defense, and education. Information technology has had a significant impact on the nature of libraries and its activities because modern libraries are undergoing significant change as a result of these advancements, not only in terms of their appearance but also in terms of the services they offer and the methods and tools/techniques they use to gather, develop, process, and disseminate information. Libraries now offer a variety of internet-based online services employing web-based technologies to its consumers as a result of the advancement of digital instruments. (Kimi & Sharma, 2019)

7. “Web-Based Library Services”. The article talks about an unparalleled medium for information delivery with better speed and economy has emerged with the World Wide Web (WWW) and Internet as new media of information storage and delivery. The Internet and online technology have altered how information is kept, found, and shared in libraries. The increased accessibility to distant library collections, which more libraries are moving towards offering their services in a digital environment, makes using electronic information resources more enticing and realistic. (Bhatnagar, 2005)

8. The author says that the internet is a potent instrument for information sharing and global communication. The use of the internet to gather information for teaching, learning, and research activities has significantly increased. Information and communication technology (ICT) use in libraries has completely revolutionized how people access, process, and retrieve information from libraries and information centers. In order to meet user needs, libraries today are increasingly interested in

sharing resources with other libraries. Libraries must plan, create, and assess how best to meet users' information demands. The library staff has received thorough training in the most recent technology so they can offer the user community web-based services and resources. Because information needs of users are constantly changing. (Ravichandran, 2012)

9. “Use of Web-Based Library Services in Mysore City Engineering Colleges in Karnataka, India: A Study” the author says that Because of the development and usage of new technology, particularly the Internet and online technologies, the conventional methods of providing library and information services have undergone significant change recently. Users' needs and expectations have also evolved significantly. In light of the current situation, an increasing number of libraries worldwide are investigating and providing novel web-based library services. (Shivakumaraswamy, 2019)

10. “Importance of Web-Based Library Services: An Indian Scenario” The internet is becoming a more vital resource in many areas of life, including jobs, government, business, healthcare, and more. Web 2.0 services encourage user interaction and feedback, fostering the development of communities around the library. Libraries and the people who use their services are challenged by the expansion of web-accessible gadgets. In order to effectively handle the additional features, interactions, and opportunities provided by Web 2.0, technology developers must take into account new and developing technologies. In order to effectively handle the additional features, interactions, and opportunities provided by Web 2.0, technology developers must take into account new and developing technologies. (Pathak & Sahu, 2010)

11. The term "Information Era" has been coined to describe the contemporary era. In order to keep up with the changing environment, libraries and computers may help

spread knowledge more effectively. The library will soon begin providing information via the internet, web pages, online services, and e-mail. Libraries can offer a wide range of services to its patrons online. The internet has the capacity to store a lot of information and to quickly and easily retrieve it. The current papers analyze the characteristics of the internet and outline the internet-based services that academic libraries can provide. A resource with many features is the internet. Its most notable characteristics are a large amount of information and several search options. These Features make the Internet a very beneficial and significant resource for libraries. (Kumbhar & Bidve, 2016)

12. Author says that the center of any type of library is its services. A trend is web-based library services. Libraries are making the most of their access to the internet and the online. They change their method of service delivery in an impressive way. The fact that users may access library services online makes them very happy. By not receiving the information, they can avoid wasting their time and being harassed. Western nations have advanced significantly more than developing and poor nations. In contrast to academic libraries, this innovative service delivery method is quite effective in special libraries. In this regard, our nation is really behind. Even if we think a lot, it is very difficult to put our ideas into practice. There is a national policy in place, but implementation is not planned. (Hatua, 2009)

13. The development of the Internet, a technology that connects a computer with millions of other computers in the network, is one of the most important developments in the information and communication sector. People from all walks of life are taking advantage of the internet's services as one of the most significant forms of communication today, such as by creating and managing websites for libraries. The only restriction on the breadth is what library professionals may imagine. In order to take advantage of the much-discussed internet technology in the context of libraries, today's professionals only need to have a thorough

understanding of how the concept of librarianship has changed and the psychological flexibility to see the internet and the WWW as opportunities. They also need to be prepared to address the challenges of information resource management and information infrastructure development. (Kumar, 2019)

14. In today's digital environment, we are attempting to learn everything through the use of internet technologies. Everywhere has affordable access to the internet. The majority of library resources will go to an online platform. Open source software, automation in acquisition, circulation, cataloguing, and referencing, as well as digitization of libraries' holdings, have the potential to free up librarians' time and library space for new projects. Since the majority of these services use open source software, most current libraries can afford the initial investment costs, which is why migration is happening quickly. Currently, librarians are referred to as knowledge keepers or information providers. The professionals most likely to advance and flourish in the 21st century are those that foresee and embrace change in a positive, imaginative, and intellectual way. (Baviskar, 2001)

15. The shift in thinking from Web 1.0 to Web 2.0 presents libraries with additional difficulties in attracting the attention of distant users who are active on social media. Millions of individuals utilize various Web 2.0 programmes in the form of social media worldwide. The use of social media as a communication tool. It is a broad phrase that refers to a wide variety of websites that allow users to communicate with other users. Social media gives you more opportunities to connect with your community, reach out to niche markets, and invite people to participate with your library. Libraries can interact with their audiences on social media and provide them the opportunity to take part in the creation of library products. (Khan & Bhatti, 2012)

16. Public libraries are aware of their responsibility to meet the information demands of all societal segments. The state and federal governments have taken steps to establish public libraries as significant information sources for people from all formal spheres of life. In order to provide public libraries with knowledge, the National Mission on Libraries, established by the Ministry of Culture, has made proposals for the growth of libraries and information centers. His ability of library users to access materials held by other public library system members but not locally available has significantly enhanced thanks to public library system interoperability. Area and state-wide interlibrary delivery services have expanded in response to the increase in interlibrary loan activity. Additionally, knowledge navigators rather than information collectors will make up the majority of tomorrow's information workers. (Prasad, 2016)
17. The rise in popularity of e-books is now assisting in changing Americans' reading habits, which have already been significantly impacted by the internet on how individuals access and obtain information. Public libraries are working to adapt their offerings in this shifting environment while still meeting the demands of users who prefer more conventional resources. (Zickuhr & Rainie, 2013)
18. The term "information and communication technologies" (ICT) refers to a broad range of technological resources and instruments used to produce, transmit, store, add value to, and manage information. Public libraries can play a significant part in closing the digital gap. With the exception of a few institutions in cities, the quality of infrastructure, collection, information technology utilization, manpower, etc. in public libraries in India is very low. Research, academic, and special libraries fared better than other libraries in all of these areas. High-speed connectivity, online access, accuracy, and superior service will all be made available to people thanks to computerization. The development of a network that can reach even the most isolated areas of the nation is crucial. (Ghosh, 2003)

19. The librarian was given new options as traditional library collections were converted to digital or virtual collections. The Internet, the Web environment, and related advanced tools have given librarians a new dynamic role to play and better mean than before to serve the new information-based society. For ages, librarians have served as information providers. They now have the chance to make advantage of cutting-edge equipment to give users faster, more thorough, more sophisticated service. On desktops, remote library catalogues are accessible, newsgroups and mailing lists offer a great way to quickly discuss shared concerns, and electronic mail enables librarians to identify and get in touch with people who might be able to help with the problems. Databases and reference sources can be searched via the Internet and World Wide Web. (Rao & Babu, 2001)

20. Prior to the Covid-19 epidemic, the majority of libraries had historically offered services to users in manual and paper format, while only a small number had chosen to offer digital collections. The inability of the majority of libraries to continue offering their users relevant and modern library services has, however, been exposed as a result of the lockdown that has been put on every sector, including the library. This regrettable circumstance has increased their need to develop new systems that will enable them to do their mission more effectively and visibly despite the Covid-19 lockdown. As a result, social media platforms including Facebook, WhatsApp, Twitter, Instagram, YouTube, Pinterest, Podcasts, Flickr, and blogs, as well as instant messaging and rich site summaries (RSS) have become popular in the library. (Friday, Chidozie, & Chukwuma, 2020)

21. The emergence of digital information resources in a dynamic format and modern information technology has compelled libraries to alter the services they offer. Many libraries are offering digital services as more and more information sources become accessible online. By making them accessible through telecommunication

networks so that users can access them whenever and wherever they want, these services seek to increase the variety of information resources that are readily available as well as the value of their content. (Xai, 2013)

22. The main goal of the current study is to demonstrate how libraries have become overemphasized as a result of the development of information and communication technology (ICT)-based products and services, and how their priorities have changed to focus on ICT, such as library automation, digital archives, library 2.0, and mobile library services. With the aid of this essay, the author has called readers' attention to ICT innovation and development and how it affects library services, leading to significant changes in the system used to administer libraries as a whole. The evolution of libraries from conventional to hybrid to automate to library 2.0 and mobile phone services has been facilitated by the growth and deployment of ICT. (Parvez, 2011)

23. We live in a world where information has no borders because knowledge is power. In today's information age, libraries are crucial, and among them, public libraries are regarded as the neighborhood knowledge hubs that give the community's essential information. It is regarded as a hub for lifelong learning as well. It serves as a user-friendly local information hub. Every member of society, from farmers to officers, housewives to scholars, has requirements that are met by public libraries. A university or a research organization in a particular discipline is served by academic and special libraries. (Gaude, 2020)

24. In today's society, information is essential. It serves as the cornerstone of society's progressive endeavors. The primary sources of information are libraries and information centers, and the primary services of the majority of these centers include the transmission of information resources via the Internet. The introduction

of the Internet, particularly the World Wide Web, is leading to a revolution in libraries and information centers and is emerging as the new method of delivering information resources and services. Because information resources and services in this web-based environment may be accessed and provided as needed, library services are no longer restricted to the four walls of a building. Still, they are instead incorporated into local, regional, national, and international networks. Modern institutional libraries and information centers have created web portals that can be utilized for several functions and are largely enabled with the newest communication equipment. (Brar, 2016)

25. One of the most rapid eras of change in library history has begun thanks to the Web. The type of librarian who cannot adapt to change is soon becoming out of style. The Web represents a library's finest opportunity to adapt to change while enhancing content access and enhancing services to its users. Librarians are pressured to adopt the most recent technology to develop their Web sites, implement Web-based Online Public Access Catalogues (OPACs), and provide a wide variety of electronic services, including user education and digital reference services. This is due to the rapid growth of online information products and the demand to provide access to Web library collections. The development of digital libraries, network-based services, and the creation of the Global Information Infrastructure have all been pioneered by libraries. (Tang & Thelwall, 2008)

CHAPTER 3

Explanation of the Concepts

3.1: Introduction

New opportunities and difficulties for libraries in the creation, marketing, diffusion, and storage of information have been brought about by technological innovations. The library is just one of the many organizations changing as a result of technology advancements. (Madhusudhan & Nagabhushanam, 2012) The function of library professionals has evolved throughout time to include managing information and utilizing cutting-edge tools and technology to deliver improved information services in a web-based environment. (Murugaiah, Martin, & Nandhini, 2016) Today's modern libraries depend heavily on their websites to communicate with the public about their existence and to distribute their online holdings. The primary access point and driving force behind new web-based library services are now library websites. (Ali & Shah, 2018)

3.2: Definition

Any library service that is provided using the Internet as a platform is referred to as being web-based. Online public access catalogues, electronic databases, document delivery services, digital and virtual libraries, and instant messaging services are just a few of the services offered. Generally speaking, it can be described as "an information access service in which users ask queries via electronic means, such as email or web forms." (Ali & Shah, 2018)

3.3: Web based library service

Web-based library services are seen as extremely helpful from the viewpoint of libraries. The internet enables library workers to provide services outside of the scheduled hours (Madhusudhan & Nagabhushanam, 2012) . Users can use library services from their own

computers without going to the library because web-based library services are available around-the-clock (Ali & Shah, 2018). By using the internet to give highly visible databases and full-text services, the library improves the reputation of librarians as "internet experts." From the user's point of view, web-based library services provide features like more databases, tutorials, online textbooks, and a virtual library of links to other helpful resources. For quick assistance, they offer the special service of linking to full-text articles, integrating library housekeeping procedures, library regulations, personnel lists, etc. (Madhusudhan & Nagabhushanam, 2012)

Modern libraries are highly dependent on Web 2.0 and Web 3.0 technologies. Anyone can produce their own internet content and share it with others due to these tools. Such technologies make it possible to communicate with a smaller or larger audience, depending on the situation. (Ali & Shah, 2018)

The user and library staff do not interact face to face because the information is delivered online. However, it tries to reach out to more students than it did in offline mode.

3.4: Public libraries

According to Wikipedia, a public library is one that is open to the whole public and is typically supported by public resources like taxes. It is run by civil officials who work as librarians and library support staff. (Ghosh, 2003)

A Public library, in Ranganathan's definition, is a public organization tasked with maintaining a collection of books, making them available to those who need to use them, and fostering a culture of reading and visiting the library among everyone in the neighborhood. (Bandyopadhyay, 2008)

All community members have equitable access to knowledge, information, and creative works through a variety of resources and services, regardless of their color, nationality, age, gender, religion, language, disability, economic situation, job position, or level of education. (Saur, 2001)

3.5: Different types of web based information services in public libraries:

3.5.1: Library Webpage:

Websites for libraries serve as entry points for looking for library-related information. It delivers comprehensive information about a library and gives access to all computer-based services including library collection, library timing, and library catalogues. It also integrates access to the metadata of a library's numerous databases, e-journals, and library catalogues, operating hours, a list of the online journals to which a library has subscribed, CAS/SDI/Reference services, a list of the most popular books based on reservations, user reviews, and so forth are all provided by a library. (Gavit B. K., 2019)

3.5.2: Current awareness services:

Libraries are producing various periodic publications for current awareness services (CAS), such as current awareness bulletins, indexes, bibliographies, etc., that contain Xerox copies of all the content pages of the periodicals to which the libraries have subscribed. (Kumbhar & Bidve, 2016)

3.5.3: Inter Library Loan:

A user of one library can borrow books and films through the inter library loan programme. Obtain photocopies of articles in magazine that are owned by another library, as well as DVDs, sound recordings, microfilms, and other media. (Kumbhar & Bidve, 2016)

3.5.4: Document Delivery Services:

One of the key components of granting access to information is document delivery. It is also suggested to create a searchable database of all content pages of all print journals as well as UGC-INFONET E-Journals, various types of data bases like INFLIBNET N-list, etc., in addition to providing Xerox copies of the print journals already available in the library and its affiliated partner libraries. (Kumbhar & Bidve, 2016)

3.5.5: OPAC:

OPACs via Internet have become a popular source of bibliographic information. The librarians can provide the bibliographical data through Internet access via OPACs of other libraries in the world. The electronic documents can be supplied to the users on demand through the libraries. One important feature that libraries provide online is the OPAC. Users can use it to look up bibliographic records that are kept in a library's collections. (Kumbhar & Bidve, : An overview, 2016) Users can connect to the Web OPAC's Uniform Resource Locator (URL) at any time and from any location to search for the needed information. (Gavit B. K., 2019)

3.5.6: Bulletin Board:

"A bulletin board is an electronic message board where users can post messages and articles related to common topics, themes, or interests. The message may be intended for certain users exclusively or for all users of the bulletin board. Many libraries use bulletin boards to advertise their internet-based library services. Additionally, the bulletin board system serves as an interactive interface for seeking ideas for library programmers and services. As an interface for distributing library services, it is also useful. (Gavit B. K., 2019)

3.5.7: Ask-A-Librarian:

The Ask-A-Librarian feature is online question and answer services that link consumers with individuals who have specialized subject knowledge and the capacity to do accurate searches. Users can contact the service via email or through a web form to ask questions. Once a query has been read by a service, it is given to a specific expert for response, who then provides factual information or a list of information sources in response to the query. The responses are either sent to the user's email address or are made available online for later access by the user. (Gavit B. K., 2019)

3.5.8: Access to Database:

Today, a number of publishers offer web-based computer network solutions to give customers native access to their databases. Examples are Cambridge Scientific Abstract, Institute for Scientific Information, and Silver Platter. Publishers of journals have also

started to offer a comparable service, like Elsevier, for their publications' electronic versions. Large R&D libraries can benefit from these advancements by giving its user's desktop access to important databases and electronic publications. Libraries have their own collection of ROM databases put on their CD server or tower in addition to the databases that are publicly purchased. Databases are delivered online by database vendors including Dialog, Lexis-Nexis, and ERIC. As a result, a library that pays for these databases can now simply access them online. (Gavit B. K., 2019)

3.6: Advantages of web based information services

- ❖ The benefits of web-based services are as follows:
 - Using web-based library services allows for the simultaneous assistance of many users, saving users' valuable time. (Gavit B. K., 2019)
 - There is no longer a requirement for the modern library user to physically visit the library; as long as there is an Internet connection, anyone anywhere in the globe can access the same information. (Kumbhar & Bidve, 2016)
 - The user has the option of using any search term that matches a word or phrase in the full collection. The interfaces of internet-based services will be very user-friendly and offer clickable access to their contents.
 - Fewer library staff are needed to perform library duties and provide services.
 - Networking: A specific digital library can quickly and easily link to any other resources of other digital libraries, allowing for the seamless integration of resource sharing. (Kumbhar & Bidve, 2016)
 - Budget cuts for libraries.
 - Instantly meet informational needs.
 - Low operating expenses.
 - Cannot be misplaced or stolen.
 - Storage: Digital libraries have the ability to hold considerably more information than traditional libraries simply because digital information requires very little physical space to contain it. (Kumbhar & Bidve, 2016)
 - Prompt receipt of the problem.

- Quick publishing

3.7: Dis-advantages of web based information services

- ❖ Computer viruses, a lack of standards for electronic/digital information, the speedy degradation of electronic/digitized material, and the issue that goes along with it. Internet-based services raise these kinds of issues.
- The copy right legislation prohibits the free transmission of an author's ideas by another without that author's consent. Therefore, one challenge facing Internet-based services is how to disseminate information. (Kumbhar & Bidve, 2016)
- Every minute, a vast amount of information is produced. The creation, dissemination, accessibility, and use of this information are not subject to any laws or regulations. (Gavit B. , 2019)
- Quickness of access: As more computers are linked to the Internet, access speed is reportedly slowing down. Internet will be flooded with error messages in the near future if new technology does not advance to address the issue. (Kumbhar & Bidve, 2016)
- Initial costs are high because: - Leasing communication circuits and other infrastructure costs associated with Internet-based services, such as hardware and software, are often quite expensive. (Kumbhar & Bidve, 2016)
- Bandwidth: Internet-based services require a large amount of bandwidth to send multimedia files, yet this bandwidth is being used up more and more each day. (Kumbhar & Bidve, 2016)
- Efficiency: Finding the proper information for a certain task gets harder since there is a lot higher volume of electronic information. (Kumbhar & Bidve, 2016)
- Internet-based services are unable to replicate a traditional library's atmosphere. Additionally, a lot of people discover that reading things on paper is simpler than reading things on a computer screen. (Kumbhar & Bidve, 2016)
- Preservation: Because of advancements in technology, electronic information forms can easily become obsolete and their contents may become inaccessible. (Kumbhar & Bidve, 2016)
-

CHAPTER 4

Web Based Information Services at National and International Level

4.1 International level

4.1.1: Pakistan

In order to serve consumers who are not physically present, libraries use their websites. While many libraries offer additional WebOPACs, access to online databases, e-books, virtual reference services, electronic reserves, Web-based user education tools, virtual tours, etc., some libraries merely offer a scant amount of information about their collections and services. The Higher Education Commission of Pakistan's (HEC) main initiatives to promote technology and research in the nation include the National Digital Library Initiative, Pakistan Education and Research Network (PERN), and Research Repository of Pakistan. These initiatives have made it possible for libraries to offer cutting-edge resources through both conventional and contemporary means. Many libraries have websites that they have established or are developing. (Mirza & Mahmoody, 2009)

4.1.2: CHINA

The widespread use of the Internet and information technology has had a significant impact on people's daily lives, including their employment, education, and way of life. Among Chinese people, the Internet is increasingly used as a communication tool. Digital libraries are a new managed information sharing and service delivery model made possible by the Internet. In order to show the life cycle of its digital resource collection, the National Library of China started and finished developing its digital library system. The system included a reference implementation for indexing and searching across various library systems, digital resource retrieval, metadata collecting, resource dissemination, and resource selection. The system helped to popularise the idea of the digital library and provided the essential training in the acquisition, administration, and service delivery of digital resources. (Zhen, 2010).

4.2 NATIONAL LEVEL

4.2.1 INDIA

The Indian libraries have also realized the importance of providing people with web-based services, and they have realized that grouping together may do more than working alone. Due to a variety of factors, such as user illiteracy, infrastructure, and early funding, many Indian libraries in India are not prepared for accessing e-journals. In India, networks for libraries and information were started in the early 1980s. Some of the measures that the Indian government implemented during this time can be attributed to the growth during that time. A number of organisations, including the MHRD, IIM Libraries, CSIR, ISRO, DRDO, DAE, ICAR, SIRNET, NICNET, NISSAT, and DRDO are actively striving to improve the current situation. Library consortiums are growing in importance as a user service in India. By making a small investment, the Indian consortiums will assist the library in delivering improved services to its patrons. (Bhatnagar, WEB-BASED LIBRARY SERVICES, 2005) Public libraries can play a significant part in closing the digital gap. With the exception of a few institutions in cities, the quality of infrastructure, collection, information technology utilization, manpower, etc. in public libraries in India is very low. Research, academic, and special libraries fared better than other libraries in all of these areas. High-speed connectivity, online access, accuracy, and superior service will all be made available to people thanks to computerization. The development of a network that can reach even the most isolated areas of the nation is crucial. Public libraries in India should employ cutting-edge convergence technology, have well-maintained infrastructure supported by competent staff who have undergone professional training, and be highly motivated to work towards reducing cultural inhibitions among their patrons. (Ghosh, 2003)

Web-based library and information services represent a new paradigm and a way of thinking, not merely a piece of technology. The main portals for accessing library services and collections are their websites. Benefiting from web technology, libraries all over the world have modified how they engage with their users and offer document delivery services. Libraries are implementing Web 2.0 technology to improve the workflows and models for the information services provided by different sorts of library. In order to reach

out to users and provide them with better services, it is becoming more popular to incorporate various Web 2.0 and Web 3.0 technologies and tools into various library operations and services. (Ali & Shah, 2018)

This are some Initiatives taken in India to provide web based services:

4.2.1.1: National Digital Library of India

The National Digital Library of India (NDLI) is a virtual library featuring search and browse functionality as well as a number of other services for the learning community. Through its National Mission on Education through Information and Communication Technology (NMEICT), the Ministry of Education of the Government of India sponsors and mentors it. Focused searching is made easier by the use of filtered and federated searching, allowing students to access the appropriate resource quickly and easily. NDLI offers services tailored to the needs of particular user groups, such as exam preparation for high school and college students as well as job seekers. Services are also offered for general learners and researchers. NDLI is designed to hold content of any language and provides interface support for 10 most widely used Indian languages. It is built to provide support for all academic levels including researchers and life-long learners, all disciplines, all popular forms of access devices and differently-abled learners. It is designed to enable people to learn and prepare from best practices from all over the world and to facilitate researchers to perform inter-linked exploration from multiple sources. It is developed, operated and maintained from Indian Institute of Technology Kharagpur.

4.2.1.2: Sugamaya Pustakalya

TCS, Daisy Forum of India, and NIEPVD (National Institute for Empowerment of Persons with Visual Disabilities), Government of India, have joined forces to create Sugamaya Pustakalaya in an effort to eliminate the book famine that affects individuals with print disabilities. You may obtain books in a variety of languages from different libraries all throughout India right here. In order to provide you accessible books from all around the world, we have also teamed with international organisations like Bookshare and the Accessible Books Consortium.

CHAPTER 5

Data Analysis and Interpretation

5.1 Data Analysis:

The data is collected from the websites of India's state public libraries. In total, there are 28 state libraries, however it is found that only 16 of them have library websites at the time of conducting this study. The other 12 state public libraries don't have websites. The public library websites included in the survey are:

Table no 5.1: States and its public libraries

SR.NO.	STATE	PUBLIC LIBRARY
1.	Andhra Pradesh	Visakhapatnam public library
2.	Assam	Directorate of library services
3.	Bihar	Khuda Baksha Oriental library
4.	Goa	Krishnadas Shama state central library
5.	Gujarat	Kavi Narmad central library
6.	Kerala	State central library
7.	Madhya Pradesh	Maulana Azad central library
8.	Maharashtra	Asiatic Society of Mumbai
9.	Mizoram	Mizoram state library, Aizawl
10.	Odisha	Harekrushna Mahab state library
11.	Punjab	Musafir Memorial Central State Library
12.	Rajasthan	Dr. Radha Krishnan State Central Library
13.	Tamil Nadu	Anna centenary library
14.	Telangana	State central library, Agartala
15.	Tripura	Birchandra state central library
16.	Uttar Pradesh	Allahabad public library

The 16 state library websites serve as the foundation for data collection and the analysis is based on the information provided on these public library websites, which after analysis is presented in the form of tables, charts, and graphs.

5.1.1 Basic services provided by the library

This question aims to investigate the different services offered by the library that are listed on its websites.

Table 5.2: basic services provided by the library

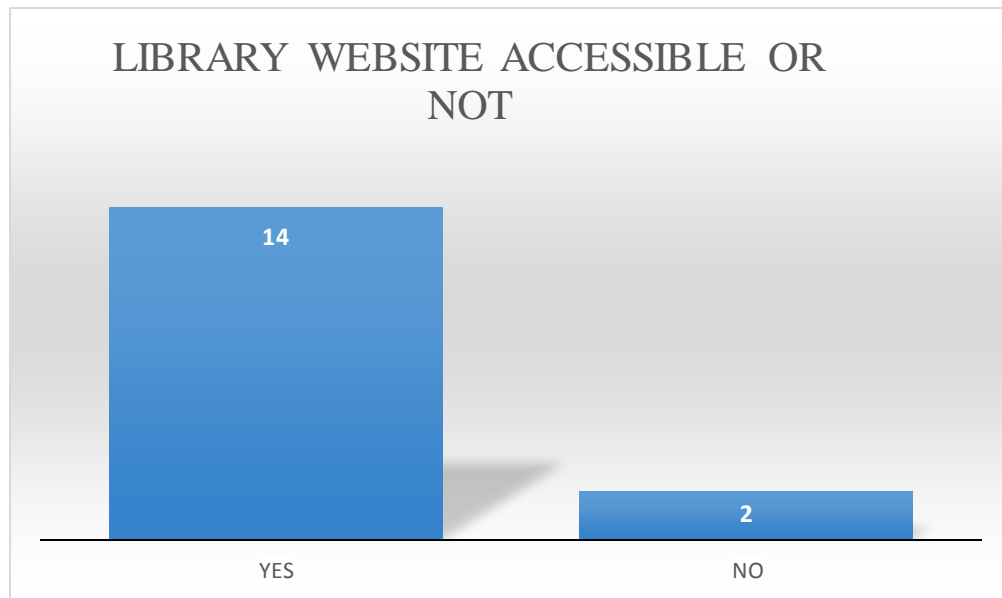
BASIC SERVICES PROVIDED BY THE LIBRARY.	NO. OF LIBRARIES
Reference service	08
Catalogue service	02
Issue/return	11
Reserve book	01
Mobile service	01
New arrival	03
Book suggestion	01
Children corner	07
Reprographic service	06
Rare book collection	05
Internet browsing	05
Rss feed	01
Newspapers	02
Manuscript	01
Braille	01

The above table 5.1 shows that reference service is listed on 8 library websites, information on circulation service is provided on 11 websites, the children corner is listed on 7 websites, 6 libraries have provided information on reprographic services they offer, 5 libraries have laid out information each, on rare book collection and internet browsing, only 3 libraries alert the users on new arrival of books, newspapers subscription and information about catalogues is provided by only 2 libraries and services like RSS feed, manuscript information, braille facilities, suggestion and book reservation, mobile services are rarely offered by the libraries.

5.1.2 Use or access the library website.

The purpose of this question was to find out who can access the library website and whether the library website is accessible by anyone or not.

Figure 5.1 library website accessible or not

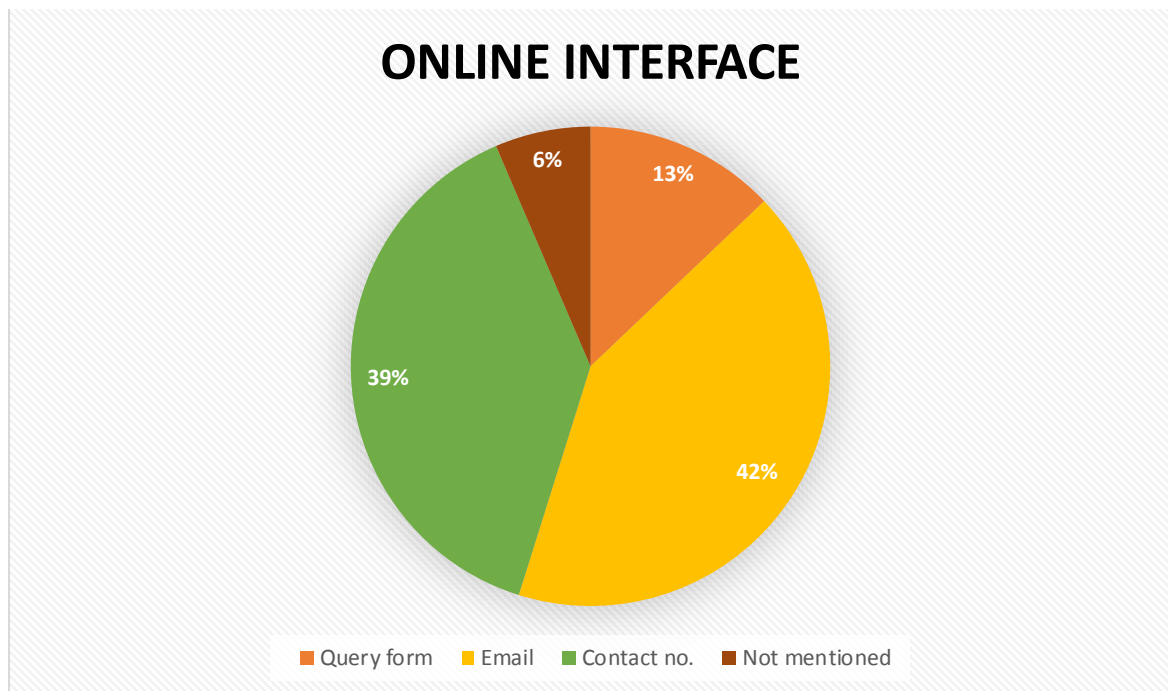


As seen in Figure 5.1 above, almost every library website is accessible from anywhere and is available to everyone. Out of all of them, just 2 websites prevent users who are not library members from accessing them. They needed a username and password to be able to access the library's website.

5.1.3 Online interface done to solve the query

The purpose of this question was to see how the users can connect with the librarians through the webpage for solving their information needs.

Figure 5.2. Online interface done to solve the query



The above Figure 5.2 reveals that, the users can connect with the librarians using the option of email, query box/chat box and by using the contact number provided. This provision is required on the library webpage so that the users can contact and personally communicate with the librarian if needed. It is found that 42% website offers email addresses, 39% webpages have provided the contact numbers, and 13% library webpages have offered question forms for consumers to submit their inquiries online. For speedy reaction, they have also offered 2 to 3 options together. On some library websites, you can access their social network accounts also.

5.1.4 Virtual tour of the library

The purpose of this question was to see whether the library website has a virtual tour of the library or not.

Figure 5.3 virtual tour of the library

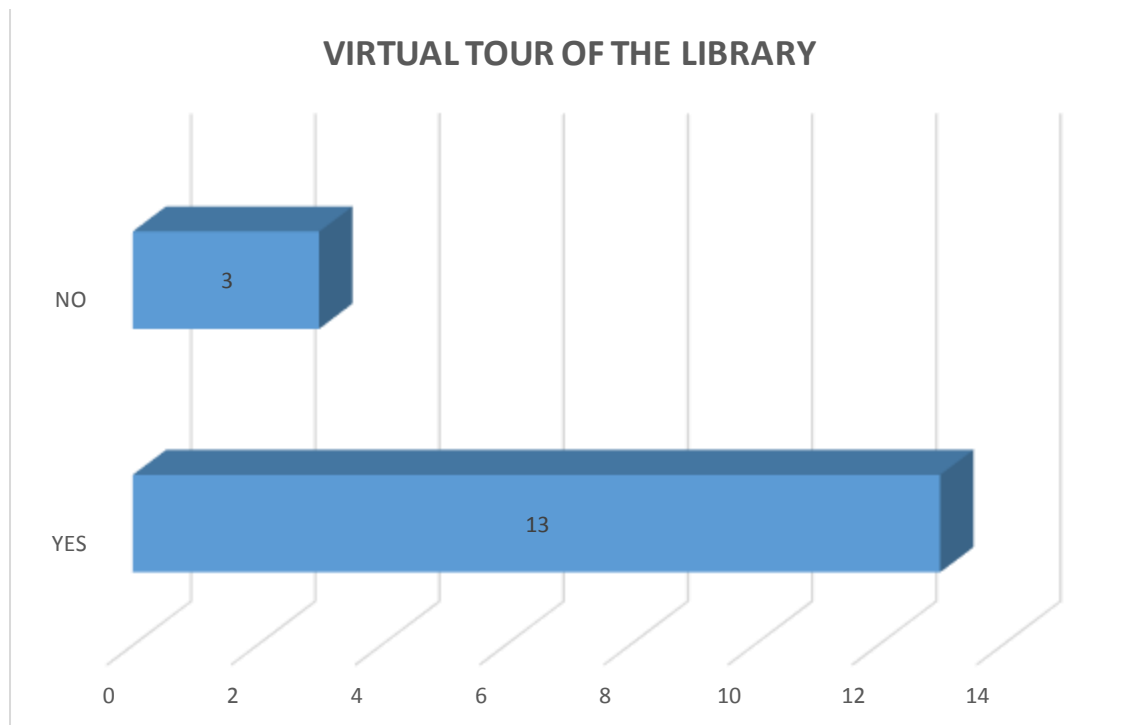


Figure 5.3 shows that the majority of library websites provide a virtual tour that describes each floor of their library. Some websites offer library photo galleries where they display their collection as well as images of activities and programmes. The virtual tour facility is very much useful as it works as an orientation service to acquaint the new users to the library thereby promoting the use of the library.

5.1.5 Library website hosting events.

The purpose of this question was to find out whether the library host any events or activities for their user.

Figure 5.4 Hosting events



Figure 5.4 shows that a majority of the libraries do not provide information about the activities and events it organizes for its patrons. There were only six library websites offering user-friendly activities that included information about various programmes like book exhibits, educational talks, career guidance, National Youth Day celebrations, etc. Several libraries also encouraged health care issues by organizing talks on mental health.

5.1.6 OPAC Service

The purpose of this question was to find whether the library website has an OPAC service to be used by the user anytime.

Figure 5.5 OPAC service

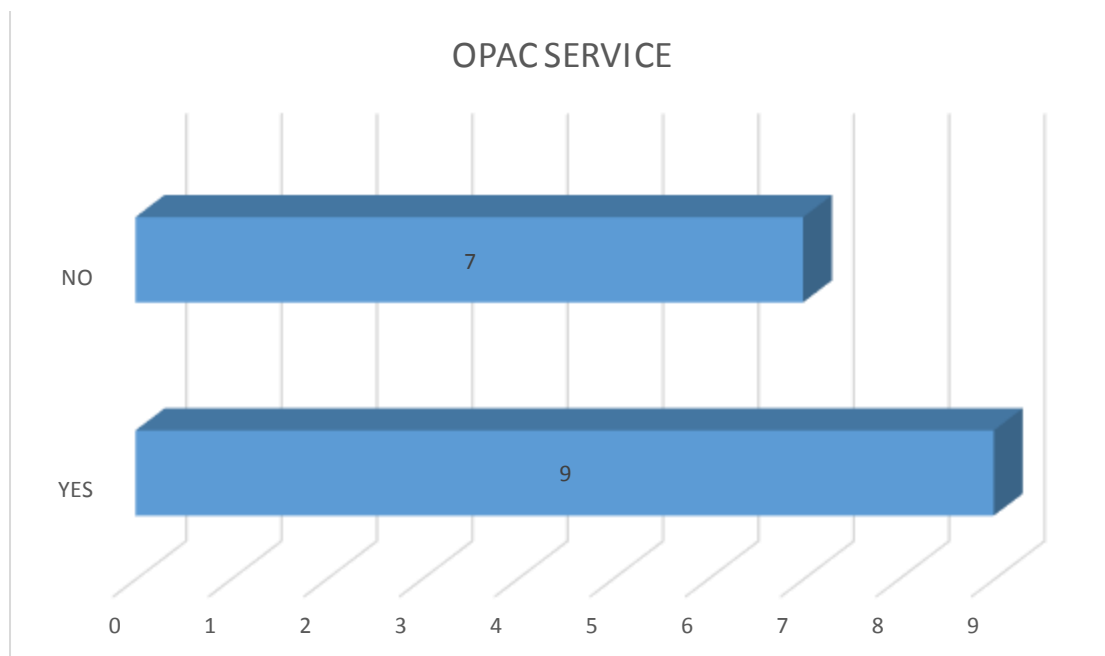


Figure 5.5 shows that a significant portion of the library's website offers OPAC services for patron use. The OPAC enables users to browse the library's books, magazines, and other items from any location. OPAC makes it easier for users to keep track of the items that are either in the library or out on loan thereby saving their time. It assists in retrieving the book by author, title, class number, or subject.

5.1.7 ILL & document delivery service

The purpose of this question was to find whether the website has an option for inter-library loan and document delivery.

Figure 5.6 ILL & and Document delivery

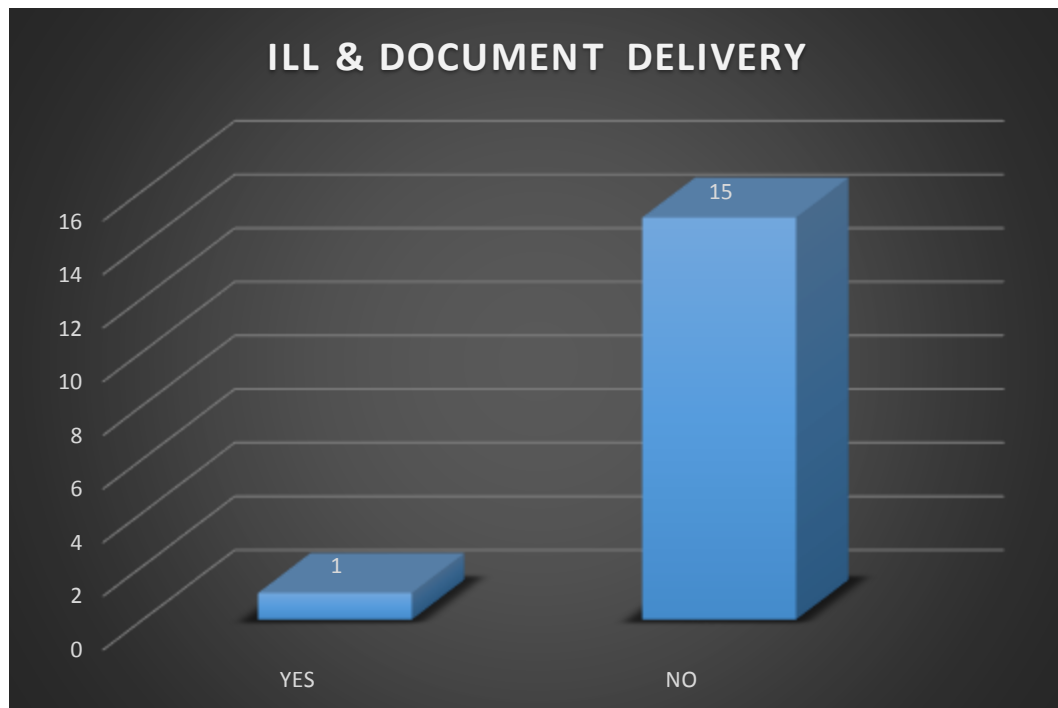
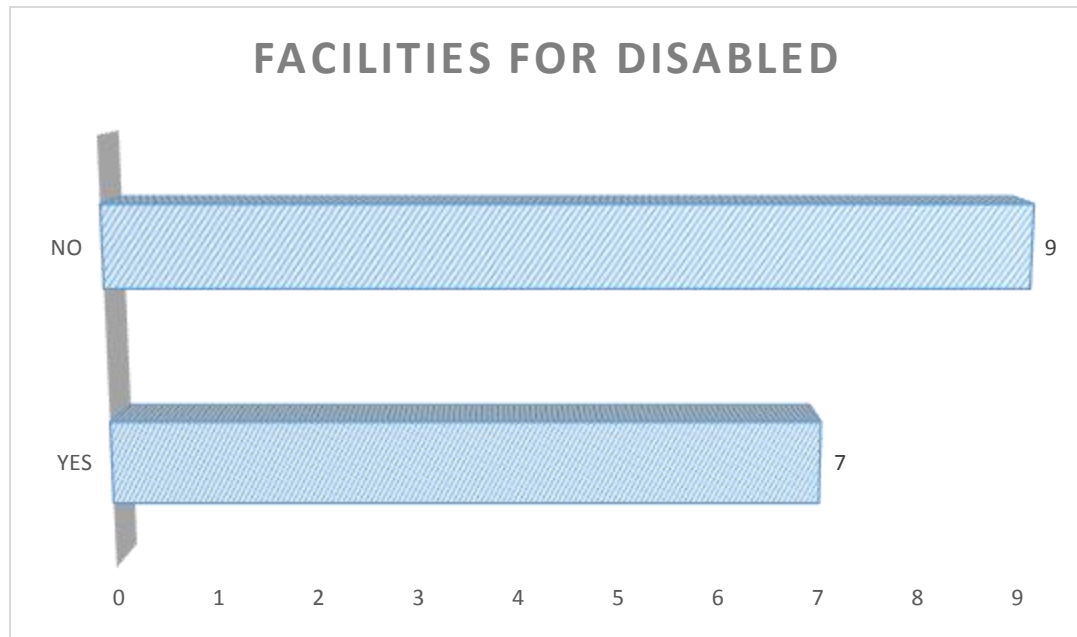


Figure 5.6 demonstrates that just 1 library offers document delivery and interlibrary loan services on their website. The remaining 15 do not offer such options.

5.1.8 Facilities for disabled users

The purpose of this question was to find out the facilities that are provided to the handicap people on the website.

Figure 5.7: Facilities for disabled



The figure 5.7 above demonstrates that 9 out of 16 library websites do not offer any services for those with disabilities, which may make them feel excluded. Only seven library websites have included certain website features such as brightness option, font setting, audio readers, braille setting and videos with captions that allow the disabled users to visit the website and as such consider them as a part of the library.

5.1.9 Additional links

The purpose of the question was to find out whether the library website provides some additional link on not.

Figure 5.8 Additional links

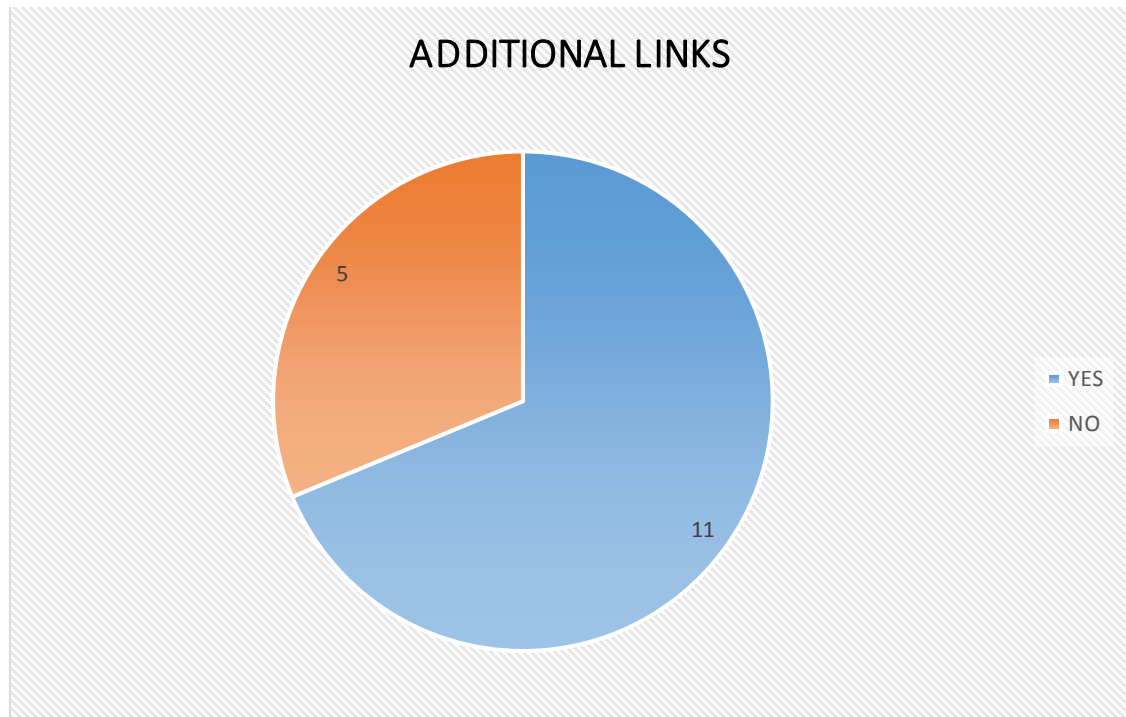


Figure 5.8 shows how the majority of the library website's users have provided additional links to its webpages like linking government websites, websites related to Aadhaar cards, election cards and also websites of other libraries. The goal of library websites is to provide their users with all they need under one roof that includes additional government services that is well accomplished by only 11 libraries.

5.1.10 Different e-resources available on the library website.

The purpose of the question was to figure out the types of e-services provided by the library on their websites.

Table 5.3 e-resources

E-RESOURCES	NO. OF THE LIBRARIES
E-BOOKS	02
E-JOURNALS	02
DATABASE	02
ONLINE GAZETTE	02
DIGITAL ARCHIVES	02
CATALOGUE	01
E-NEWSPAPERS	01

The above table 5.3 shows that E-books, E-journals, databases, online gazette and digital archives are provided by only 2 library websites, and 1 library website provides the facilities of catalogue and E-newspapers rest library website don't provides e-resources to their users.

5.1.11:Full text

The purpose of this question to find whether full text of e-resources are available on the websites or not.

Figure 5.9 full text updated or not

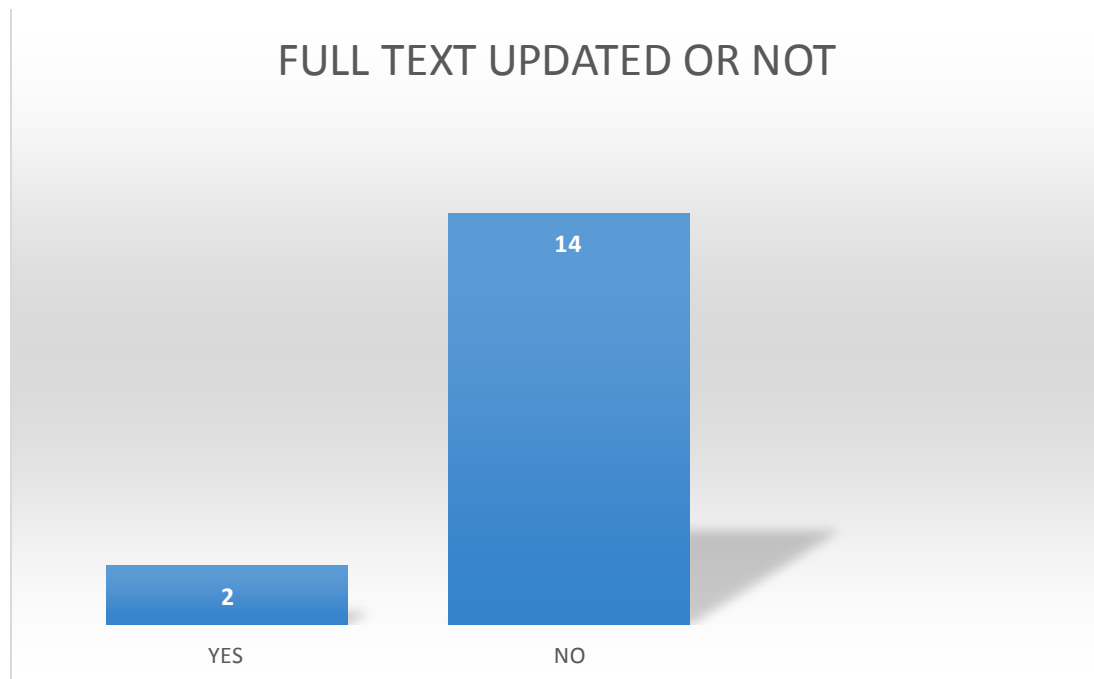


Figure 5.9 above shows that 14 out of 16 library websites do not provide full text access to the electronic materials they host. They simply offer a small portion of the article's abstract. Whereas two libraries' websites give users access to the e-resources' complete texts, which they can use whenever they like.

5.1.12: Digital access

The purpose of this question was to find out if the digital collection is open or not.

Figure 5.10 Digital Access

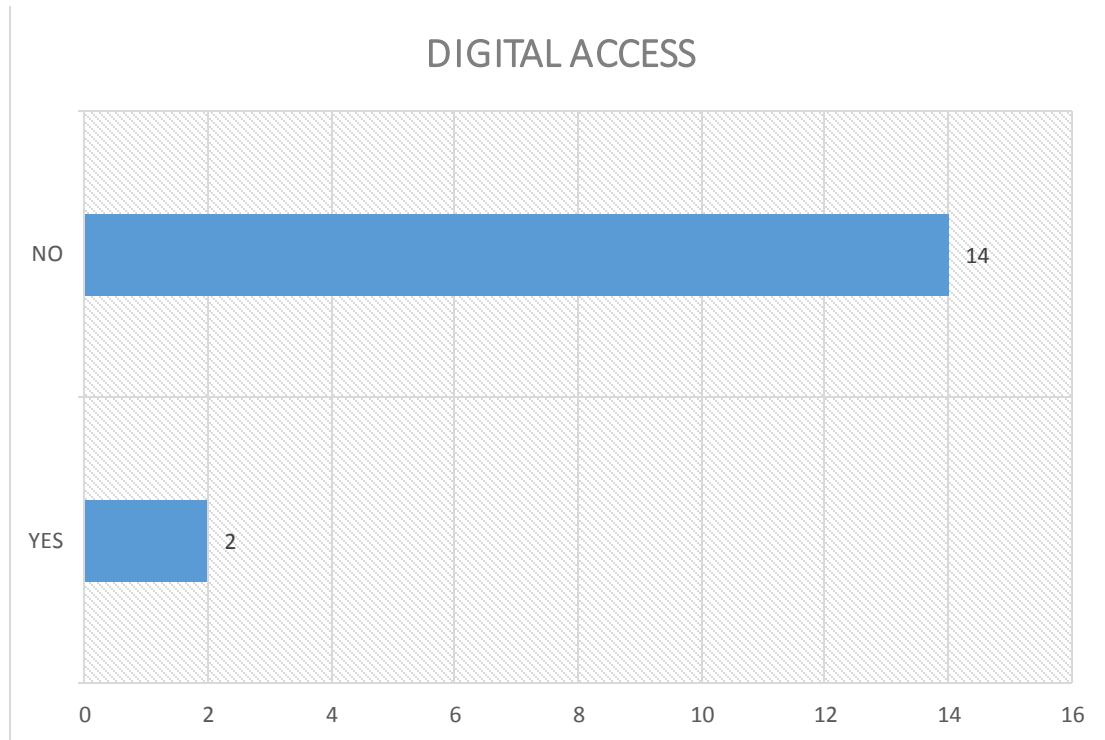


Figure 5.10 above demonstrates how many library websites do not grant access to their digital collection to users who are not members of the library. To access them, you needed a password and login. Yet, just two library websites give users full access to their digital collection. You can also download the file or article for later usage because they don't impose any restrictions on the user.

5.1.13: Library websites working or not.

The purpose of this question was to find out whether the websites of the library were working properly or there was a problem while using the website.

Figure 5.11: library website working properly or not

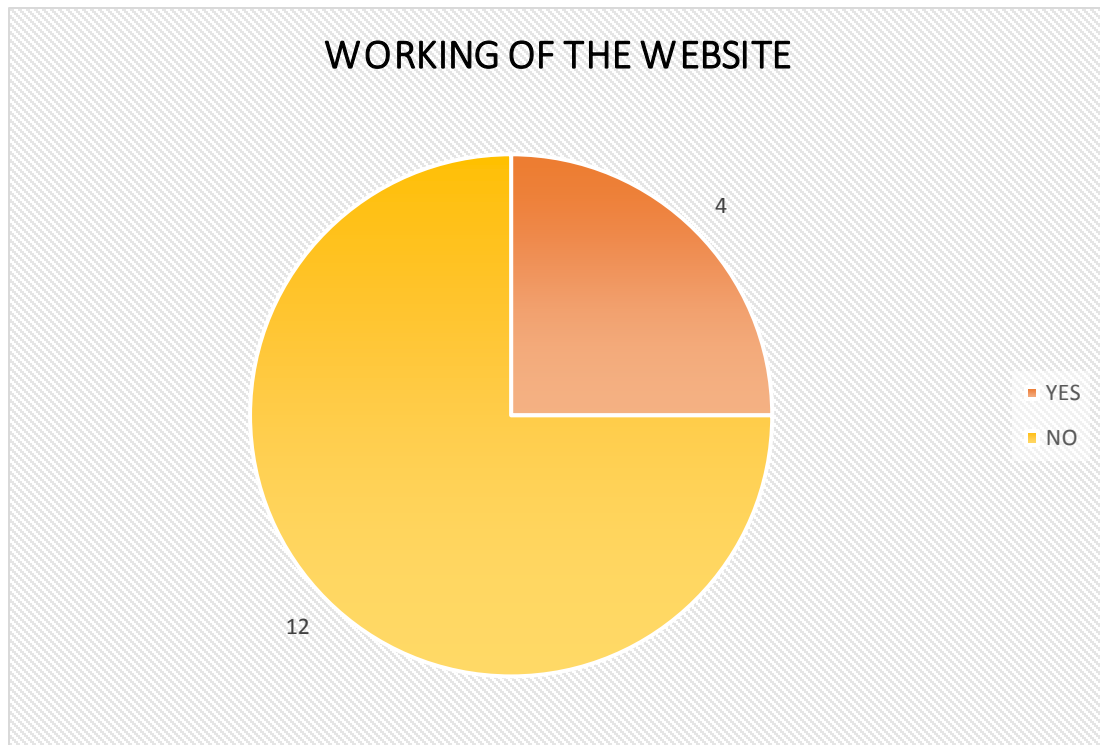


Figure 5.11 above shows that when using 4 of the libraries' websites is trouble-free. As compared to 12 other websites, this one has several features that are either missing entirely or have bugs. Some library websites point you in the direction of another website that has nothing to do with the library. The next page of several websites took a while to load.

5.1.14: Website update.

The purpose of this question was to find the proper time or days the website of the library is updated.

Figure 5.12 website update.

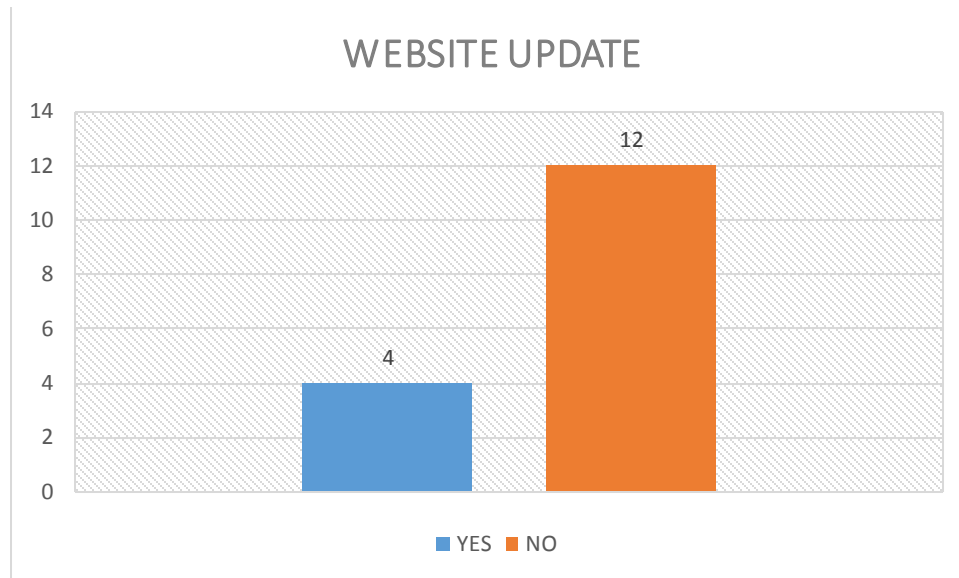


Figure 5.12 above demonstrates that 12 out of 16 library websites do not display the time when they were last updated. They don't have a set time to update, however just four websites do, and the time and date are provided under each website's description. They also provide daily updates on content such as newspapers, quizzes, library notices, and other announcements. Mostly the websites are updated in weekly monthly and some don't have a fix time.

5.1.15: Footfall of the library website

The purpose of this library was to find out the daily footfall of the users on the library website.

Figure 5.13 library website footfall.

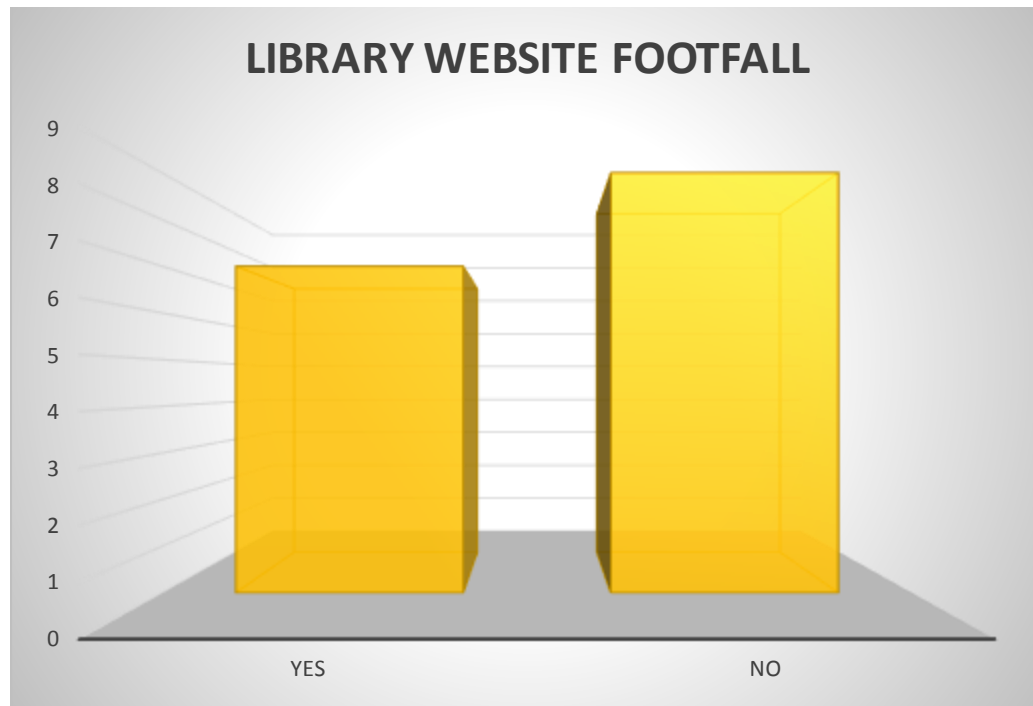


Figure 5.13 above demonstrates that while the majority of websites do not publish their footfall, 7 out of 16 library websites do publish a daily footfall of their library websites. When provided, footfall provides a daily user ratio at a specific period. It also gives a clear picture of how many users are using the website of the library.

5.2. HYPOTHESES TESTING:

Hypothesis 1: The public library websites are not user friendly.

From Figure 5.7 it can be seen that 7 library websites (43%) have included certain website features such as brightness option, font setting, audio readers, braille setting and videos

with captions that allow the disabled users to use the library webpage. Figure 5.2. Indicates that most of the libraries (94%) have designed their library interface in such a way that the users can connect with the librarians through the webpage for solving their information needs thereby making it user friendly. Hence the hypothesis **“The public library websites are not user friendly”** is rejected.

Hypothesis 2: The public library websites are not updated regularly

Figure 5.12 reveals that 12 out of 16 library websites do not display the time when they were last updated. They don't have a set time to update, however just four websites do. Therefore, the hypothesis **“The public library websites are not updated regularly”** is proved and accepted.

CHAPTER 6

Findings, Suggestion and Conclusion

6.1. FINDINGS:

- A majority of library websites are discovered to be open to everyone and reachable from anywhere. Only 2 of them—out of the entire list—restrict access to users who are not library members. Library's website requires a username and password for access.
- It is discovered that users can get in touch with librarians by email, chat or query box, or by calling the number supplied. It turns out that 42% of websites offer email addresses, 39% of websites offer phone numbers, and 13% of library websites offer question forms so that customers can submit their inquiries online
- Majority of library websites offer a virtual tour of their library that details each floor. Some websites provide photo galleries for libraries where they showcase their collection as well as pictures from events and programmes. The virtual tour feature is quite helpful because it serves as an orientation service to introduce new users to the library and encourage their use.
- The majority of libraries don't notify their users about the activities and events they plan for them. There are just six library websites that provided user-friendly activities and information about a variety of programs, including book displays, educational talks, career counseling, National Youth Day celebrations, etc.
- The library's website has a sizeable section dedicated to OPAC services for users. Users can access the library's books, magazines, and other materials from anywhere thanks to the OPAC. OPAC saves users time by making it simpler for them to keep track of the materials that are either in the library or out on loan.
- It was found that there is only one library that provides document delivery and interlibrary loan services online. The other 15 don't have such possibilities.
- This indicates that nine of the sixteen library websites do not provide services for persons with disabilities, which could cause them to feel excluded. Only seven library websites offer particular online features, such brightness control, font size,

audio readers, braille settings, and movies with captions that let impaired individuals use the website and, as a result, are regarded as a part of the library.

- The majority of the library website have added extra links to its pages, including links to websites for other libraries, government websites, websites for Aadhaar cards, and websites linked to election cards.
- They merely provide a brief excerpt from the article's abstract. While the websites of two libraries allow visitors to view the full texts of the e-resources at anytime like eBooks, e-journals, databases, online gazettes, and digital archives etc.
- A study discovered that 14 of 16 library websites did not offer full-text access to their electronic resources. They merely present a small part of the abstract. In comparison, the two libraries' websites allow people to access the full text of the e-resources, which they can use whenever they choose.
- It was discovered that a password and login were required to access the library's collection. However, just two library websites offer complete access to their digital collection to consumers. Because they don't place any restrictions on the user, you can also download the material or article for later use.
- While utilizing the webpages for 4 of the libraries works smoothly. This website has various features that are either completely missing or have issues compared to 12 other websites. Some websites associated with libraries send you to another website with nothing to do with libraries. It took some time for the following page of several websites to load.
- It shows that 12 out of 16 library websites do not provide the most recent update time. Only four websites have a scheduled time for updates; the time and date are listed below each website's description. Additionally, they offer daily updates on news, tests, and alerts from the library, and other items. Most websites update once a week, once a month, or occasionally.
- It reveals that, despite the fact that the majority of websites do not publish their daily footfall, 7 out of 16 library websites do. When offered, footfall offers a daily usage ratio at a certain time. It also provides a clear image of how many people use the library's website.

6.2: SUGGESTIONS

- Public library websites should be user-friendly in order to draw users in while they are using them. When building a website, libraries should adhere to a specific standard to make it easier for users.
- Libraries should have the necessary infrastructure to offer web-based library services. Libraries should make full use of their websites, which must contain as much information about the library as possible and also make the user aware about the services available in the library.
- Government should provide adequate funds for the proper maintenance of web resources and services.
- Web 2.0 and Web 3.0 tools should be used by libraries to communicate with users and offer document delivery services. Both consumers and library staff should receive sufficient training on how to use Web 2.0 and Web 3.0 tools.
- The website should hold events for its users since it encourages them to discover their talents and helps them overcome their anxiety about participating in activities.
- In order for users to conveniently access web services and information, librarians must regularly update the portal and maintain user-friendly settings.
- A guide to the library should include instruction on specific resources, disciplines, retrieval techniques, reference work, and other topics.
- A website should have a straightforward and short URL because they are easier to remember and it will help the user to access it easily.
- On the websites, contact information or email address of library staff should be presented in a searchable format so that when a user wants to contact professional library personnel regarding their query it will be easy for them to contact them.
- Public libraries need to use their websites as a notice board to promote their library services and also updating the various activities which are being carried out.
- There should be no language barriers between the user and the library websites. The website should provide different language preferences which will help the user to use the website.

- There should be facilities for disabled people so that they can access the website without anyone's help. Websites should provide audio search box which will help them to use the websites.

6.3: CONCLUSION

The active conversion of numerous services to the web environment makes it easier for the user to access the services and resources. Web resources and services assist in disseminating information to a broader audience. Users in the twenty-first century depend primarily on the data made available through the web. As internet has become a part of the daily life, the library needs to get updates to fulfill the needs of the modern users. Delivering web-based information resources and services is widely requested to meet the information needs of users as a result of the development of the latest technology in the field of library and information science.

As web resource organisations standards are still being developed, librarians are compelled to use print resource standards that were not intended for use with electronic resources. Web-based information resources can also be relocated from one site to another or taken completely off the web, making them volatile

Libraries fundamental goal is to help and educate users on accessing, assessing, and using information effectively, even as we actively transfer library services to web based services. It's just the mode has change but the goal is same.

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