

**USE OF UGC-INFONET DIGITAL LIBRARY CONSORTIUM BY
FACULTY MEMBERS AND RESEARCH SCHOLARS IN
SCHOOL OF PHYSICAL SCIENCES, MIZORAM UNIVERSITY:
A STUDY**

*A Dissertation submitted in partial fulfillment of the requirement for the Degree of
Master of Philosophy in Library and Information Science*

Submitted by

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M.Phil. Registration No.: MZU/M.Phil./168 of 20.05.2014

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2014

**Use of UGC-Infonet Digital Library Consortium by Faculty Members
and Research Scholars in School of Physical Sciences, Mizoram
University: A study**

Sir/Madam,

I am pursuing Mphil in the Department of Library & Information Science, Mizoram University, Aizawl. As a component of the syllabus, I have to submit my dissertation on the above mentioned topic under the guidance of Dr. Manoj Kumar Verma. You are requested to kindly fill up the questionnaire. I insure you that the information given by you will be used for academic purpose only.

(Please answer the question or tick mark in the box provided against each question)

F.Chanchinmawia

Mphil Scholar

Dept. Of Lib.&Inf. Sc.

Mizoram University

Questionnaire

Mizoram University is a member of UGC-Infonet Library Consortium, which provides access to 5,500 peer review electronic Journals to the university.

A. General information

1. Name of the correspondent.....
2. Designation :
3. Name of the Department:

Gender: Male/Female

Age group of correspondent:

- a) Below 35years b) between 36-45years c) between 46-55yaers
d) 56 years+

B. Library uses & Its Collection:

- How long are you using the library? Please mention the year_____
- Do you feel the library has adequate resources? Yes () No ()
- Frequency of visit of the library
a) Daily () b) Weekly () c) Monthly () d) Occasionally ()
- If you do not visited the library at all then please mention the way to access the resources
a) Intranet () b) Internet () c) Department Library ()
d) Others (if any)_____
- Purpose of visiting the library:

- a) To borrow/return books () b) To study () c) To read Periodicals ()
 Others (pl. Specify) _____

- How useful do you find the library:

- a) Useful () b) Very Useful () c) Not at all ()

- What kind of sources you frequently use from Library:

- a) Print sources () b. On-line sources () c) Web sources ()
 d) CD-ROM () e) DVDs () f) Bulletin Board ()
 g) Others (pl. specify) _____

- Are you using electronic resources of library? Yes/No

C. Computer Competency and Internet Uses by Correspondents

- Where do you place your computer knowledge and skill:

- a) Excellent b) good c) satisfactory d) poor e) Computer illiterate

- Are you regular user of Internet? Yes/ No

- Frequency of user Internet:

- a) daily b) alternate day c) 2-3 times in a week d) weekly

- You access Internet from:

- a) Department b) Computer Centers c) Library d) Personnel data card
 e) Mobile phone

Are you satisfied with Internet speed? Yes/No

If no specify

why?.....

D- Awareness and Use of UGC-Infonet Library Consortium:

- Are you aware of UGC-Infonet Digital Library Consortium: Yes/No

- You came to know about UGC-Infonet Digital Library Consortium from:

- a) Self b) Friend/s/colleagues c) Library staff d) Internet
 d) Teachers e) Library Website f) Library orientation programme

Do you use UGC-Infonet Digital Library Consortium for literature search: Yes/No

- If, you are not using UGC-Infonet Digital Library Consortium, why?

- a) Not aware at all b) Aware but, no time to access c) Aware but not interested
 d) Lack of relevant information source e) Lack of proper Internet connection
 f) Lack of training g) any other reason

- How frequently you access and make use of this Consortium
 - a) Every Day
 - b) 2-3 times in a week
 - c) Once in a week
 - d) Once in a two weeks
 - e) occasionally

- Preferred Place to use UGC-Infonet Consortium :
 - a) University Library
 - b) Computer Center
 - c) Department
 - d) Hostels

- For what purpose you are using UGC-Infonet Consortium?
 - a) To keep abreast himself about latest developments
 - b) For Teaching
 - c) For Research
 - d) For Guiding research students
 - e) for writing books
 - f) for writing research articles

- Preferred form of journals acquire for academic use:
 - a) Read article on-line
 - b) save article for further reading
 - c) take print out for reading
 - d) any other, pls. Specify:.....

- Preferred file format for down loading articles from Consortium:
 - a) HTML
 - b) PDF
 - c) Document file

- How do you know about latest online contents in your field?
 - a) I search content according to my requirement on search engine ()
 - b) Browse table of content of online journals regularly ()
 - c) I received table of content through email-alert services ()
 - d) Through indexing & abstracting services ()
 - e) Through discussion list/forum ()

- Your preferred route to access electronic resources through:
 - a) Search engine (eq. Google)
 - b) Open access journals directory
 - c) Library websites
 - d) UGC-Infonet consortium
 - e) Publisher websites

- Please make a tick the name of database/journals/publications that you access through this consortium (As enclosed in appendix-1)
 - a)
 - b)
 - c)
 - d)

7. How do you rate the quality of the UGC-Infonet consortium for your academic and research purpose: a) Excellent b) Very Useful c) Useful d) Not up to the mark e) Cannot say

E-User Education Program for use on UGC-Infonet:

- Library is organizing user education program for use of UGC-Infonet resources
Yes/No
- Do you aware and participated in user education program for use of UGC-Infonet resources
a) aware and participated b) aware but not participated c) not aware
- What are the adequacy of users awareness program ?
Adequate/ Not adequate
- What problems generally you faced in users awareness program about UGC-Infonet?
a) users awareness are theoretical not practical b)Period are too short
c) to many participant d) participant are different background
e) ant other.....
- Have you attend user awareness programme on UGC-Infonet Digital Library Consortium organized by DLIS, MZU in 2010. Yes / No

F. Level of satisfaction and Problems in Access:

- Are you satisfied with UGC-Infonet Library Consortium services?
a) Fully satisfied b) Satisfied c) Fully unsatisfied d) unsatisfied
e) None of them
- Reason for un-satisfaction with UGC-Infonet Library Consortium services in MZU?
a) Lack of sufficient e-resource b) Slow Internet speed
c) Limited access terminal d) Insufficient time & training
e) Lack of assistance by library staff f) Technical Problems
- What are the main problems you faced during access UGC-Infonet Library Consortium services in MZU
a) Lack of knowledge to use ()
b) Lack of sufficient Internet nodes in University Library ()
c) Slow Internet bandwidth
d) Lack of accessibility to UGC-Infonet e-Journal Consortium at Department /work place ()
e) Slow Internet connectivity ()
f) Content searching is difficult as compared to search engine ()

- g) Users do not understand how to access the journals ()
- h) Technical Problems ()
- i) Frequent Power cut ()
- j) Lack of relevant information sources ()
- k) Lack of assistance by library staff ()

- Please suggest some remedial measures for optimum use of UGC- Infonet Digital

Library Consortium:

- 1.....
- 2.....
- 3.....
- 4.....

Date:

Signature

DECLARATION

I hereby declare that the dissertation entitled **‘USE OF UGC-INFONET DIGITALLIBRARY CONSORTIUM BY FACULTY MEMBERS AND RESEARCHSCHOLARS IN SCHOOL OF PHYSICAL SCIENCES, MIZORAM UNIVERSITY: A STUDY’** submitted by me has not previously formed the basis for the award of any Degree or Diploma or other similar title of this or to any other University or examining body.

Date:
Place: Aizawl

(F.CHANCHINMAWIA)

C E R T I F I C A T E

This is to certify that the dissertation entitled **“USE OF UGC-INFONET DIGITAL LIBRARY CONSORTIUM BY FACULTY MEMBERS AND RESEARCH SCHOLARS IN SCHOOL OF PHYSICAL SCIENCES, MIZORAM UNIVERSITY: A STUDY”** submitted by Mr. **F.Chanchinmawia** for the award of the degree of **Master of Philosophy in Library and Information Science** is carried out under my guidance and incorporates the student’s bonafide research. This is the candidate’s original work and is worthy of examination.

Date:

(Dr. Manoj Kumar Verma)

Place: Aizawl, Mizoram

Supervisor

Acknowledgement

*First of all, I would like to express my sincere thanks to our **Almighty God** for giving me an opportunity and strength to complete my dissertation work.*

*I would also like to express my deep sense of gratitude and heartfelt thanks to my supervisor **Dr. Manoj Kumar Verma**, Asst. Professor, Department of Library and Information Science, Mizoram University for his intellectual, understanding, untiring help and invaluable qualitative suggestions enable me to successful completion of this dissertation work.*

It has been a tremendous and very difficult to get requisite information for various sources, I remain grateful to all the Faculty member and Research Scholar department of Physical Sciences for their help and support while collecting the primary data. Especially I would like to express my heartfelt thanks to my friend for their generous help, valuable time in the preparation of this dissertation.

*Last but not at least, I would like to thank my **parents** who have supported me and given me everything right from the start. They give me encouragement and great moral support which has enabled to complete this dissertation work.*

Date:

(F.CHANCHINMAWIA)

Place: Aizawl, Mizoram

Preface

Libraries have been cooperating and collaborating on collection building and resource sharing for many years. The cooperation was based on inter-library loan and preparation and publication of union catalogue. For this purpose of collaboration and resource sharing, many library networks were established during 1980-90 in our country like CALIBNET, DELNET, MALIBNET, PUNENET, INFLIBNET etc. but the ways of cooperation in building collective resources and access to information resources was not easy and effective. Library cooperation for access to information resources was limited to the formation of networking among the libraries having homogeneous interest. However, with the advent of ICT and its application in library activities, new opportunities opened up for greater cooperation among libraries. At the global level Internet and at the national and local level several library networks came in vogue and databases created for information sharing. In recent years availability of information resources in digital or electronic medium has further facilitated exchange of information resources among libraries, thus creating favorable condition for increased resource sharing. Emergence of internet and particularly World Wide Web as a new medium of information storage make the concept more come into sight than earlier and it cause the emergence of a new model of resource sharing i.e. library consortia and it is a very promising development in this direction. Consortium of libraries is well known for sharing of resources all over the world.

The e-resources are becoming important information source in today electronic environment as they are more up-to-date and can be accessed anywhere, crossing all geographical boundaries and these resources are added a lot of value in education and research. The accessibility to international journals in Indian universities has improved many folds with setting-up of a government funded library consortia. Prior to setting up of these consortia, the access to e-journals was restricted to a premier institutions like IISc, IITs, IIMs and some central universities, who were subscribed few e-resources including bibliographic databases on CD ROM, a few e-journals accessible free with subscription to their print versions and a negligible fraction of journals on subscription. After launched of “UGC-INFONET Digital Library Consortium” in 2004, availability and accessibility of e-resources increased phenomenally in universities and setting a new culture of electronic access and browsing in academic institutions.

The development of ICT devices, the rapid rise of electronic databases, modern e-book technologies and share these resources through library consortium have changed the entire scenario of academic institutions and with this changes, the users attitude is also changed from print to electronic and become invaluable tools for academicians which compliments print based resources in an academic library. Therefore, it becomes an important area of research for information professionals. In this context the present problem-“**Use of UGC-Infonet Digital Library Consortium by Faculty Members and Research Scholars in School of Physical Sciences, Mizoram University: A study**” was conceived whole study was divided in following chapters:

The present study consists of the following chapters:

- Chapter 1: Introduction
 - Chapter 2: Library Consortia with special reference to UGC-INFONET Digital Library Consortium.
 - Chapter 3: E-Resources in Physical Sciences
 - Chapter 4: Data Analysis and Finding
 - Chapter 5: Suggestion and Conclusion
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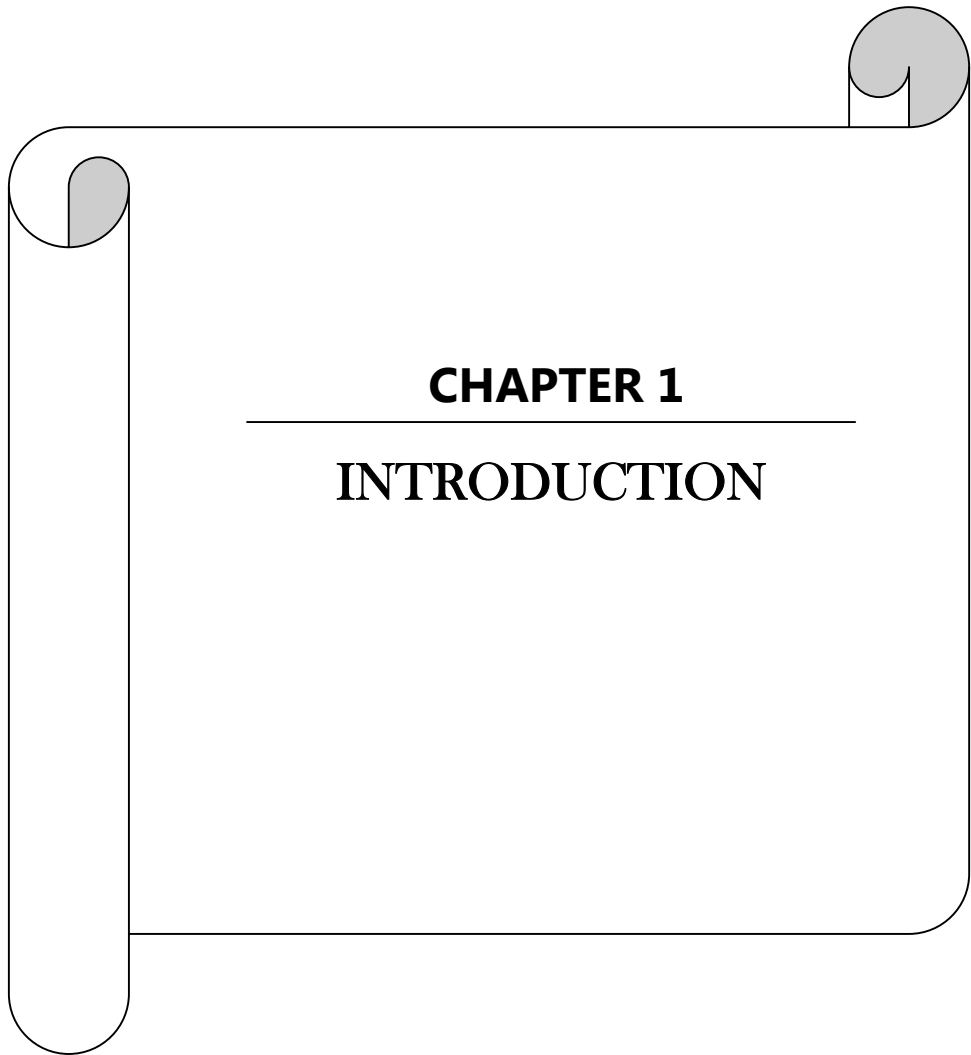
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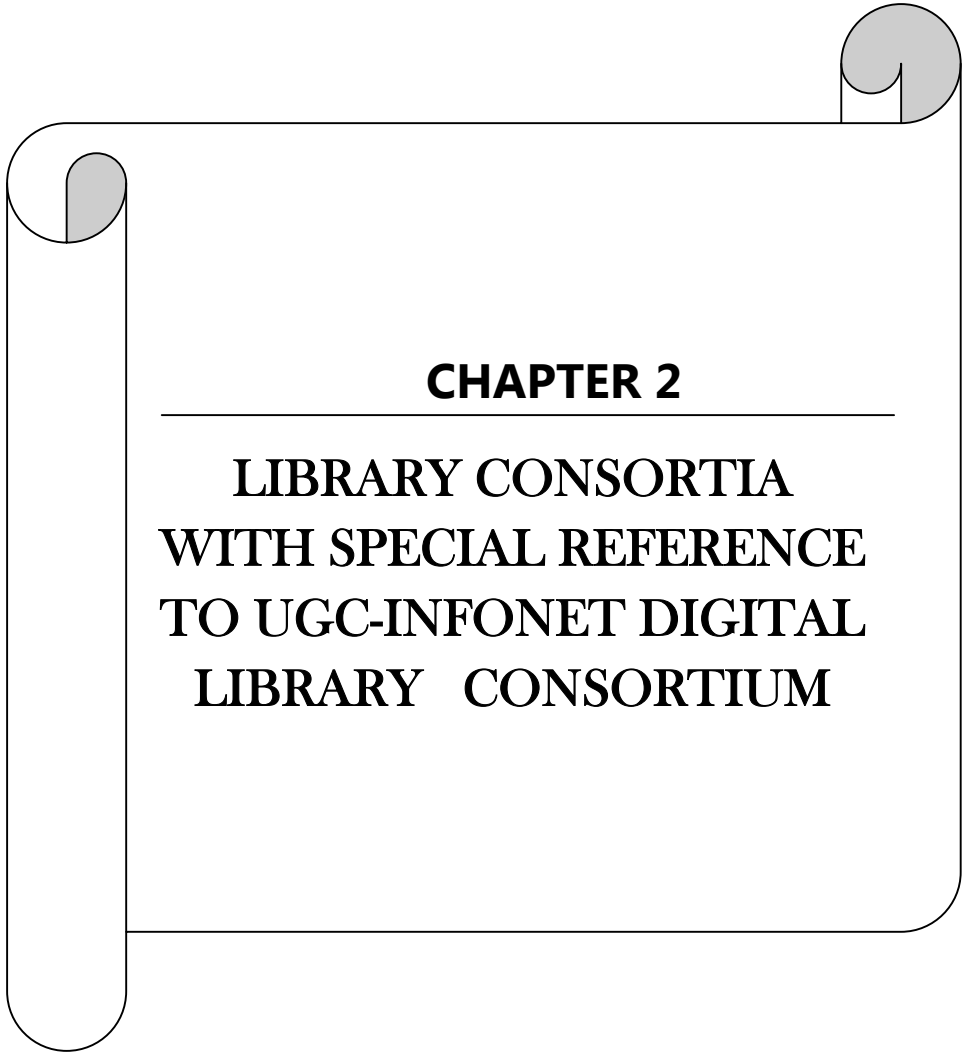
ABBREVIATION

AACR-II- American Cataloguing Rules II, 1978 revision
AIP- American Institute of Physics
APS- The American Physical Society
AHD- American Heritage Dictionary
CD-ROM- Compact Disc Read Only Memory
CCTV- Closed Circuit Television
CBCS- Choice Based Credit System
CSIR- Council of Scientific and Industrial Research
DSIR- Department of Scientific and Industrial Research
ETD-Electronic Thesis & Dissertation
EBB- Electronic Bulletin Board
FORSA- Forum for Research Sharing In Astronomy and Astrophysics
HELINET- Health Science Library & Information Network
ICT- Information Communication Technology
IFLA-International Federation of Library Association
INDEST- Indian Digital Library in Engineering Science and Technology
ILL- Inter Library Loan
JCCC- Journal Custom Content for Consortium
KRC- Knowledge Resource Center
LCD- Liquidified Crystal Displayer
MIT- Ministry of Information Technology
NAAC- National Assessment and Accreditation Council
NDLTD- The Network Digital Library of Theses and Dissertation
PDF-Portable Document Format
PROLA- Physical Reviewed Online Archive
RFID- Radio Frequency Identification
RSC- The Royal Society of Chemistry
SIAM- Society for Industrial and Applied Mathematics
SPS- School of Physical Sciences
UGC- University Grant Commission
URL- Uniformed Resource Locator
WWW- World Wide Web



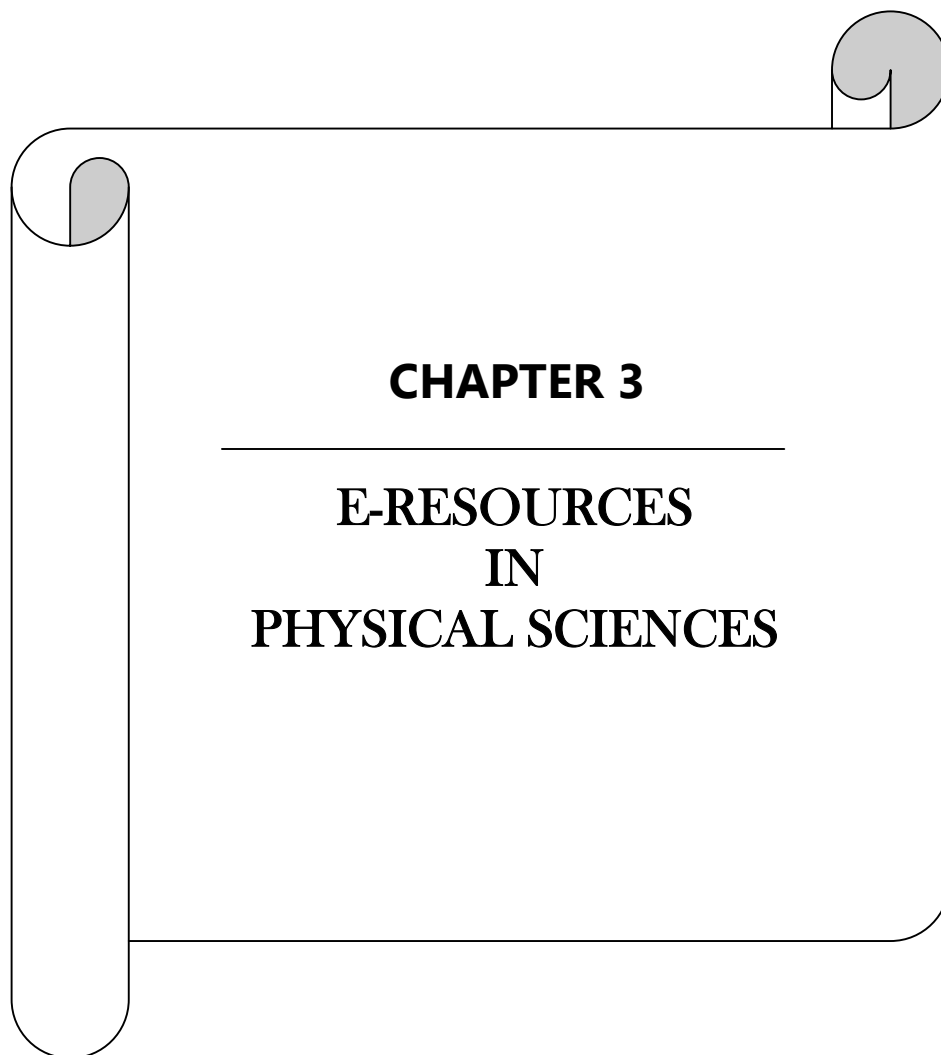
CHAPTER 1

INTRODUCTION



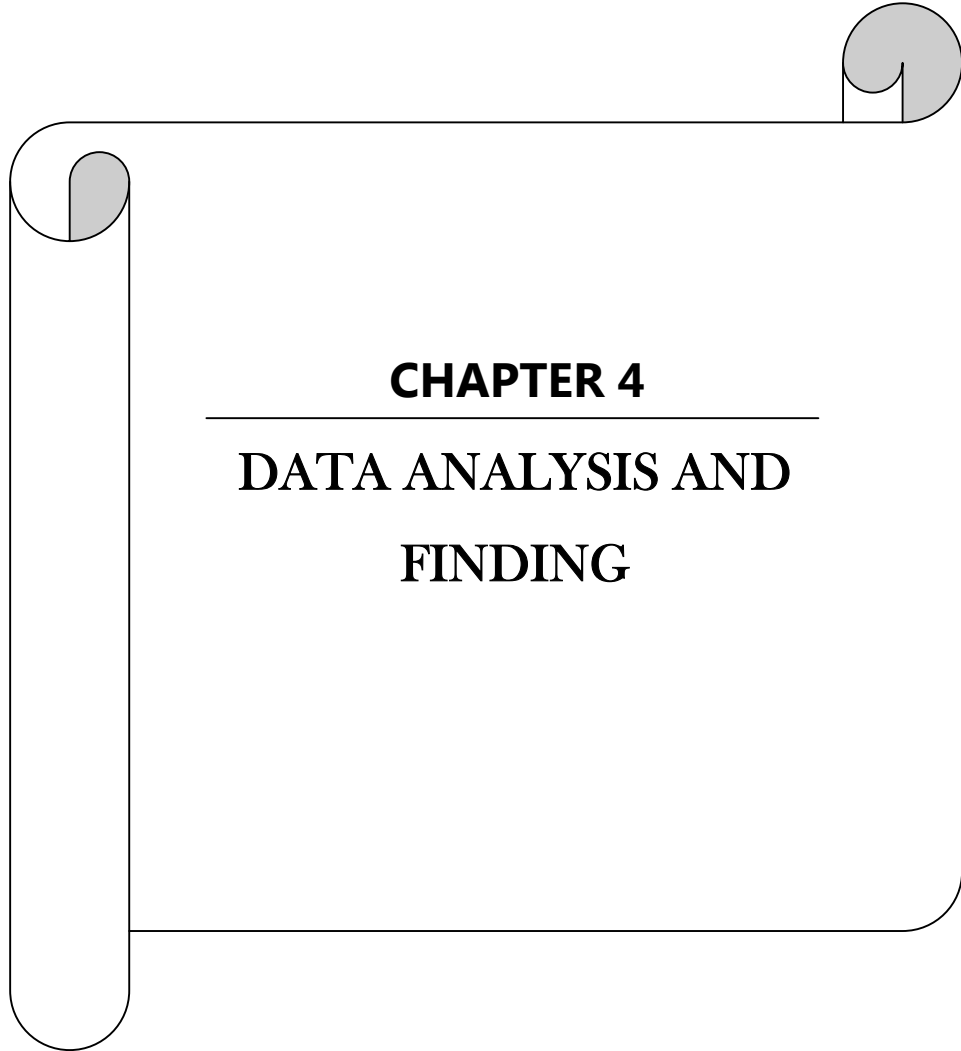
CHAPTER 2

**LIBRARY CONSORTIA
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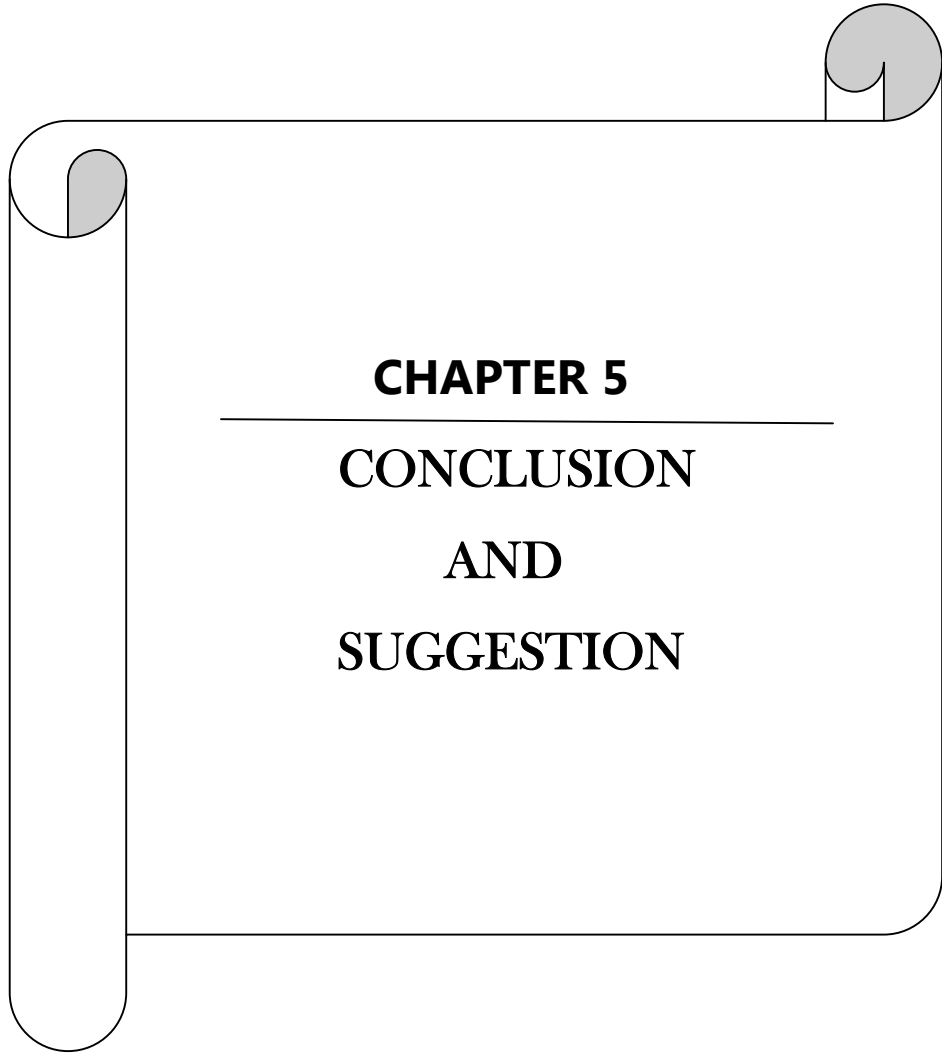
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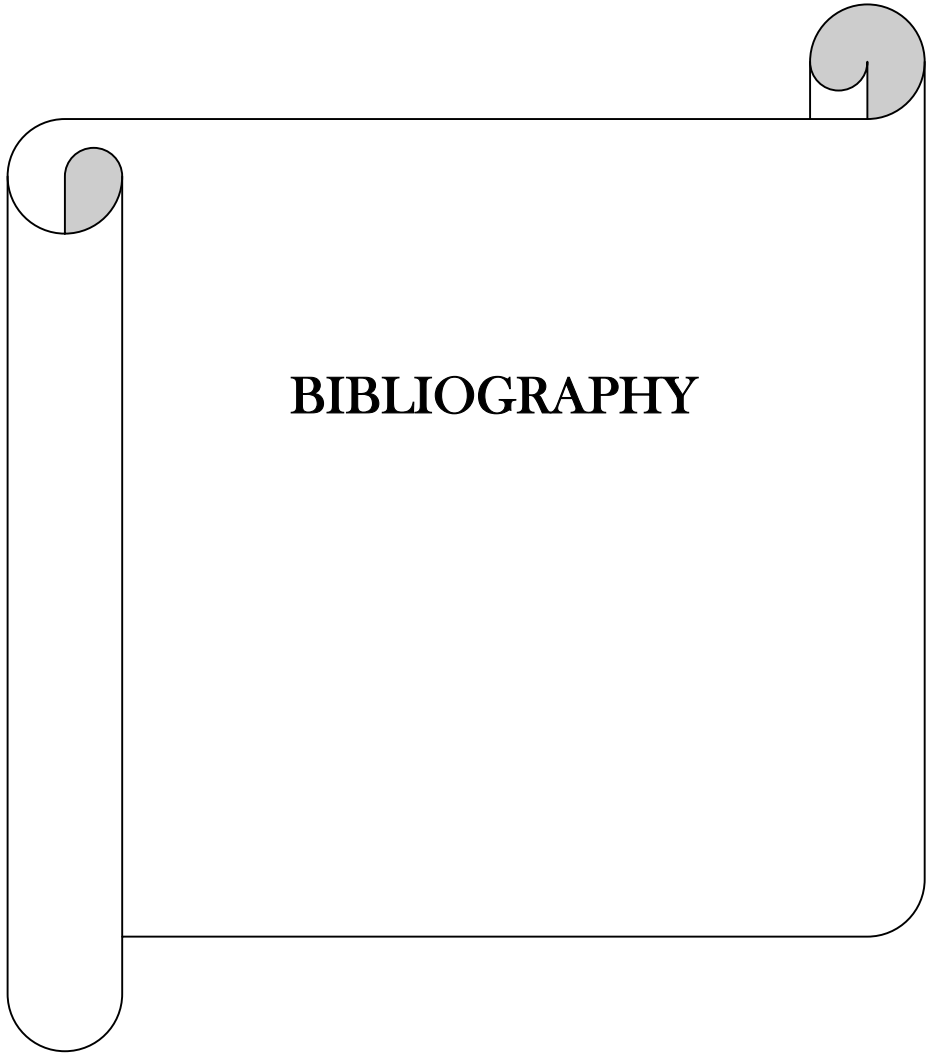


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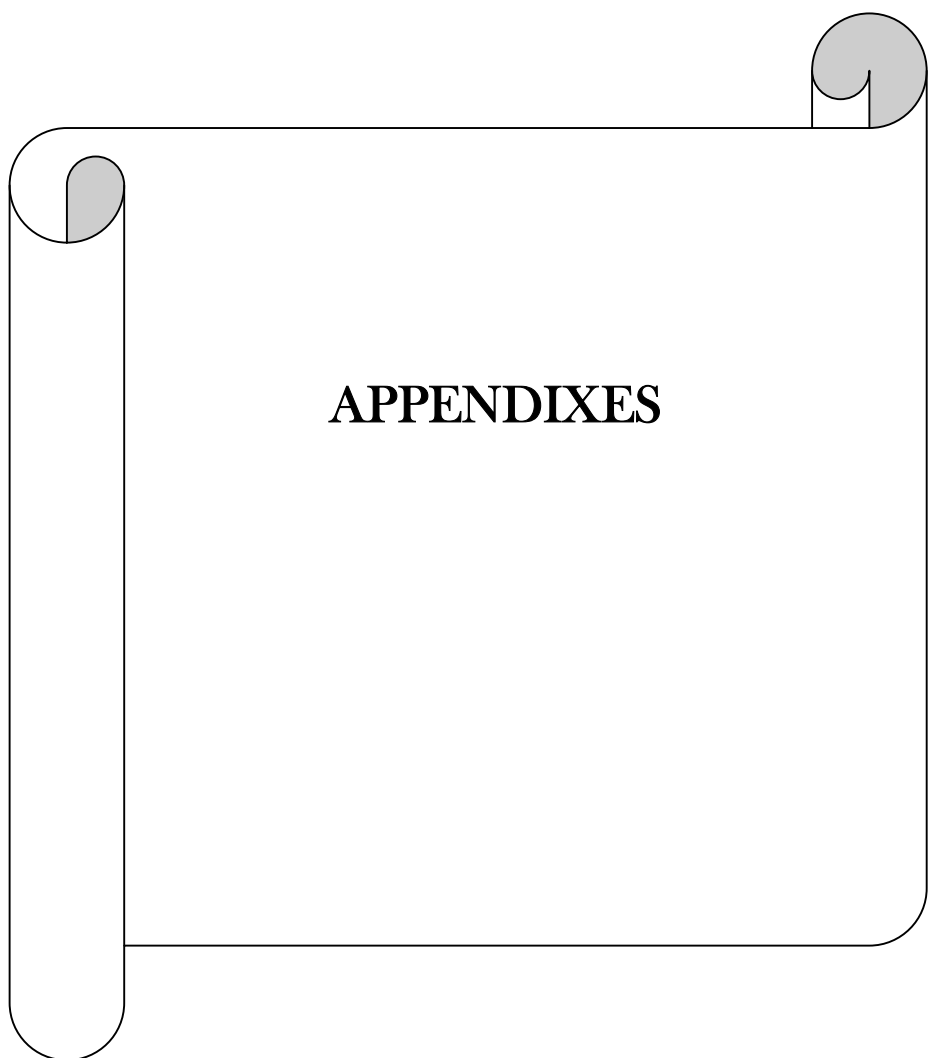
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1.1 Introduction

The scenarios of the world have been changed by the advancement in information technology and Networking. This change has affected each and every aspect of the human society. Technology has changed the outlook of the library collection and its services. In the past the library collections were only in the traditional bound volumes and the Library act as a store house of book. But now the library collection has changed their format. In today's world, the libraries acquire both print as well as electronic resources to provide easy and timely access to its users. These enable the library to performed quality services to its user. The flow of information is infinite and limitless where library can be term as "Library without wall".

However, e-resources have become an important aspect of library and information centers. The most useful type of electronic resources exists in digital form. Within most organizations, documents provide a fundamental and necessary mechanism of communication. They can also embed a number of different types of communication modality and can utilize a wide range of presentation and publication media. The majority of the conventional documents have been published using the medium of paper. The advent of computer has made possible the creation of many new types of documents which are referred to as electronic documents. Such documents exist only inside a computer system in digital format. They are acquired in computer format and published by a central database and distributed by floppy disk, CD-ROM, Hard disk, pen drive etc. or communication link. One significant advantage of e-documents over those that are based on the use of paper is that they can embed many more communication modalities than is possible with conventional documents. These include text, static picture, sound, animation, motion picture and various tactile modes of communication. There are many other advantages to be gained from the use of e-documents. They are accessible without any geographical boundary. The advent of powerful, low cost computer-based technologies is forcing the system designers and library and information professionals to provide the services and facilities that they offer. The use of new technologies within libraries brings many exciting possibilities for the development of new approaches to information storage and access. Global access to e-documents will be provided by an information superhighway.

There is an ever increasing demand for subscriptions and access of more e-journals titles by the user community. To exploit the e-resources fully there also appears to be some need for the users to be provided with training in using the e-resources. The study has enabled the respondents to express their satisfaction and their aspirations for the improvements of the e-resources services of the library. It is a channel of communication for update of knowledge. The shrinking budget allocation to the library compelled to face financial constraints for building outstanding collection development. It is also one of the factors for cut down drastically the current subscription to the journals. In India, several initiatives/the librarian adopted the means of Information Technology to acquire, organize and disseminate the resources to the users' community through electronic form. The e-resources have become indispensable due to proliferation of information. Most of leading university libraries including the Central University libraries has developed collecting e-resources for building of the notion of digital libraries. They however have also developed their own websites giving important features with hyperlink provision. The e-resources are one of features in their webpage where some university libraries provide the users easy and free access to the e-resources. While in some cases, some documentation and information centers allow the users to use the e-resources on payment of minimum fee. In the days before "e-" became a prefix to the word "resources," librarians and their staff were responsible for the collection of resource usage statistics.

In fact, Universities are regarded as the highest places of learning. Therefore university teachers are placed at a higher podium than the teachers of other educational institutions. University teacher are expected to teach post-graduate students and guide and research scholars to contribute for enhancing the horizon of their own subject disciplines. Developments in information and communication technologies (ICT) and access to electronic information resources make these endeavors easier. As facilitators of the teaching and learning process, the university libraries are expected to identify, collect, organize, and distribute both print and electronic resources. However, information explosions, diversity of users' needs and financial crunch have come into the way of information provisioning. The University Grant commission, through its novel program " UGC-Infonet Digital library Consortium" has come forward to help the universities libraries so that they can able to access to large number of scholarly online journals which are made available to the

university users community. At present 277 universities in India covered under UGC-Infonet Library Consortium. The Mizoram University becomes the member of UGC Infonet Library consortium under phase III in the January 2007.

A library consortium is a group of libraries who partner to coordinate activities, share resources, and combine expertise. The phrase library consortium has been used to mean cooperation, coordination and collaboration between and amongst libraries with an intention to share information resources.

Harrod's Librarians' Glossary defines cooperation as "An association of libraries and similar institutions formed for mutual assistance and understanding functions where the sharing of resources or division of costs can be advantageous and efficient."

Allen and Hirshon have explained library consortium as "a generic term to indicate any group of libraries that are working together towards a common goal, whether to expand cooperation on traditional library services (such as collection development) or electronic information services.

It is now used perhaps too broadly, and encompasses everything from formal legal entities to information groups that came together solely to achieved better pricing for purchasing electronic information."

According to Dong and Zou a "library consortium is an association of libraries established by formal agreement, usually for the purpose of improving services through resource sharing among its members."

All educational institutes in India, especially the universities, face acute shortage of funds to subscribe to international scholarly journals. It is estimated that a typical university in India subscribes to less than 200 international journals, while some universities do not subscribe to any international journal. While there are around 50,000 scholarly journals published the world over, all research institutes and universities in India put together had combined subscriptions to only around 1,500 journals in print until a few years ago. Many smaller colleges and institutes subscribe to less than a 100 journals. Most colleges, including those imparting post graduate and doctoral programmes, do not have financial resources to subscribe to any international journal and their subscription list includes only a few Indian journals and some popular magazines. In recent years, the accessibility to international journals in Indian universities and technical institutes has increased many folds with the setting up of a number of Government-funded library consortia which provide access to electronic

versions of scholarly electronic journals. Prior to these consortia, access to e-journals was restricted to premier institutes like IISc, IITs, IIMs and a few Central Universities which were subscribing to a small number of e-resources, including bibliographic databases on CD-ROM, a few e-journals accessible free with subscription to their print versions and a negligible fraction of journals on subscription. After the launch of the 'Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium in 2003' and 'UGC-INFONET Digital Library Consortium in 2004, availability and accessibility of e-resources increased phenomenally in centrally funded technical institutes (IITs, IISc, IIMs, IIITs, etc.) and universities, setting up a new culture of electronic access and browsing in educational institutes.

Library consortium has taken different evolutionary manifestations such as library cooperation; inter library loan, document delivery, library networks, etc. The real drive for library consortium was sent after 1980, when more and more libraries started getting automated and used computers for bibliographic processing activities and database searching. Library consortium facilitates the end users with benefits of more resources that would be available through one library, and library staff can customize the system to meet their individual library's needs. The historic quest for the great comprehensive collection has been superseded by the need to provide access to collective scholarly resources that no single library can afford. Library consortium creates an opportunity to provide enhanced library services by making use of electronic resources, bibliographic databases and services offered through internet and word wide web. The basic premise of consortia is that its member can collectively achieve more than they can achieve as an individual institutions. There are many Libraries consortiums in India are in operation, such as UGC-INFONET Digital Library Consortium, INDEST, CSIR, e-journal Consortium.

1.2 Profile of Mizoram University, with Special reference to School of Physical Science (SPS):

Mizoram University was established as a Central University by an Act of Parliament of India on 25th April 2000 and started functioning from 2nd July 2001. Prior to this; the University inherited from North-Eastern Hill University (NEHU) had functioned as Mizoram Campus for 24 year since 1979. Many prominent persons have studied here and have gone on to a wide range of profession and carriers. The University life is lively and diverse; students come from different parts of the Country. Prof. R.Lalthantluanga, the Vice Chancellor who is the Head of the University. At present Mizoram University comprises with 8 schools of studies and 31 academic departments. There are 30 Professors, 47 Associate Professors and Assistant 118 Professors currently working in Mizoram University, out of a total of 194 faculties as on 1st jan, 2014.

The Central Library, Mizoram University has a total strength of 30 Technical and Non-Technical staff. Dr.Lalremsiami is the officer in charge and Head of the Department of Central Library, Mizoram University. It has continuously been witnessing note worthy development in various spheres. Growth may be seen in its holdings, users and application of technology. The collection by March, 2014 included 95,818 numbers of books, 213 Thesis, 123 M.Phil. Dissertations, 269 Master Degree Dissertations/Project Work and 10,776 numbers of Bound Volumes of Journals. The Library at present subscribes to 226 Journals, 48 General periodicals and 14 dailies (English: 5, Mizo: 8, Hindi: 1). The total Library membership is 2,277 i.e. 270 UG, 1,084 PG Students, 80 M.Phil, 463 Ph.D. scholars, 208 Teachers, 16 Guest Lecturers, 2 Departmental Libraries and 154 Non-teaching staff. During this year, 27,526 books were borrowed by the users and had 28,346 visitors.

The entire library holdings have been made available in machine readable catalogue since 2008; and the computerized bibliographic information of the library holdings have also been available for users' searching throughout the campus through Local Area Network (intranet) using Web OPAC. Automated circulation system using barcode technology has been used since 1st December, 2008 which provides easy and prompt service to the users. Library has been providing lending and reprographic services, Orientation Programmes for newly admitted students of various Academic Departments.

Digitization of Mizoram University's own documents and publications had been pursued for setting up of an 'Institutional Repository' and the same had been hosted on the intranet in May, 2011. The repository provides free access to all types of institutional research outputs within the campus network (Intranet). Computerized Braille System for blind students had been successfully installed and operated since December 2011 in the Library. Besides, implementation of advanced technology in the field of identification, security, tracking and automated handling of Library materials using Electro-magnetic and Radio Frequency Identification (RFID) Library management system in order to improve the efficiency of Library operations had been completed, and started using the system since 21st March 2012. It had been completed horizontal expansion of Library building (Phase II).

New Achievement in Modernization of Central Library during 2013-14 is as below:

- The work of appending existing CD/DVD contents along with the bibliographic record of the book and making it available for the users to easily access the digital data contents from Web OPAC throughout the campus network (Intranet) had been completed in November 2013.
- For enhancing security of the Library, 4 CCTVs had been installed in the vital locations of the building in November 2013 in order to monitor the activity of users as well as to help security of property counter.
- A separate room for accessing and downloading of E-resources by the readers with 15 computers had been created in November 2013.
- Power backup of 100 KW stand alone solar PV power plant – had been installed for uninterrupted power supply.
- The horizontal expansion of Library building (Phase II) is completed in November 2013. Hence, the size of Library building became 4,496.62sq.m.

NAAC Peer team, November 2013 appreciated as 'having good facilities, maintenance and a beautiful library' as well as 'one of the best libraries not only in North East India, but Eastern India'.

1.2.3 Different School and Department function in Mizoram University:

Sl. No.	Name of School	Name of Departments under Schools
1.	School of Economics, Management & Information Science (SEMIS)	Economics Library & Information Science Commerce Management Mass Communication
2.	Education & Humanities	English Mizo Education Hindi
3.	Social Science	Psychology Public Administration History & Ethnography Political Science Social Work
4.	Earth Science & Natural Science Resources Management	Geology Forestry Geography & Resource Management Extension Education & Rural Development Horticulture, Aromatic & Medical Plants Environmental Science
5.	Life Science	Botany Bio-Technology Zoology
6.	Physical Sciences	Physics Chemistry Mathematics & Computer Science
7.	Engineering & Technology	Electronics & Communication Engineering Information Technology
8.	School of Fine Arts, Fashion & Arch	Department of Architecture

Table-1.1 Schools of Mizoram University

1.2.1 School of Physical Sciences:

The School of Physical Sciences became functional (phase wise) during the Xth Plan period and has, at present, 3 departments which form the backbone for higher science education and research in the sciences, especially physical sciences. PG teaching in the Department of Physics started from academic session 2003 – 2004, and the Department of Chemistry from session 2006 – 2007 and the Department of

Mathematics & Computer Science started its teaching programme from session 2007 – 2008. All courses have been framed as per UGC model syllabus and the, with its inception in 2006, has taken the initiative for credit (90 credits) based teaching instructions with input of ‘choice-based credits’ (core + major electives + minor electives). Full fledged Ph.D. programmes commenced from academic session 2007-08 and presently 4 Ph.D.s have been already awarded. Pre-Ph.D. course works of one semester is currently run by all the 3 academic departments under the school. Research and teaching in the School is supported by faculty with varied specializations and experiences which comprises of 4 Professors, 4 Associate Professors and 11 Assistant Professors. The School of Physical Sciences has now occupied its permanent building block which has a separate Dean’s office within the same premises.

1.2.2 Department of Physics:

The Physics Department was the first to be started under the School of Physical Sciences in 2003 with Prof. D.K. Bhattacharjee as the first Head of Department, with Guest Lecturers at present Prof. Zaithanzauva Pachuau, as Head. From the year 2007, the Department had its permanent Faculty with strength of five. Presently, there are 8 Faculty members including one Faculty on lien. At present, M.Sc. (Physics) program has specializations from the third semester in the fields of Condensed Matter and Electronics. The Department also supports academically the B.Tech. (Information Technology/Electronics and Communication Engineering) programme under the SET, Mizoram University.

A four semester CBCS pattern M.Sc. program is being conducted by the Department, with approved student strength of 25 and a good student-teacher ratio to enable personal attention to all students. The Department also provides Ph.D. program in the fields of Solid State Electronics/Theoretical/Experimental Condensed Matter Physics/Environmental Physics and Computational Physics. The Department also conducts Pre-PhD Courses as per the requirement of the UGC for the research scholars. The Department has been actively taking part in the Orientation Courses/Refresher Courses conducted by the ASC, Mizoram University time to time. At present the Department has 16 Ph.D. Scholar, 26 P.G. First Semester and 17 P.G. Third Semester enrolled student.

1.2.3 Department of Chemistry:

Department of Chemistry, Mizoram University was started in August 2006 with the aim of providing advanced Post Graduate (PG) and Ph.D. degree program in Chemistry. The specializations at PG level are being offered in various branches of chemistry viz., Physical, Inorganic, Organic and Analytical Chemistry. The courses are designed (Core Papers + Soft Courses + Open Electives) as Choice Based Credit System (CBCS) as per the suggestions of the UGC. Some of the courses offered (open electives) by the department are useful/interesting to students of other departments/schools as well, which they find as exciting and job-oriented in nature. The Department is supported by the DST-FIST at school level. The present intake of PG students is 25. Similarly, the Ph.D. program is offered in various disciplines of chemistry based on the research interests of existing faculties. At present there are 17 Ph.D. Scholar, 21 M.Sc. (I Semester) and 10 M.Sc. (III Semester) students.

A central instrumental facility, at the University, including the various advanced analytical instruments has been created and functional, for use by all departments of this university and other institutions of the region. Currently, all possible efforts are being made to develop this department as a state-of-the-art facilities centre in chemical/physical sciences in the North-East region.

1.2.4 Department of Mathematics and Computer Science:

The department of Mathematics and Computer Science came into existence in the year 2006 with humble intake of first batch of Post Graduate (Semester I) students from July 2007 with student intake capacity of 20. The faculties of the department are competent having specialized in divergent disciplines of Pure and Applied Mathematics so as to cater to the academic needs of students. The syllabus has been framed on per with various University of the country in close accordance with models prepared by the UGC. In addition to Classroom teaching there has been well thought of programme such as interaction of students and teachers, active participation in seminars. Equal emphasis shall be given for placement of products of the Department in Academic Institution and consulted effort is planned to attract foreign students and teachers in bringing laurels for the Department/University. At present there are 6 Faculty members and 17 Ph.D. Scholar in the Department.

1.3 Library Consortia in India:

It is not possible for one library or information centers to hold the full stock of information resources or to procure all information, which may be in demand by its clientele. Even not a single library or information center can meet the thrust of knowledge of all the readers from its holdings. To solve this problem, library cooperation started long ago, such as interlibrary loan, document delivery, library networks, etc. At present, the more accepted system of resource sharing is called library consortia. Consortia approach is one of the many ways of maintaining cooperation and coordination among the libraries and in fact, it has emerged as the 'state of the art' in library cooperation in recent years. The aim of the consortia is to achieve what the member of the group cannot achieve individually. A consortium is said to be "a cooperative arrangement among group of institution," or "an association or society" (American Heritage Dictionary). Consortia are commonly formed to increase the purchasing power of the collaborating institutions to expand the resource availability and to offer automated services. The idea of consortium is not new. There were instances of several libraries coming together voluntarily for the mutual benefit of respective users just like cooperatives, it was the earliest stage of library cooperation. In the second stage, computerized networks come into vogue for sharing of resources. Till this period, the library resources were mainly in traditional printed format. The networks created their bibliographical databases. The users of the participating libraries could get the required documents from other libraries through document delivery services. With the advent of e-resources, the concept of consortia has been mooted mainly for acquisition of e-journals. As the resources that are procured today through the consortium are mainly e-resources, it has become possible for the users to access and download the required materials without even going through the elaborate process of interlibrary lending. Though library consortia have been created with narrow purpose, these can be turned into efficient instruments for sharing all types of library resource.

Access to resources is now considered more important than the collection building. The consortium facilitates the libraries to get the benefit of wider access to electronic re-sources at affordable cost and at the best terms of licenses. A consortium, with the collective strength of resources of various institutions available to it, is in a better position to resolve the problems of managing, organizing and

archiving the electronic resources. Some of the major issues that address the need for consortium is:

- Indian Universities are finding it hard to maintain the subscriptions even for core journals due to ever increasing cost of the journal subscriptions and also a shrinking budget.
- Academic and research users can now hope to have access to their learned journal articles in electronic form.
- The average number of subscriptions to international journals by Indian universities is very less than the western countries.
- There should be an increase in the availability of information in electronic form with more and more literature published in e-form.
- Reduction in the staff strength and cost savings for library budget would be useful.
- Greater buying and increased access to sources would be beneficial.

1.4 UGC-Infonet Digital Library Consortium:

The UGC-Infonet Digital Library Consortium was formally launched in December, 2003 by Honorable Dr. A.P.J. Abdul Kalam, the President of India soon after providing the Internet connectivity to the universities in the year 2003 under the UGC-Infonet programme. The Consortium proved to be a recipe to university libraries which have been discontinuing subscription of scholarly journals because of "Serials Crisis". The term "serials crisis" refers to exponential and continuing increase in subscription cost of scholarly journals. The crisis is a result of rise in cost of journals much faster than the rate of inflation, increase in number of journals and the paucity of funds available to the libraries. The Consortium provides current as well as archival access to more than 7500+ core and peer-reviewed journals and 10 bibliographic databases from 26 publishers and aggregators in different disciplines. The programme has been implemented in phased manner. In the first phase that began in 2004, access to e-resources was provided to 50 universities who had Internet connectivity under the UGC-Infonet Connectivity programme of the UGC. In the second phase, 50 more universities were added to the programme in the year 2005. So far 209 Universities and 14 National Law schools and Central Universities come under the purview of UGC, and have been provided differential access to sub-scribed

e-resources. These e-resources covers almost all subject disciplines including arts, humanities, social sciences, physical sciences, chemical Sciences, life sciences, computer sciences, mathematics and statistics, etc. The programme is wholly funded by the UGC and executed by the INFLIBNET (Information and Library Network) Centre, Gandhinagar.

The centre has also initiated Interlibrary Loan (ILL) through JCCC (Journal Custom Content for Consortium). The JCC provides article- level access to all article published in journal subscribed by the UGC-INFONET Digital Library Consortium as well as in journal subscribes Under UGC-INFONET Digital Library Consortium. The access of the journals covers through current issues of the journal as well as 10 years back files (from 1997 in the most cases) and from volumes 1 onwards in some cases (American Chemical Society, Institute of physics and JSTOR). All these services are offered to all the member universities covered under phase I, II, III. Users can browse search and download millions of full text articles published in various journals. We have witnessed that there is substantial increase in the usage of e-resources.

It is reiterated that once users became aware of the information sources, they tend to use them. The implication of this is that information sources and services which users are not aware of would be underutilized. Therefore, what is fundamental to library information provision is to create users awareness. Taking to electronic information sources is more to do with the individual user, such as an individual's IT skills, the subject area that he/she teaches or to what extent he/she is following some form of professional development or research. However, it has become imperative to educate user so that they can feel the sophisticated technological information environment user-friendly.

INFLIBNET Centre has been making considerable efforts to create awareness about the 'UGC-Infonet Digital Library Consortium' among the university teachers and researchers since from its inception through workshops; training programmed, seminars, etc.

1.5 Significance and Scope of the Study:

UGC-Infonet Digital Library Consortium facilitates extensive benefits to the research. The resources act as a viable mode to get the information pertaining to the research rich resources in science from multiple journals both national and international are available on UGC-Infonet Digital Library Consortium, which promote the research of an institution. It is recognized as a source of knowledge.

The scope of the present study was limited to faculty members and research scholars of three academic departments (Physics, Chemistry and Mathematics and Computer Science) under School of Physical Sciences (SPS), MZU with details emphasis about awareness and use of UGC-Infonet digital library consortium for their teaching, learning and research purposes.

1.6 Review of Literature:

The Review of Literature is an essential component of a research problem in order to assess the available research output in the form of publications. The present study traced out the following research publication on the topic. The scholar made an extensive survey of literature available in the relevant area of the study to make update with information both available through documentary and electronic including internet. The scholar also has taken proper care to scan the published literature in the concerned area and some of them are included here. The following are the available related literature on the research problem:

Baskaran, C and Kishorekumar, S. (2013). Scholarly Journals access through UGC-INFONET among the faculty members in Alagappa University. *SRELS Journals of Information Management*. Vol. 50 No. 2, pp201- 207.

The paper examined the awareness of scholarly journals of the faculty members available through UGC-INFONET. The study revealed various patterns used by faculty members in Alagappa University, to access scholarly journals through UGC-Infonet. The faculty members also get to acquire the guidance and experience for accessing the scholarly journals from the Library staff and from the senior faculty members. It was found that lack of proper training for accessing e-resources was an obstacle in proper utilization of the UGC-Infonet.

Bharati, M.S.Z. & Zaidi, S Mustafa. (2008). Use of E-Journals and E-Databases of UGC-Infonet Consortium by Faculties Members and Research Scholars of Aligarh Muslim University: A Survey. 6th International CALIBER-2008, University of Allahabad, Allahabad, (February 28-29 & March 1, 2008). pp.529-538.

The authors conducted a study in order to examine what is the extent of influence the UGC Infonet has on the user community in universities. The study deals with how much are our scholars and professors are benefiting from UGC-Infonet and identify the extent of awareness of UGC-Infonet among the users. The study indicates that most of the respondents are not aware of the UGC-Infonet. This is due to lack of training and orientation and proper internet connection. Most of the users of the library prefer to use the printed documents.

Chand, Prem, Th. Satyabati Devi & Chauhan, Suresh K. (2006). Assessment and Evaluation of Usage of UGC-INFONET E-Journal Consortium in North East Universities. 4th Convention: PLANNER-2006, (Mizoram University, November 09-10). pp.351-356.

The authors pursued a study on the growing importance of usage statistics of electronic journals, their increasing use, and in particular universities in North East region. The major result of the study shows that the highest usage is from American Chemical Society, the second from Springer and the third from American Institute of Physics/American Physical Society and the usage is highest in Tezpur University. The author is of the opinion that in order to increase the usage of UGC-Infonet e-journal consortium it is necessary to increase the bandwidth to all the universities to 1 mbps.

Chandel, A.S. (2008). E-Resources and their Management. Prof. Alaka Buragohain Festschrift Volume: Changing Library Scenario in Digital Era. Assam College Librarians Association, Guwahati, 2008. pp.210-224.

The author explained a study on the management of different electronic resources. The study explores the problems associated with electronic collection building, their pricing policies, archiving problem etc.

Chauhan, Suresh K and Mahajan, Preeti. (2014): Use of UGC-Infonet E – resources by Social Science Academics in Indian Universities: An Evaluation Study . *The Journal of Academic Librarianship*, Vol. 40, No. 3; pp. 359 - 366

UGC is providing access to scholarly electronic resources to Indian Universities through the UGC-Infonet Digital Library Consortium. Access to subscribed e-resources is being provided free of cost to member universities. The whole program is funded by the UGC and executed by the INFLIBNET Centre. Now, the UGC-Infonet Digital Library Consortium is in its 11th year and it has been expected that privileged academicians are utilizing available e-resources extensively and optimally. In this paper an effort is being made to assess, how social science faculty working in Indian universities have been using e-resources, what are the problems they are facing in accessing them, and what are the efforts made by INFLIBNET to spread awareness about such an ambitious initiative of UGC among social science faculty members. This paper also highlights some important issues with respect to use, acceptance and planning of this consortium.

Das, Prangya. Sahu, Gopabandhu and Mahopatra, R.K.(2012). Use of UGC-Infonet consortium by research scholars in university of Odhisa: A study. *IASLIC Bulletin*, Vol. 57, No.3; Pp.171- 182.

In recent years, e-resources have become most popular sources of information for the research scholar. The study attempted to find out the usage of e-resources of various publishers available under UGC- Infonet by the research scholars of Universities in Odisha. The study highlighted the problem encounter by the users and suggested some remedial measures for improvement in the access facilities and most particularly increase the e-resources to support their research activities.

Dastforoush, Masoumeh Tajafari and Venkatesha, Y. (2010). Electronic Journals' Usage and User Studies: A Literature Review, *SRELS Journal of Information Management*. Vol. 47, No. 2; pp 141 – 153.

The paper provides a picture of electronic journals usage and users studies. It is valuable for student teachers in Library and Information science field and

especially researchers who want to do research in this field. This review is presented fewer than three headings and nine sub headings.

Hill, Heather and Bossaller, Jenny.(2013): Public Library use of free e-resources. SREL Journals of Library and Information Management, Vol. 45, No.2; pp 45-49

This article describes a multi-method research project examining the use of various freely available online collections and projects, such as project Gutenberg, the Internet Archive, and creative commons licensed e-books, by public libraries. This research begins with the questions what are Library doing with freely available materials? Are there barriers to incorporating them into the collection? What role are Libraries playing in expanding access and awareness of these resources?

Jagdish Arora, Kruti J. Trivedi and Ajit Kembhavi (2013): Impact of access to e-resources through the UGC-INFONET Digital Library Consortium on research output of member universities. *Current Science*, Vol. 104, No. 3; pp 315-317.

In this article, it describes some details of the programme and examines the impact it has made on research and development activity in the universities. The research output data from three citation indices, namely Science Citation Index, Social Sciences Citation Index and Arts and Humanities While increase in research output is evident in all three major subject disciplines, i.e. science, social science and arts and humanities, increase in research output is significantly higher in science, compared to the other two disciplines. published. We also comment on the influence of other factors such as number of researchers and level of research funding on this correlation.

Jana, Sibsankar and Bhattacharya, Udayan, (2008) Towards Understanding Digital Object, *Journal of IASLIC Bulletin*. Vol. 54, No. 3; pp- 147-156.

Present study reveals overall frame work of the digital system in the network environment. The depth study of the different components of digital object is stated. It also encompasses the functioning of Library digital frame works with respect to the uploading of digital information to the digital stores and downloading the same as per user request”.

Joshi, Govind (2006). *Digital Library Initiative in Nort East India with Special Reference to Tocklai Experimental Station, Ahmedabad, INFLIBNET Centre.*

Digitization has become the buzz word in the modern Library and Information Science/Service (LIS). Objectives of digitization, Issues related to with digitization, Indian's initiatives are discussed. Government of India's project, scheme presently available to libraries and individuals for preservation / conservations of rare and old books, documents and other such materials of culture heritage are stated. Toklai's Digitization project is discussed. Details of born digitals documents and database which are Open Sources Resources (OSR) for industrial researchers in plantation crops industry are discussed".

Jyoti, Rakesh Kumar (2012). Use of e-resources by research scholaors and faculty members of the department of geography in Jamia Millia Islamia University: A survey. Conference Proceeding on- *Innovative Challenges in Information Services*, edited by Dr Sangita Gupta; Kutub publication. pp 213-227.

The study showed that the behavior of the research scholars and faculty members were changing very fast and they are giving more importance to electronic versions of documents. With the availability of more resources through the internet with high speed connectivity, the demand for electronic resources in their specific subject is increasing. The importance things were that the collection of e-resources should be properly organized for access them.

Kaur, Amritp. (2011). Impact of Electronic Journals on University Libraries of Punjab and Chandigarh: A Study. *SRELS Journal of Information of Information Management*. Vol. 48, No. 3; pp. 265- 279.

The study examined the impact of e-journals on university libraries in term of resources, staffing, spaces, technical services and equipments. A well structured questionnaire was design to elicit opinions of the librarians. The results of the survey provides useful information regarding impact of e-journal on subscription to e-journals, infrastructure service, staff, space, technical services, photocopy, Inter-library loan, library use and reference service. On

the basis of the results, some suggestions have been put forward for developing e-journals and ensuring their proper maintenance and utilization”.

Kaur, Baljinder & Verma, Rama (2006). Use of Electronic Resources at TIET Library Patiala: A Case Study. *ILA Bulletin*. XLII (3). Pp.18-20.

The authors conducting a study on use of electronic resources at TIET Library, explored the period of time since the user have been using the Internet, the place and type of electronic resources which they prefer to use to access information they need. The study reveals that almost all the users use online information and about 34% users are using online services daily and 37% users use electronic resources for their preparing their project/essay.

Korobil, S., Tilikidou, I. and Delistavrou, A. (2006). Factors that influence the use of library resources by faculty members. *Library Review*. Vol.55, No 2; pp. 91-105.

The authors found that, the great majority of the faculty of Technical Educational Institution (TEI), Thessaloniki, Greece use printed sources more than e-sources, but they also use e-sources quite frequently. The results of this study further indicated that the use of e-sources is higher in the School of Business Administration and Economics among those who hold a PhD degree.

Kumar, Harish. (2014). Use of UGC INFONET Digital Library Consortium Resources by Guru Nanak Dev University Library Users, *Asian journal of Multidisciplinary studies*. Vol. 2, No 8; pp. 171-174.

UGC INFONET Digital Library Consortium is an innovative project launched by UGC to provide access of full text electronic resources and bibliographic databases to the research and academic community in India. The present paper is an attempt to study the usage of e-resources available through UGC INFONET Digital Library Consortium by the Guru Nanak Dev University Library users. 105 questionnaires were distributed to the users and 84 questionnaires were received back for an analysis of the data. The study reveals that the majority of the respondents evaluate UGC INFONET Digital Library consortium as good.

Madhusudhan, Margam (2008). Use of UGC-Infonet e-journals by research scholars and students of the University of Delhi, Delhi: A study. *Library Hi Tech*. Vol. 26, No.3; pp. 369-386.

In this paper the author has focused on the use of e-journals by the research scholars and students in general and Department of Library and Information Science (DLIS) in particular. The study shows that e-journals perform an increasingly important role in research at DLIS. There is an ever increasing demand for subscriptions of more e-journal titles in LIS. There appears to be some need for academics to be provided with training in using e-journals.

Mishra, Rajani and Verma, Manoj Kumar (2012). Management of e-resources in IT-BHU library: Problems and prospect. Conference Proceeding on- Innovative Challenges in Information Services, edited by Dr Sangita Gupta; Kutub publication. Pp 205-212.

The authors studied about management of e-resources in IT-BHU library and found that e-resources were very useful for students, researchers and faculty members to carry out their teaching, learning research activities. IT-BHU library resources were very much utilized by users which were reflected in the statistics of the INDEST-AICTE consortium where IT-BHU was in Top in 2007.

Mukherjee, Bhaskar. Kumar, Prashant. (2010): Use of UGC-Infonet e-resources by research scholars of the Banaras Hindu University, Varanasi: A case study. *Annals of Library and Information Studies*, Vol. 57; pp.39-347

Attempts to identify the users' requirement of online journals in general and to know the use of online journal that are available through UGC-Infonet consortium in particular. A questionnaire survey was conducted amongst 100 Research Scholar of various departments like history, political science, sociology, psychology and economics at the faculty of arts, Banaras Hindu University, Varanasi reveals that there is demand for more e-journal titles although a substantial number of users (61.99%) are satisfied with the existing model of UGC-Infonet consortium. Conclude that comprehensive training on availability and usability would be of great help to the users.

Nikam, Khaiser. and B, Pramodini. (2007): Use of E-journals and database s by the academic community of University of Mysore: A survey. *Annals of Library and Information Science*, Vol. 54; pp. 19-22.

These papers describe the use of e-journals and databases by the user of University of Mysore. Nearly 200 responses to a survey based on the questionnaire has been analyzed and presented. Beside, studying the use of e-journal and databases, the paper also examined the utilization and satisfaction levels of users with respect to the e-resources. The role of Information Communication Division (ICD) of the University of Mysore in informing the users about the availability of these resources is also discussed. Used of Internet as an alternative to the UGC InfonNET Consortium resources I presented.

Noushia, Parveen. (2014). Awareness and Use of UGC Infonet Digital Library Consortium by the Scholars in University of Lucknow. *Journal of Knowledge & Communication Management*, Vol. 4 No. 1; Pp 42-54.

The present study reports on a survey of scholars, who use UGC INFONET Digital Library Consortium for accessing the e-journals and thereby making awareness. It explores how and why they use it. An attempt has been done to determine the problems faced by scholars to use UGC INFONET Consortium. A questionnaire was administered among 100 scholars randomly but the response rate was of 90 percent. Present study also discusses library consortia and its features. The study has enabled the respondents to express their satisfaction level and their aspiration for further improvements in the service. The research focuses on the scholars of University of Lucknow only.

Prathap, Gangan. (2013): E-resources usage and research productivity. *Annals of Library and Information Science*, Vol. 60; pp. 64 – 65.

The best performing Laboratories in CSIR from the point of view of optimally accessing and using e-resources are identified using performance indicators derived from number of scientists in the Laboratory, number of downloads during a persisted window, number of publication during the same window

and the total Citation earned by these papers during a citation windows of one year following the publications window.

Prem Chand, Arora, Jagdish, Naga, Moses M., Pradhan, Dinesh Ranjan. (2008). Access to E-journals through UGC INFONET Digital Library Consortium: A Study of Usage Trends among the Universities of North East India. 6th Convention: PLANNER – 2008 (Nagaland University, November 06-07). pp. 387-399.

The authors have conducted a study on the usage trends of access to e-journals in ten universities of North East India. The result of the study shows that there is an upward trend for using e-resources in these universities. An attempt has been made by the author to calculate the 'cost recovery factor' and the 'average cost per download' of e-resources.

Ravikumar, S. (2008). Preservation and Management of Digital Resources Strategy for Building Electronic Resources Designed for Electronic Libraries. Seminar Proceeding: Changing Role of LIS Professionals in Digital Era. 29-30 Sep. Mizoram University. pp.18-26.

The author in his paper presented a study on the growth of electronic resources and changing collection development policy and storage environment of the libraries with response to changes of the information resources. He has discussed about the selection guidelines, strategy for building electronic resources for electronic libraries.

Sigh, R.K Joteen, Devi, Th Maduri and Raychaudhuri, Arup (2009). Use of Internet based e-resources at Manipur University: A Survey. *Annals of Library and Information Studies*. Vol. 56, No. 1; pp. 55-57.

The survey described on the use of the electronic information focusing on the internet services by the users of Manipuri University Library. It also examined the utilization, purpose, difficulties and satisfaction level of users about internet based e-resources services provided by the library. It is found out that the access of internet is very low, erratic power supply and lack of required full text journals are problems with regard to the use of internet based e-resources.

Singh, S.P. & Sharma, A.K. (2002). Electronic Information Resources in Academic Libraries: Some Key Issues. *Library Progress*. Vol. 22, No.1; pp.43-52.

In the age of Internet, the electronic information sources are very popular and highly cost effective. These are having an edge over the print sources. The author discussed some key issues related to the collection development of electronic information sources in an academic library environment. However, the output of the present study altogether added another representation to the existing literature.

Upadhyay, N and Prasad, HN (2012): Has the on-line resources changed the traditional services of IITs library? *International Journals of Information Research*; Vol. 2 No.1; pp 61-75.

They studied about electronic collections of IITs libraries have been growing steadily in last two decades and it has changed the library services based on print resources. They highlighted the changes in library services and examine the projections of library administrators towards the impact of online resources on the traditional library services.

Thanuskodi S (2012): Use of Internet by the faculty members of arts and science collage in Cuddalore district, Tamilnadu, India: A case study; *International Journals of Information Research*; Vol. 2, No.2; pp 207-225.

This study examines the use of internet by the faculty members of Arts and Science Collages in Cuddalore described by frequency of internet use, purpose of using the internet, use of different internet services and impact of internet on research/teaching. A questionnaire was prepared and sent to 70 faculty members of the collage. The result indicated that 58.62% of respondents access the internet from collage library and 91.37% respondents indicated that research and teaching is the primary purpose for using Internet.

Tiwari, Braj Kishor and Sahoo, K.C. (2011). Infrastructure use of ICT in University Libraries of Madhya Pradesh: Libraries Views. *International Journal of Information Dissemination and technology*. Vol. 1, No.4; pp- 232-240.

The paper studied about the use of ICT Infrastructure in University Libraries of Madhya Pradesh and highlighted the use of ICT has influenced the libraries for its overall betterment. It examines that libraries uses ICT to provide

housekeeping operations, user's services, standardization, manage communication facilities and extension of library activities. University libraries of Madhya Pradesh (MP) are in transition stage in the use of ICT. Survey method has been used in the study to find out the present ICT infrastructure in University libraries and use of ICT in terms of communication facilities, collection, hardware, software, networking infrastructure, housekeeping operations, user's services, training and problem areas of the university libraries. The paper concludes that university libraries of MP are in developing stage in its infrastructure and use of ICT. Lack of proper planning and supervision and frequent change in ICT are the basic hurdles in successful development of ICT in university libraries in MP.

Walmiki, R.H. (2010). Awareness and use of UGC-Infonet digital Library consortium by the faculty members of the Karnataka state universities. *Annals of Library and Information Studies*; Vol 57, March; Pp 33-43.

In the paper, authors examined awareness and use of UGC-Infonet digital Library consortium by the faculty members of the Karnataka state universities and they concluded that Indian universities are fortunate to have access to large number of scholarly publications under the UGC-Infonet digital library consortium without any financial burden on them but the benefits of consortium was not very much satisfactory because it was not reached maximum beneficiaries for various reasons. Only 40% of faculty members in Karnataka state universities are aware and use UGC-Infonet resources.

1.7 Statement of the problem:

The UGC INFONET Digital Library Consortium is established with primary objective to link academician and researchers to academic world through full text journals covering all disciplines of studies. Mizoram University being one of the members of UGC INFONET Digital Library Consortium and it getting a lot of physical science resources through this scheme and it is expected that these resources are very much used by teachers and research scholars of school of Physical Sciences, MZU but till date no study is being conducted regarding awareness and use of UGC-Infonet digital library consortium by the users in school of physical sciences. Therefore this study is very much essential to know “**the purpose of using,**

frequency of use, user's satisfaction and problem faced by users during access” the UGC-Infonet Digital Library Consortium. Therefore, it is necessary to make a study on awareness and use of UGC-INFONET Digital Library Consortium by faculty members and research scholars in school of physical sciences, MZU.

1.8 Objectives of the Research Study:

The objectives of the proposed research work are as to:

1. To find out users awareness about UGC-Infonet consortium and its resources.
2. Ascertain frequency of using the resources.
3. To find out to preferred publishers for searching the full text scholarly journals.
4. To find out the problems faced by users while using UGC-Infonet Digital Library Consortium.

1.9 Research Methodology:

The following methods will be used for data collection and its analysis including interpretation in the study:

1. Questionnaire Method:

One structured questionnaires was framed with adequate questions relating to the study, which was circulated to 19 faculty members and 51 research scholars of School of Physical Sciences in order to obtain required information with regards to awareness, access frequency, use, technical difficulties and level of satisfaction about UGC-Infonet Library Consortium.

2. Interview Method:

To supplement the data, the researcher made personnel visit to the school of physical sciences and conduct random interview to gather data related to the study which help researcher to understand the real situation related to the study.

Under the study, the data collected from the users after receipt, was scrutinized, tabulated and analyzed for inference. Statistical inferences are drawn by using Excel spreadsheet which is data analysis software.

1.10 Chapterisation:

The present study consist of the following chapters

Chapter 1: Introduction

Chapter 2: Library Consortia with special reference to UGC-INFONET
Digital Library Consortium.

Chapter 3: E-Resources in Physical Sciences

Chapter 4: Data Analysis and Finding

Chapter 5: Suggestion and Conclusion

Bibliography

Appendixes

2.1 Introduction:

It is not possible for one library or information centre's to hold the full stock of information resources or to procure all information, which may be in demand by its clientele. Even not a single library or information center can meet the thrust of knowledge of all the readers from its holdings. To solve this problem, library cooperation started long ago, such as interlibrary loan, document delivery, library networks, etc. Over the last several years, the UGC-INFONET Digital Library Consortium has been providing Indian universities with electronic access to national and international scholarly journals. These journals span wide areas of natural and physical sciences, social sciences and humanities, and address a long-standing need of the university community for access to scholarly publications.

2.2 Definition of Consortium:

At present, the more accepted system of resource sharing is called library consortia. A consortium is said to be “a cooperative arrangement among group of institution,” or “an association or society” (American Heritage Dictionary). Consortia are commonly formed to increase the purchasing power of the collaborating institutions to expand the resource availability and to offer automated services.

2.3 Important Library Consortium in India:

Consortia approach is one of the many ways of maintaining cooperation and coordination among the libraries and in fact, it has emerged as the ‘state of the art’ in library cooperation in recent years. The aim of the consortia is to achieve what the member of the group cannot achieve individually. The idea of consortium is not new. There were instances of several libraries coming together voluntarily for the mutual benefit of respective users just like cooperatives, it was the earliest stage of library cooperation. In the second stage, computerized networks come into vogue for sharing of resources. Some of the consortia set up in India are:

2.3.1 Council of Scientific and Industrial Research (CSIR) e-Journal Consortium.

Council of Scientific & Industrial Research, a premier autonomous R&D organization, is a multidisciplinary, multi-location set-up, comprising of 40 laboratories dedicated to research and development in well-defined areas and around 100 field stations, is the major organization under DSIR (Department of Scientific and Industrial Research). India, it symbolizes a culture that links science with society through technology and industrial manufacture. Each of the laboratories have a well established library and documentation center presently known as knowledge Resource Center (KRC) that is also backed up with strategic information support from the National institute of Science Communication and Information Resource (NISCAIR), a constituent establishment of CSIR formed with the merger of INSDOC and NISCOM.



Figure-2.1: CSIR Home page.

2.3.2 Forum for Resource Sharing in Astronomy & Astrophysics (FORSA).

The Forum for Resource Sharing in Astronomy & Astrophysics (FORSA) came into existence in the year 1982 by the efforts of Indian astronomy library professionals, for sharing the resources available in astronomy libraries in the country, which falls under

'Open Consortia', wherein participants are affiliated to different government departments. This is a model where professionals willingly come forward and actively support consortia formation; thereby everyone benefits. As such, FORSA has realized four consortia, viz. Nature Online Consortium; Indian Astrophysics Consortium for physics/astronomy journals of Springer/ Kluwer; Consortium for Scientific American Online Archive (EBSCO); and Open Consortium for Lecture Notes in Physics (Springer). In 2004, this group has extended its membership to Physics and Maths libraries in the country who have common interests to carry forward the aim of FORSA and its activities. Currently FORSA has twelve members and it works towards the goals and services which the founder members have started.

2.3.3 HELINET (Health Sciences Library & Information Network) Consortium.

A Health Sciences Library & Information Network hosted by Rajiv Gandhi University of Health Sciences, Bangalore. HELINET is the first medical library consortium launched in the country with an objective of networking the libraries affiliated to the University to promote resource sharing, especially with reference to international medical journals and databases. The health science education in India and the status of IT and Internet access infrastructure in the health science colleges. HELINET is the first resource sharing network and e-journal consortium in the medical education sector.

2.3.4 INDEST (Indian Digital Library in Engineering Science and Technology) Consortium.

The “Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium” was set up in 2003 by the Ministry of Human Resource Development (MHRD) on the recommendations of an expert group appointed by the Ministry. As a consortium of libraries, it would bring together various institutions receiving financial support from major Ministries/Departments of Government of India, namely the Ministry of Human Resource Development (MHRD), Ministry of Information Technology (MIT), Department of Science and Technology (DST) and its various

departments like Department of Biotechnology, Department of Scientific and Industrial Research, Department of Ocean Development and Department of Environment.



Figure -2.2: INDEST Home page

2.4 UGC-Infonet Digital Library Consortium

2.4.1 Genesis

The UGC-Infonet Digital Library Consortium was formally launched in December, 2003 by Honorable Dr. A P J Abdul Kalam, the President of India soon after providing the Internet connectivity to the universities in the year 2003 under the UGC-Infonet programme. The Consortium proved to be a recipe to university libraries which have been discontinuing subscription of scholarly journals because of "Serials Crisis". The term "serials crisis" refers to exponential and continuing increase in subscription cost of scholarly journals. The crisis is a result of rise in cost of journals much faster than the rate of inflation, increase in number of journals and the paucity of funds available to the libraries. The Consortium provides current as well as archival access to more than 7500+ core and peer-reviewed journals and 10 bibliographic databases from 26 publishers and aggregators in different disciplines. The programme has been implemented in phased

manner. In the first phase that began in 2004, access to e-resources was provided to 50 universities who had Internet connectivity under the UGC-Infonet Connectivity programme of the UGC. In the second phase, 50 more universities were added to the programme in the year 2005. So far 209 Universities including 14 National Law schools and Central Universities that come under the purview of UGC, have been provided differential access to subscribed e-resources. These e-resources covers almost all subject disciplines including arts, humanities, social sciences, physical sciences, chemical Sciences, life sciences, computer sciences, mathematics and statistics, etc. The programme is wholly funded by the UGC and executed by the INFLIBNET (Information and Library Network) Centre, Gandhinagar.

The centre has also initiated Interlibrary Loan (ILL) through JCCC (Journal Custom Content for Consortium). The JCC provides article- level access to all article published in journal subscribed by the UGC-INFONET Digital Library Consortium as well as in journal subscribes Under UGC-INFONET Digital Library Consortium. The access of the journals covers through current issues of the journal as well as 10 years back files (from 1997 in the most cases) and from volumes 1 onwards in some cases (American Chemical Society, Institute of physics and JSTOR). All these services are offered to all the member universities covered under phase I, II, III. Users can browse search and download millions of full text articles published in various journals. We have witnessed that there is substantial increase in the usage of e-resources. It is reiterated that once users became aware of the information sources, they tend to use them. The implication of this is that information sources and services which user are not aware of would be underutilized. Therefore, what is fundamental to library information provision is to create users awareness. Taking to electronic information sources is more to do with the individual user, such as an individual's IT skills, the subject area that he/she teaches or to what extent he/she is following some form of professional development or research. However, it has become imperative to educate user so that they can feel the sophisticated technological information environment user-friendly.

INFLIBNET Centre has been making considerable efforts to create awareness about the 'UGC-Infonet Digital Library Consortium' among the university teachers and

researchers since from its inception through workshops; training programmed, seminars, etc.

The University Grants Commission (UGC) provides funds through INFLIBNET required for providing differential access to various electronic resources subscribed by the Consortium for selected member institutions. The members of core group of Institutions are as follows:

- a. Universities covered under Phase I (50)
- b. Universities covered under Phase II (50)
- c. Universities covered under Phase III (95)
- d. Associate members (204)
- e. IUCs and Other Institution (6)
- f. National Law Schools/Universities (14)

www.inflibnet.ac.in/econ/index.php

Request an Article using JCOCC | Licences and Fairuse | FAQs | Contact Us | Contact Publisher | NLIST: eResources for colleges

UGC INFONET Digital Library Consortium

INFLIBNET Centre An Inter University Centre of UGC

Home | About Us | Members | e-Resources | How to Join? | Operation | UserGuide/help | Troubleshooting | E-RAMS | Search | Downloads

Welcome to Digital Library Consortium

Access to E-resources on Additional IPs

Universities are encourage to purchase additional IP-based bandwidth from any Internet Service Provider (ISP) of their choice. E-resources accessible to you through IP addresses of NNLS/BSNL will also be made accessible on additional IPs assigned to you by your ISP. However, please ensure that you are buying IP-based Internet Bandwidth. Please note that access cannot be provided on broad band internet connectivity.

What's New ?

Access to e-Resources will be continued for all members of UGC-INFONET Digital Library Consortium for the year 2014.

Access to JCOCC is now available through the JGate Plus with new features and enhancements

Current Members (421) See details | Join

Guidelines for conducting User Awareness Programme | User Awareness Programme Report

24x7 Access E-resources all universities and colleges of India

365 days

N-LIST

NLIST: Extending Access to E-Resources to Colleges | INFISTAT: Know Your Usages

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Last Updated (mm/dd/yyyy): 12/10/2014 15:53:52 - © INFLIBNET Centre

Figure – 2.3: UGC-Infonet Digital Library Consortium Home Page

2.4.2 Aims and Objectives

The major aims and objectives of the UGC-Infonet Digital Library Consortium are to:

- Promote and establish communication facilities to improve capability in information transfer and access to provide support to scholarship, learning, research and academic pursuits through cooperation and involvement of concerned agencies;
- Establish information and library network – a computer communication for networking for linking libraries and information centers in universities, deemed to be universities, colleges, UGC information centers, institutions of national importance and R&D institutions, etc. avoiding duplication of efforts;
- Facilitate academic communication amongst scientists, engineers, social scientists, academicians, faculty, researchers and students through electronic mail, file transfer, computer/audio/video conferencing, etc;
- Undertake system design and studies in the field of communications, computer networking, information handling and data management;
- Establish appropriate control and monitoring system for the communication network and organize maintenance;
- Collaborate with institutions, libraries, information centers and other organizations in India and abroad in the field relevant to the objectives of the centre;
- Promote R&D and develop necessary facilities to create technical positions for realizing the objectives of the Centre;
- Generate revenue by providing consultancies and information services; and
- Do all other such things as may be necessary, incidental or conducive to the attainment of all or any of the above mentioned objectives.

In terms of number of users, the UGC-INFONET Digital Library Consortium is the largest Consortium in India with a vision and plan to reach out to all universities and colleges affiliated to these universities, over a period of time. Universities in India were upgraded to 2 Mbps leased line under UGC-Infonet connectivity.

2.4.3 Associate Members of the UGC-Infonet Digital Library Consortium

Success of UGC-Infonet Digital Library Consortium in the universities led to the demand for extension of the Consortium resources to the Universities that are not under the purview of UGC. The center has initiated its Associate Membership Programme with an aim to extend access to e-resources subscribed by the Consortium to private universities and other research institutions. Under the scheme, private universities and other research institutions can enroll themselves as “Associate Member” of the Consortium and subscribe to resources of their choice available through the Consortium. The rates of subscription to e-resources are same as applicable to the Consortium for its core members. Associate members are charged an annual membership of Rs. 5000.00. for the subscription of e-resources in subject to the approval of respective publishers. So far more than 204 members have enrolled as associate members.

2.4.4 Access to e-resources for Walk-in Users

The center has 15 Internet-enabled PCs dedicated for the walk-in users including students and researchers for accessing electronic resources subscribed under the UGC-Infonet Digital Library Consortium. The license agreements signed with the publishers of e-resources provide access to e-resources for “walk-in” users. The INFLIBNET center, as the coordinating agency for the consortium, gets complimentary access to all e-resources subscribed under the Consortium. Students from Gujarat University, its affiliated colleges and nearby universities and colleges are welcome to access e-resources subscribed under the Consortium. Around 1000 users visit the centre every year for accessing e-resources.

2.3.5 Bibliographic Standards, Formats and Protocols

Bibliographic standards and protocols are backbone of bibliographic database and related software. The standards and protocols streamline the implementation of activities, provide utmost quality, consistency and most importantly facilitate interoperability, data transfer and exchange. Utmost efforts are being made to implement all recognized international standards such as Unicode, MARC21, AACR2, ISO2709, NCIP, FRBR, etc. into products and services at the Centre. The centre participates in the activities of NISO

(<http://www.niso.org>), the National Information Standard Organization, ISO (International Organization for Standardization) and BIS (Bureau of Indian Standards) as its member.

2.3.6 Current Status:

The Consortium provides differential access to more than 7000+ core and peer-reviewed journals and 10 bibliographic databases from 26 publishers and aggregators in different disciplines. The programme has been implemented in phased manner. In the first phase that began in 2004, access to e-resources was provided to 50 universities who had Internet connectivity under the UGC-Infonet Connectivity programme of the UGC. In the second phase, 50 more universities were added to the programme in the year 2005. So far 277 Universities come under the purview of UGC, have been provided differential access to sub-scribed e-resources. These e-resources covers almost all subject disciplines including arts, humanities, social sciences, physical sciences, chemical Sciences, life sciences, computer sciences, mathematics and statistics, etc. Besides access to their current issues, most journals are available with their archives from 1997 onwards. Some of the publishers like American Chemical Society, Institute of Physics, and JSTOR provide access to their contents from Vol. 1 onwards. The access to e-resources is IP-enabled for the universities covered under the Consortium. Users in the universities can browse, search, download and print full-text articles relevant to their research and academic work without any restrictions in terms of number of articles that they can download or number of simultaneous users. Multiple users can access the databases and e-journal platforms simultaneously. The INFLIBNET Web Site (<http://www.inflibnet.ac.in>) hosts a search interface to search these journals, their URLs and member institutions.

2.4 List of databases available through UGC-INFONET Consortia

S.No	E-resource name /Titles	Journals
1.	American Chemical Society (ACS)	42
2.	American Institute of Physics	18
3.	American Physical Society	10

4.	Annual Reviews	33
5.	Cambridge University Press	224
6.	Economic & Political Weekly	1
7.	Emerald	29
8.	Institute of Physics	46
9.	JSTOR	2073
10.	Nature	1
11.	Oxford University Press	206
12.	Portland Press	9
13.	Project Euclid	35
14.	Project Muse	493
15.	Royal Society of Chemistry	29
16.	ScienceDirect	1036
17.	SIAM	14
18.	Springer Link	1763
19.	Taylor and Francis	1173
20.	Wiley Blackwell Publishing	908
21.	ISID	1
22.	JCCC	1
23.	MathSciNet	1
24.	SciFindernet	1
25.	Web of Science	1

Table 2-A: List of databases

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3.1 Introduction:

E-Resources have become imperative in libraries due to the spiraling cost of publications, shrinking budget allocations, constraints in acquiring international publications, expansion of staffs, space problems, and above all information explosion. Availability of plethora of e-resources has dramatically altered the nature of collection developments, management and dissemination of services in libraries. Acquisition, organization, dissemination and use of e-resources have altered the magnitude of traditional library system by giving birth to the digital library. Application of technologies has a considerable impact in libraries and information centers. Virtually most of the academic and special libraries, at least in the most developed countries, are now members of networks and different consortia that greatly facilitate the location of sources of information in electronic form and gaining access to them. Card catalogues and other form of services in the libraries have largely been replaced by online catalogue and on-line services respectively. Access to databases of various kinds including e-resources has become a routine job for many libraries. Further, most of the libraries both academic and public have also started adding electronic resources to their collection development through CD-ROM or other forms.

Advances in computer applications during the past few decades have brought radical changes in the way information is gathered, store, organized, accessed, retrieved and consumed. The application of computers in information processing has brought several products and services to the scene. The Internet and the Web are constantly influencing the development of new modes of scholarly communication; their potential for delivering goods is quite vast, as they overcome successfully the geographical limitations associated with the print media. Further, the distribution time between product publication and its delivery has been drastically reduced. The Internet can be used for efficient retrieval and meeting information needs. This is very important for university libraries since most of them call for more and more research work. This important fact is convincing many libraries to move towards digital e-resources, which are found to be less expensive and more useful for easy access. This is especially helpful to distant learners who have limited time to access the libraries from outside by dial-up access to commonly

available electronic resources, mainly CD-ROM, OPACs and Internet, which are replacing the print media.

Libraries have witnessed a great metamorphosis in recent years both in their collection development and in their service structure. Over the last several years, a significant transformation has been noticed in collection development policies and practices. Print medium is increasingly giving way to the electronic form of materials.

The Consortium subscribes to electronic resources covering all major subject discipline being taught in universities. It includes wide variety of materials e.g. e-journals, bibliographic databases, reviews published by scholarly societies, university presses, institutional and commercial publishers. The Consortium subscribes to 19 full-text e resources and 10 bibliographic databases from 23 publishers and aggregators. The member institutions are provided differential access to these resources based on their needs and activity profile as per the recommendation of the National Steering Committee.

- i) Full-text Electronic Resources Full-text electronic resources contain complete articles along with their bibliographic details. The consortium subscribes to full-text e-resources from scholarly societies, university presses, commercial publishers and aggregators including American Chemical Society, American Institute of Physics, Oxford University Press, Cambridge University Press, Cell Press, Springer Link, Jstor, Project Muse, etc. All full-text resources subscribed by the Consortium contain electronic journals.
- ii) Bibliographic Databases Bibliographic databases contain references to articles published in journals, conference proceedings or chapters in books. Most bibliographic databases contain abstracts of the articles along with links to their full-text.

3.2 E-Resources Definition:

E-resources are the electronic products that delivers a collection of data through various means such as, full-text, e-journals, image collections including other multimedia products, numerical, graphical and the products are being marketed by the vendors, publishers etc. on Internet platform. Further, e-resources available through various mode include, CD-ROM, tape etc.

According to IFLA ISBD (ER) 1, ‘an electronic resource consists of materials that are computer-controlled, including materials that required the use of a peripheral (e.g. a CD-ROM player) attached to a computer’ and the items may or may not be used in the interactive mode.

According to AACR2, an electronic resource is, “material data/program encoded for manipulation by a computerized device. This material may require the use of peripheral directly connected to a computerized device or a connection to computer network”.



Figure-3.1: E-Resources

3.3 Types of E-Resources:

There are several types of e-resources which can be recorded as follows:

- ❖ e-journals
- ❖ e-book
- ❖ e-report
- ❖ e-papers
- ❖ e-reference sources
- ❖ databases
- ❖ e-contents
- ❖ e-learning materials

❖ **Electronic Journals (e-journals).**

E-journals refer to journals which are available in electronic format. E-journals are also referred to as ‘electronic publishing’, ‘electronic serials’, ‘online journals’ and ‘electronic periodicals’. Electronic journal is defined as the grouping of information that is sent out in electronic format, which is produced, published and distributed electronically. Electronics journals are electronic version of printed journals accompanied by extensive hyper linking. They can be read both through online and offline. It is the principle source of information and fastest growing segment of the digital collection in most libraries. E-journals can be obtained freely, through subscription, pay per use or through license for access. A physical, printed version also is available in e-format.

❖ **Electronic Book (e-book).**

An e-book has electronic text and that text is represented to the reader visually. The electronic text is saved to a floppy, transferred onto a CD-ROM, downloaded from the Internet or built into a palm-sized digital reader. In general manner e-book describes two different types of electronic books. On the one hand, it could refer to the e-book which requires a piece of hardware, a handheld e-book device created specifically for this purpose, on which to read the digital text. An e-book can also refer to electronic texts which are read on a PC, usually

via the Internet. Amazon.com, SomonSays.com, O'Reilly.com are the best known e-book publishers, suppliers and sellers.

❖ **Electronic Report (e-report).**

Reports are of two types which are produced at the end of the work. The two types of reports include popular reports and technical report. The research report is one of the major components of the research study, which includes hypothesis and well designed and conducted research studies. The technical report is used whenever a full written report of the study is required whether for record keeping or public dissemination whereas, a popular report is used if the research results have any policy implications. The reports are available both ongoing and completed projects electronically which allowed the researcher to generate new concepts concerning to his area of research. E-reports of any type are profusely available which can be accessed through Internet. These act as a substantial tool to promote research activity. E-report is generally aimed at setting up a communitarian repertory to reference material which regard to the development of innovative method in the field of e-learning system for distance learning. It refers to activities of research, experimentation of analysis with regard to the development of innovative methods and contents in the field of e-learning, aiming at setting up a method of distance learning system, combining the use of ICT with tutoring activities, learning groups and transnational virtual study circles.

❖ **Electronic Thesis & Dissertation (ETD).**

Electronic thesis and dissertation or ETDs are defined as those thesis and dissertations submitted, archived, or accessed primarily in electronic formats, which include traditional word-processed (or typewritten and scanned) documents made available in Portable Document Format (PDF), as well as less-traditional hypertext and multimedia formats published electronically on CD-ROM or on the World Wide Web (www). Many libraries are now in the process of digitizing information in an effort to preserve it and to make it more widely available. The

Networked Digital Library of Theses and Dissertations (NDLTD), funded by a grant from the U.S Department of Education, is a collection focused specifically on digitized versions of theses, dissertations and technical papers that began in 1996 at Virginia Tech. The NDLTD reports that more than twenty universities around the world have become official contributing members of the Initiative within just the past year, and nearly twice that number have expressed interest or are taking steps to participate.

❖ **Electronic-Reference (e-reference) Tools.**

Today vendors and publishers are providing users with various reference sources through their website and databases, such as dictionaries, yearbooks, encyclopedias etc. viz, Dictionaries online (www.dictionay.com, www.m-w.com, www.dict.leo.org, www.battleby.com). Handbook online (www.uia.au), etc. In reality electronic reference tools such as encyclopedias, dictionaries, atlases, almanacs and the like offer more and, at the same time, less than their print counterparts. It also offers words games, transcripts from a radio programme about language, and a brief history of English language. It does not offer the reader an opportunity to browse the dictionary, nor does it offer the front and end matter found in its print dictionaries, including how to use dictionary, a guide to pronunciation and a short style guide.

❖ **Electronic Encyclopedias (e-encyclopedias).**

E-encyclopedias and almanacs also offer search capabilities and even hyperlinks leading the reader to a related article, but such tools do not always anticipate users' needs or habits. While updating can be as often as desired, economics rather than a desire to be up to date is more often the driving force. An almanac's print version, for example, may be more up to date and easier to use than some online versions of the same title may vary depending on the company offering access to the title. Online atlases, including those provided by the National Geographical Society, offer up-to-date maps accompanied by related flags and demographic information. The viewer must wait for the graphic to load-

a substantial period as compared with the time taken to turn the pages of print atlases, a weakness mitigated by the free content offered online. In the present scenario, e-encyclopedia is supplemented with webpedia, wikipedia etc. which add substantial value to promote research work.

❖ **Electronic Magazine (e-zine)**

E-zine is the abbreviation for electronic magazine. A periodical application that is stored on a file server and that may be distributed or accessed via a computer terminal is regarded as e-zine. It is also called web-zine. Some sources of e-zine are www.indiatoday.com, www.musicindia.com, www.bestindiansites.com, www.news.sify.com, etc.

❖ **Databases**

Database is a collection of records or a file or a collection of files brought together as a single file commonly accessible by a given set of programs. It is an organized, integrated and often inter-related collection of data, records, files or information. Databases can be divided into three types, i.e. bibliographic database, numeric database and full text database. Bibliographic databases contain bibliographic citation to a document which may include an abstract. Numeric database contain numeric or statistical data and full text databases contains the full text of the publication. The power and value of searchable databases have been developed by the introduction of DIALOG, MEDLINE/MEDLARS etc. Unlike CD-ROM, online indexes and abstracting services can be updated on a daily basis and are often linked to the complete text of the article that has been indexed.

❖ **Electronic Newsletter (e-newsletter)/ Electronic Bulletin Board (EBB)**

E-newsletters are offered by companies and organizations around the world. These newsletters are actually e-mail sent from e-servers, generally as text that the individual's mail reader may convert to another format. The obvious advantage of an electronic newsletter is that it can be sent to

thousands of readers at once without postage. Electronic newsletters will likely grow in number and popularity as ease of access to the internet increases and the related cost decrease. They may be house organs, or they may contain individual contributions brought together by an editor or moderator. There are also electronic newsletters that are not subscription-based but that are available only on the web. These publications are usually less elaborate in design than online newspapers and magazines but recognizable as distinct publications. These online newsletters differ from web pages in that they are serial in nature and generally have archives of past issues. Electronic Bulletin Board (EBB) displays through Liquidified Crystal Displayer (LCD) the current information in a very short form which is meant for general awareness of the public at a large.

❖ **Electronic Newspaper (e-newspaper)**

E-newspapers, may copy the typography of their printed counterparts, even though they are not laid out as the print versions are, and they use frames or sidebars to list contents, on which readers may click in order to go straight to that section. There are photographs and other graphics in online newspapers, and often there are photo archives available online as well. Political and other cartoons are available in the online versions of some newspapers and there are often links to other sites where more of the same cartoons can be viewed or the cartoonist's home page may be visited. Crossword and other puzzles are also available for solving online or for printing and solving the old-fashioned way with a pencil. Online newspapers offer web advertising that is linked to the site so that advertising can see the site visitors' location and make some real connection between the advertising and responses to it. Demographic information about the user may also be available.

3.4. Advantage of e-resources

The emergence of electronic resources has drastically revamped the status of all the libraries and information centers across the world during the last decade. There has been a rapid urge of the user community to get more and more information from electronic resources. With the advancement of the information and communication technology applications, Internet and WWW, Library and Information Centers (LICs) have also shifted their collection from print to electronic resources. Electronic resources offer tremendous possibilities and advantages over print media which includes the ease of use, shareable nature, and availability of internet and universal acceptance of web technology. The enhanced features of online access provide value-addition to these sources.

3.4.1 Multi-access:

A networked product can in theory provide multiple points of access (offices, homes, classrooms, etc.) at multiple points in time (often called '24/7', referring to the fact that the resource is available 24 hours a day, 7 days a week) and to multiple simultaneous users.

3.4.2 Speed:

An e-resource often as being a lot quicker to browse or search, to extract information from, and to integrate that information into other material and to cross-search or cross-reference between different publications.

3.4.3 Functionality:

An electronic version will allow the user to approach the publication and to analyze its content in new ways (for e.g. with a dictionary one would no longer be restricted to searching under headword).

3.4.4 Content:

E-content acts as a solution for developing, managing and publishing content on the web which can be accessible on the Internet platform. Designed for enterprise, government and educational institutions, e-content provides ultimate flexibility through open source. E-content integrates content management, resource management, workflow, collaboration and personalization. With comprehensive support for managing content stored in databases, Extensible Markup Language (XML) repositories, and static files. E-content provides team-based enterprise-wide collaboration, reducing IT burden.

3.4.5 Management:

The management of e-resources otherwise known as Electronic Resource Management (ERM) refers to practices and software systems used by libraries to keep track of important information about electronic information resources, especially internet-based resources such as electronic journals, databases and electronic books. The development of ERM became necessary in the early 2000s as it became clear that traditional library catalogs and integrated library systems were not designed to handle metadata for resources as mutable as many online products are.

3.4.6 Interoperability:

It is a property which refers to the ability of systems and organizations to work together (inter-operate). The term is often used in a technical systems engineering sense, or alternatively in a broad sense, taking into account social, political and organization factors that impact system to system performance. Interoperability becomes a quality of increasing importance for information technology products as the concept that “The network is the computer” becomes a reality. Hence, it is a combination of software and hardware on different machines from different vendors to share data. With the advent of such standards as open Uniform Resource Locator (URL), it is possible to link to another elsewhere.

3.4.7 Storage:

E-storage provides a safe keeping for library data making sure that it can be retrieved properly at the time of need. It is also a remote site backup solution for the storage service subscribers, freeing the user from the worry of critical data loss due to the hardware crashes or unfortunate incidents from natural causes, theft, and break-ins, e-storage service allows to access personal and business data anytime anywhere with the Internet. E-storage is a remote storage at which the user can store and retrieve data via web browser or Storage Sync, a software client on the user's desktop. E-storage includes two principle functionalities such as; Online Storage Service and, Internet Back Services. The feature comprises the following:-

- a). Accessing of data anywhere at anytime with the Internet via the web browser.
- b). File Management features such as back-up, upload, download, delete, move, copy, access control etc.
- c). Upload and download specific files up to a maximum of 5 each time.
- d). Sharing of files.
- e). Encrypt and Decrypt features
- f). Manage users (only for enterprise package), and
- g). Help and guidance to the users.

Electronic resources add lively substance to the modern library's collection and satisfy the varied needs of students, faculty and research scholars with minimum risk and time. Additionally, electronic resources carry the potential power to increase the learning opportunities offered to students in a particular, the interactive and multimedia elements provided by the electronic medium can offer a great variety of learning exercises and making courses much more lively and interactive. These e-resources enable instant feedback to students and facilitate students' ability to understand concept more clearly and easily by providing several supporting and supplementing resources for the courses so that students can visualize the material and its content without facing much difficulty in understanding.

3.5. Important E-Resources in Physical Sciences:

The School of Physical Sciences has been stirring with full text journal, which play a significant role in research and innovation of the scholar and Faculty. The Central Library, Mizoram University subscribe the following full text journal for Schools of Physical sciences to enlighten and strengthen the performance of users in different angle.

3.5.1 American Chemical Society:

The Publications Division of the American Chemical Society provides the worldwide scientific community with a comprehensive collection of the most-cited, peer-reviewed journals in the chemical and related sciences. As reported in 2008 Journal Citation Reports® by Thomson Reuters, the peer-reviewed journals of the American Chemical Society rank #1 in citations or ISI Impact Factor in the seven core chemistry categories as well as eight additional categories ranging from Agriculture and Crystallography to Polymer Science and Nano-science & Nanotechnology. It provides features like Daily or weekly e-mail alerts when individual articles (Articles ASAPSM) from the selected journal(s) of your choice, are released on the web.

Through the consortium ACS is giving access to 38 current full-text e-journals including the ACS Legacy Archives having back files of all the journals from vol.1 issue.1

3.5.2 American Institute of Physics (AIP):

The American Institute of Physics (AIP) is a non-profit corporation chartered in 1931 to advance and diffuse the knowledge of physics and its application to human welfare. An umbrella organization for 10 Member Societies, AIP represents more than 134,000 scientists, engineers and educators and is one of the world's largest publishers of physics journals. AIP's prestigious core journals (journals.aip.org) - many of which are among the most highly cited in their field - form the core of physics literature in libraries worldwide. With their high technical and editorial standards, these publications attract the most vital and

current research papers from the world's leading authorities in fields ranging from chemistry, mathematics, fluid dynamics, and more. AIP's online platform (Citation) hosts more than 1,000,000 articles from more than 170 scholarly publications for 25 learned society publishers, in fields including physics, chemistry, geo science, engineering, acoustics, and more.

The members of the consortium have access to 18 Full text journals (10 AIP and 8 from AIP's member societies) with Archival access from 1997 onwards for most of the journals.

3.5.3 The American Physical Society (APS):

The American Physical Society was founded on May 20, 1899, when 36 physicists gathered at Columbia University for that purpose. . In 1913, the APS took over the operation of the Physical Review, which had been founded in 1893 at Cornell, and journal publication became its second major activity. Physical Review was followed by Reviews of Modern Physics in 1929 and by Physical Review Letters in 1958. Over the years, Physical Review has subdivided into five separate sections as the fields of physics have proliferated and the number of submissions grew. Through the consortium access of 8 Full text journals is available from 1997 onwards. Also the PROLA (Physical Review Online Archive) search engine (which indexes all APS journal material published from 1893 to present) is now freely available to all users.

3.5.4 Annual Review:

Founded in 1932, Annual Reviews provides researchers, professors, and scientific professionals with a definitive academic resource in 37 scientific disciplines. Annual Reviews saves you time by synthesizing the vast amount of primary research literature and identifying the principal contributions in the field. Annual Reviews publications are among the highest cited publications by impact factor according to the Institute for Scientific Information® (ISI).

Access is made available to 33 full text journals and archival access is provided up to 10 years back issues.

3.5.5 The Institute of Physics:

The Institute of Physics is a leading international professional body and learned society, established to promote the advancement and dissemination of physics. The Institute has a world-wide membership and is a major international player in: scientific publishing and electronic dissemination of physics; setting professional standards for physicists and awarding professional qualifications; promoting physics through scientific conferences, education and science policy advice.

3.5.6 The Royal Society of Chemistry:

The Royal Society of Chemistry (RSC) is the Professional Body for chemists and the Learned Society for chemistry. It is one of the most prominent and influential independent scientific organisation in Britain. Through its 45,000 members, including academics, teachers and industrialists, the RSC promotes the interests of chemists and the benefits of chemical science. The RSC's educational activities provide information and training opportunities for both students and teachers. The RSC is extremely active in determining the future of chemical education, seeking to influence Government by submitting evidence to Parliament and anticipating developments in education policy.

The archival access is made available for 23 full text journals with 6 Databases from 1997- onwards. Access is provided to 46 full text topmost journals in the area of physics, and the archival access is made available from Vol.1 issue.1 of all 46 IOP titles.

3.5.7 Science Direct:

Science Direct is a part of Elsevier. Headquartered in Amsterdam, The Netherlands, the company is the world's largest scientific, technical and medical information provider and publishes over 2,000 journals as well as books and secondary databases. There are currently more than 9.5 million articles/chapters, a content base that is growing at a rate of almost 0.5 million additions per year.

Access to Science Direct 10 subjects (1.Biochemistry, Genetics & Mol. Biology, 2. Agriculture & Biological Science 3.Chemistry 4.Computer Science 5.Economics 6.Immunology & Microbiology 7.Mathematics 8.Physics & Astronomy 9.Social Sciences 10.Psychology) collection (1000+journals titles) is provided to 60 universities covered under UGC-INFONET Digital Library Consortium with back-files since 1995.

3.5.8 SIAM: (Society for Industrial and Applied Mathematics)

Inspired by the vision that applied mathematics should play an important role in advancing science and technology in industry, a small group of professionals from academe and industry met in Philadelphia in 1951 to start an organization whose members would meet periodically to exchange ideas about the uses of mathematics in industry. This meeting led to the organization of the Society for Industrial and Applied Mathematics (SIAM). SIAM exists to ensure the strongest interactions between mathematics and other scientific and technological communities through membership activities, publication of journals and books, and conferences. Access to 14 Journals with 1997 onwards back files is made available to 50 member universities.

3.5.9 Wiley-Blackwell Publishing:

Wiley-Blackwell, created in February 2007 by merging Blackwell Publishing with Wiley's Global Scientific, Technical, and Medical business, is now one of the world's foremost academic and professional publishers and the largest society publisher. With a combined list of more than 1,400 scholarly peer-reviewed journals and an extensive collection of books with global appeal, this new business sets the standard for publishing in the life and physical sciences, medicine and allied health, engineering, humanities and social sciences. Access to 908 journals of Blackwell publishing with back files since 1997 is being provided to the members of the consortium.

3.5.10 MathSciNet:

MathSciNet is an electronic publication offering access to a carefully maintained and easily searchable database of reviews, abstracts and bibliographic information for much of the mathematical sciences literature. Over 80,000 new items are added each year, most of them classified according to the Mathematics Subject Classification. Authors are uniquely identified, enabling a search for publications by individual author rather than by name string. Continuing in the tradition of the paper publication Mathematical Reviews (MR), which was first published in 1940, expert reviewers are selected by a staff of professional mathematicians to write reviews of the current published literature; over 60,000 reviews are added to the database each year. Extending the MR tradition, MathSciNet contains over 2 million items and over 700,000 direct links to original articles. Reference lists are collected and matched internally from over 300 journals, and citation data for journals, authors, articles and reviews is provided. This web of citations allows users to track the history and influence of research publications in the mathematical sciences.

Access to MathSciNet has started to 50 universities since 2005 covering files of 1940 onwards.

3.5.11 The Royal Society of Chemistry (RSC):

The Royal Society of Chemistry (RSC) is the Professional Body for chemists and the Learned Society for chemistry. It is one of the most prominent and influential independent scientific organisations in Britain. Through its 45,000 members, including academics, teachers and industrialists, the RSC promotes the interests of chemists and the benefits of chemical science. The RSC's educational activities provide information and training opportunities for both students and teachers. The RSC is extremely active in determining the future of chemical education, seeking to influence Government by submitting evidence to Parliament and anticipating developments in education policy.

The archival access is made available for 23 full text journals with 6 Databases from 1997- onwards.

3.5.12 SciFinder Scholar:

CAS provides pathways to published research in the world's journal and patent literature? virtually everything relevant to chemistry plus a wealth of information in the life sciences and a wide range of other scientific disciplines back to the beginning of the 20th century. Since 1907, CAS has indexed and summarized chemistry-related articles from more than 40,000 scientific journals, in addition to patents, conference proceedings and other documents pertinent to chemistry, life sciences and many other fields. In total, abstracts for more than 23 million documents are accessible online through CAS. SciFinder and SciFinder Scholar desktop research tools can be used to explore and search the CAS Substance identification is a special strength of CAS. SciFinder Scholar is a desktop research tool that provides campus-wide access to the world's largest and most comprehensive databases of chemistry, biotechnology, engineering, life sciences and related sciences from CAS, with an ease of use never before. With SciFiner Scholar as a one single source, you can explore scientific information in several unique ways.

The CAS access is given to 32 universities through SciFinder. The archival access is made available since 1907 onwards

3.5.13 Web of Science:

Web of Science, provides access to the world's leading citation databases. It searches over 10,000 journals from over 45 different languages across the sciences, social sciences, and arts and humanities with back files to 1900. The citations (or footnotes) allow one to navigate forward, backward, and through journal articles and both journal and book-based proceedings. Its Analyze Tool also helps in finding hidden trends and patterns, gain insight into emerging fields of research, identify leading researchers, institutions, and journals, and trace the history of a particular field of study.

The access to Web of Science is provided to 100 universities of the consortium through the N-LIST Programme funded by MHRD.

3.6 Conclusion:

It is very clear that, the advances in computer applications during the past few decades have brought radical changes in the way information is gathered, store, organized, accessed, retrieved and consumed. The application of computers in information processing has brought several products and services to the scene. The Internet and the Web are constantly influencing the development of new modes of scholarly communication; their potential for delivering goods is quite vast, as they overcome successfully the geographical limitations associated with the print media. Further, the distribution time between product publication and its delivery has been drastically reduced. The Internet can be used for efficient retrieval and meeting information needs. This is very important for university libraries since most of them call for more and more research work. This important fact is convincing many libraries to move towards digital e-resources, which are found to be less expensive and more useful for easy access. This is especially helpful to distant learners who have limited time to access the libraries from outside by dial-up access to commonly available electronic resources, mainly CD-ROM, OPACs and Internet, which are replacing the print media. The Central Library, Mizoram University has also witnessed a great metamorphosis in recent years both in their collection development and in their service structure. Over the last several years, a significant transformation has been noticed in collection development policies and practices. Print medium is increasingly giving way to the electronic form of materials.

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4.1 Introduction

UGC INONET Digital Library Consortium is primarily launched to provide access to thousands of full text E-Journals covering a wide range of disciplines for the Academic and Research work being carried at University level. In the changing environment E-resources have already proved to be one of the vital source of information due to multidisciplinary research corroborated with multi dimensional resource requirements of the users and it is rather indispensable in today's electronic environment reason being that, they are more up-to-date, and can be accessed anywhere, crossing all geographical boundaries. Through various search techniques, electronic resources provide extensive links to explore additional resources or related content. Such resources add value while conducting R & D activities. There has been a rapid urge of the user community to get more and more information online. The development of ICT devices, the rapid rise of electronic databases, and modern e-book technologies have altogether changed the entire scenario of informatics. The user attitude to information is gradually shifting from printed documents to electronic resources and thus, it has become an important area of research for the information professionals in India.

Data Analysis and findings are essential for a scientific study and for that the scholar has taken relevant data obtained through the filled-in questionnaire for making analysis and draw inferences. Analysis refers to the computation of certain measures along with searching for patterns of relationship that exist among data groups. The analysis of data in a general way involves a number of closely related operations, which are performed with the purpose of summarizing the collected data and organizing these in such a manner that they answer the research questions. Analysis is the product of insight into the total situation, paying upon the assembled facts and giving them a general significance. Its validity depends more upon common sense, experience, background knowledge, and intelligent honesty of the interpreter than upon conformity to any set rules that might be formulated.

4.2 Analysis and Findings

Analysis reflects the information about the prevailing conditions of the library system of the institutes under study. The investigator adopted two methods of study as already been spelled out in the methodology i.e.

- (i) the questionnaire method and
- (ii) Interview method for primary data collection. Altogether, 70 questionnaires were distributed to the Faculty and Research Scholars of the School of Physical Sciences. Out of which 59 filled questionnaires were received i.e. 84.28%.

4.3 Analysis of Responses:

It is very important to know about respondent of the study. The analysis of responses received from respondent has been discuss in Table no 4.3-A to 4.3-D. As already discuss that total 70 questionnaires were distributed among the faculty and research scholars in school of physical sciences and finally 59 responses were received which constitute 84.28%.

4.3.1 Department wise analysis:

Departments	Questionnaire Circulated	Questionnaire Received
Chemistry	24	20 (29%)
Physics	23	20 (28%)
Mathematics & Computer Science	23	19 (27%)
Total	70	59 (84%)

Table -4.3-A: Department wise responses

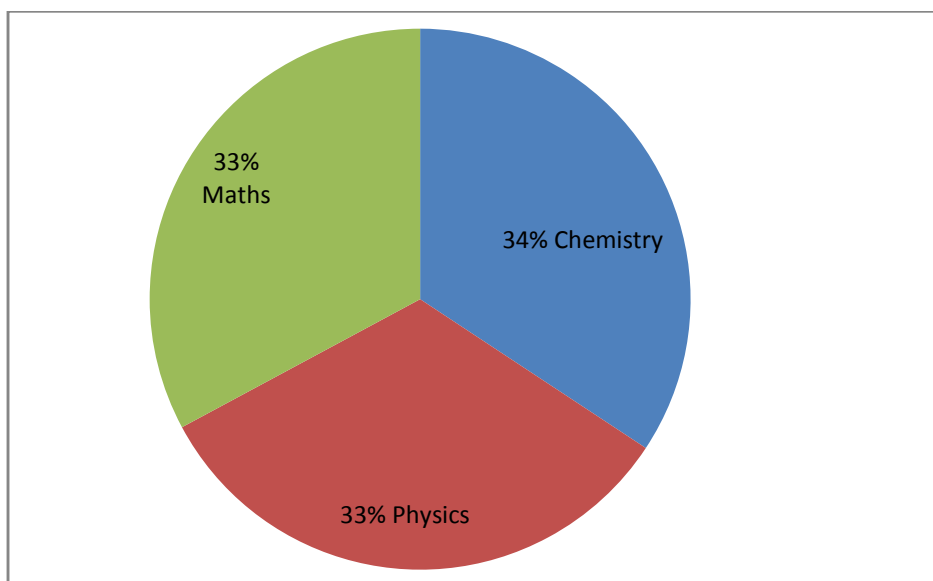


Figure-4.3.1: Analysis by department wise responses

Analysis shows that among 59 (84%) respondents, 20 (28%) were from Chemistry, 20(28%) from Physics and 19(27%) from Computer science and mathematics departments. The department wise response was 33% from Mathematics and Physics while 34 % from Chemistry department.

4.3.2 Designation wise Analysis:

Designation	No of Respondent	Percent
Research Scholar	45	76 %
Assistant Professor	8	14%
Associate Professor	1	2%
Professor	5	8%
Total	59	100%

Table-4.3-B: Designation wise Analysis of Respondent

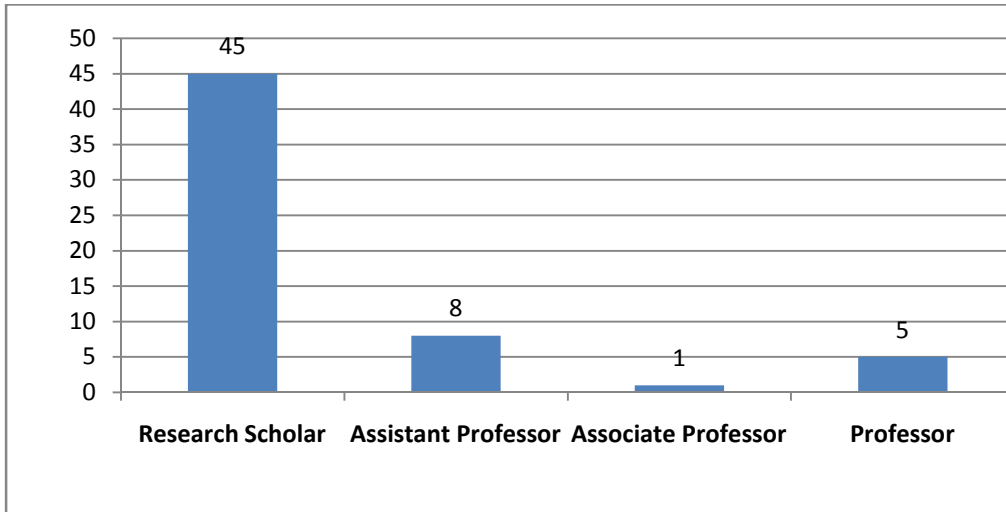


Figure.4.3.2: Designation wise representation in respondents

Table5.2-B shows the designation wise analysis of respondent and resolved that majority of respondents under the study were Research Scholars (76%), followed by Assistant Professors (14%) and Professors (8%) while Associate professor was only 2% among the respondents.

4.3.3 Gender and Age wise distribution of Respondents:

Gender	No of Respondent	Percent
Female	18	31%
Male	41	69%
Total	59	100%

Tabl-.4.3.C: Gender wise distribution

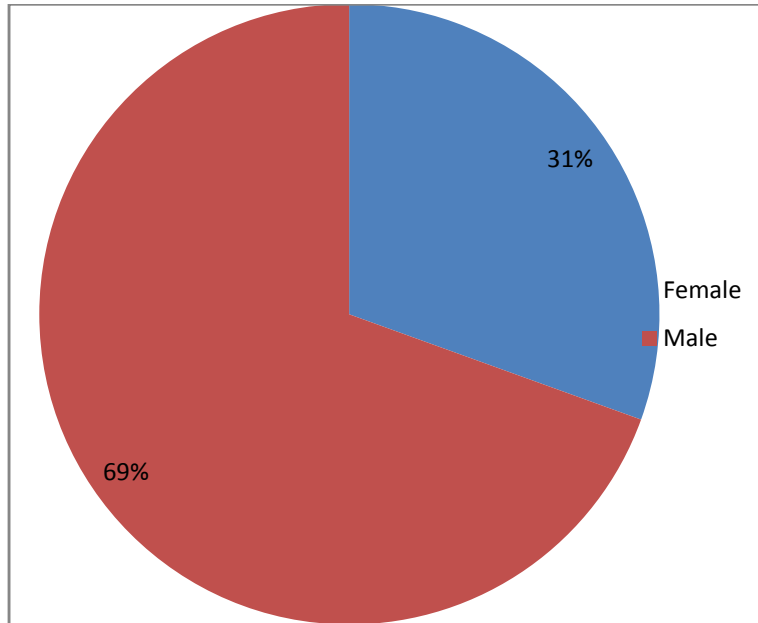


Figure-4.3.3: Gender wise distribution of respondents

Age wise distribution of respondents:

Age Group	No of Respondent	Percent
below 35 yrs	47	80%
between 36-45yrs	6	10%
between 46-55	5	8%
56 year above	1	2%
Total	59	100%

Table-4.3-D: Age wise distribution of respondents

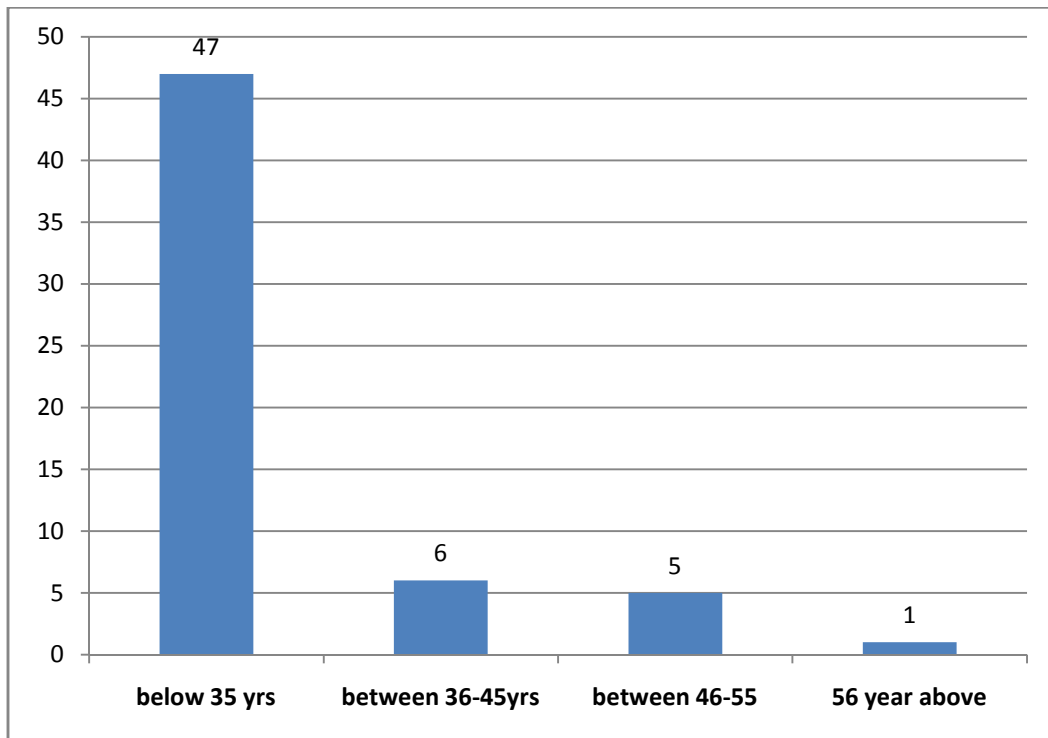


Figure-4.3.4: Gender wise representation in respondents

After Gender and Age wise distribution of Respondents analysis it was resolved that majority of respondents (69%) were male and only 31% were female respondents and among them 80% are below the age of 35. There were 10% respondents between the age of 36-45 and 8% were between 46-55, while only one respondent are above 56 years age in the respondent.

4.4 Duration and Frequency of Library uses and Adequacy of Library collection:

4.4.1 Duration of Library uses by respondents:

Time Duration	Faculty	Research Scholars	Total
Less than 1 years	0 (0%)	3 (6%)	3(5%)
2-4 years	3 (21%)	35 (77%)	38(64%)
5-7 years	7 (50%)	7 (15%)	14 (23%)
More than 8 years	4 (29%)	0	4(6%)
Total	14	45(100%)	59(100%)

Table: 4.4-A: Duration of Library uses

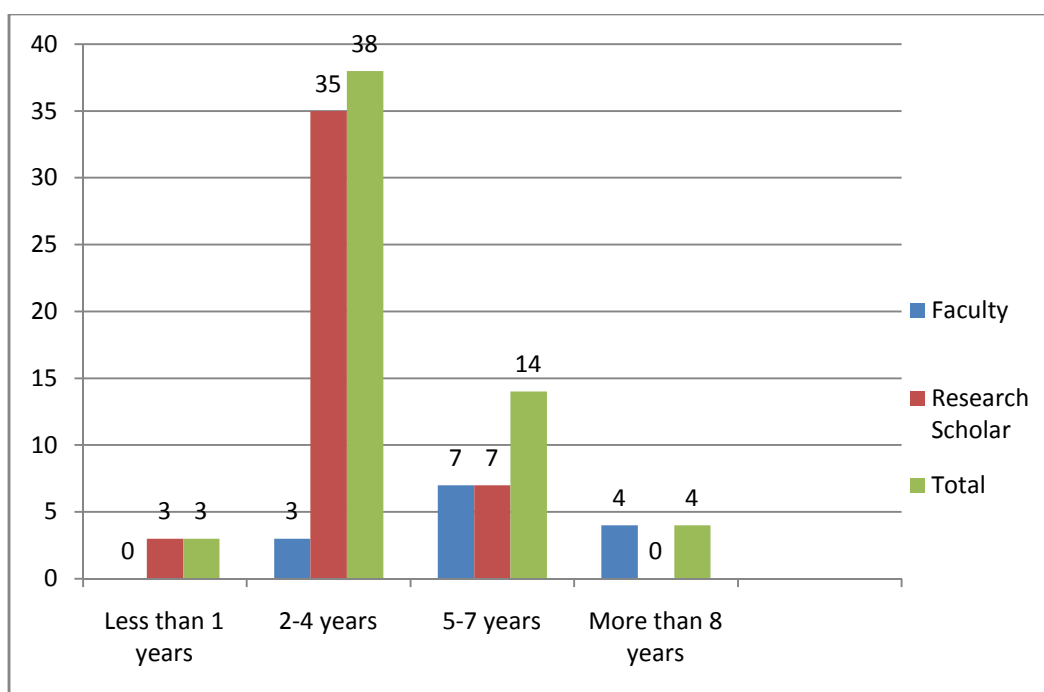


Figure- 4.4.1: Duration of library uses by respondents

The table 4.4-A reflect the duration of library uses by respondents and it was resolved that 64% respondents were using library from 2-4 years which followed by 23% respondents who were using library last 5-7 years. Only 5% respondent are using library less that one year and 6% were more than 8 years. Among the faculties 50% respondents were using library last 5-7 years while majority of research scholars (77%) were using library between 2-4 years.

4.4.2 Frequency of Library uses:

Frequency of Visit	Faculty	Research Scholar	Total
Daily	0 (0%)	9(20%)	9(15%)
Weekly	1 (7%)	8(18%)	9(15%)
Monthly	2(14%)	3(7%)	5(9%)
Occasionally	11(79%)	25(56%)	36(61%)
Total	14(100%)	45(100%)	59(100)

Table-4.4-B: Frequency of Library uses

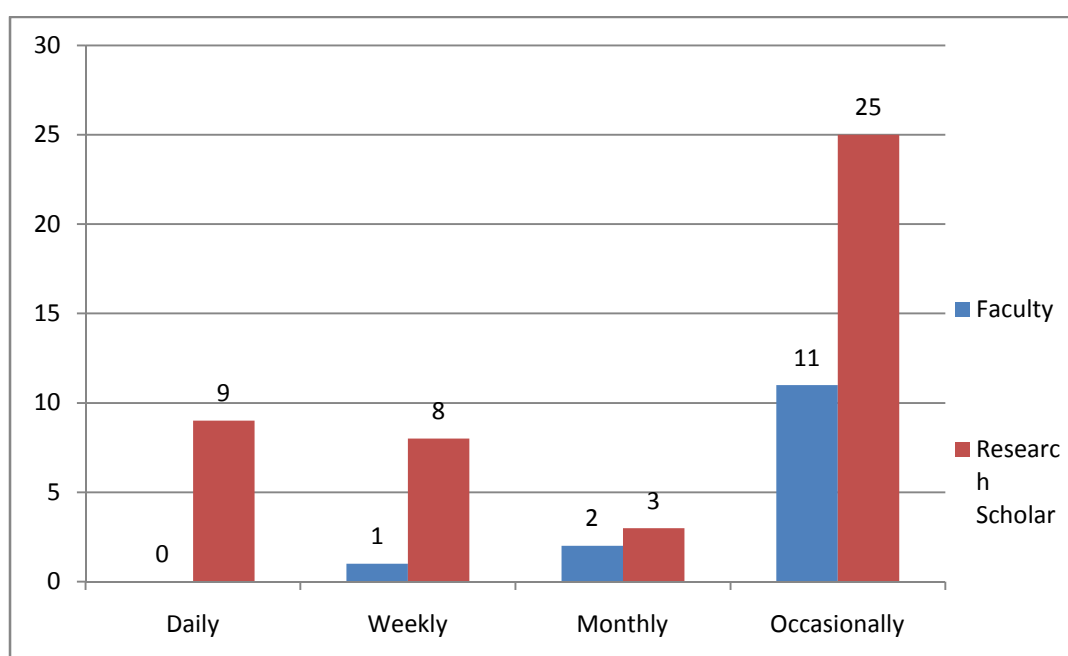


Figure-4.4.2: Frequency of library uses

The frequency of library visit was a parameter to measure the utilization of library resources as well as the satisfaction of users about library collection and services. Table-4.4-B shows the frequency of library visit by respondents and it was resolved that majority of respondents (61%) occasionally visited the library. Only 9(20%) research scholars visited library daily while there was no single faculty visited library daily. Only one faculty visited library weekly and 2(14%) monthly while 79% faculties were visited library occasionally. 56% of research scholars were also visited library occasionally, 8(18%) weekly and followed by 3(7%) monthly.

4.4.3 Purpose of Library Visit:

Purpose	Faculty	Research Scholar	Total
To borrow/return books	12(86%)	40 (90%)	52(88%)
To study	0(0%)	3(6%)	3(5%)
To read periodicals	2(14%)	2(4%)	4(7%)
Total	14(100%)	45(100)	59(100%)

Table-4.4-C: Purpose of Library Visit

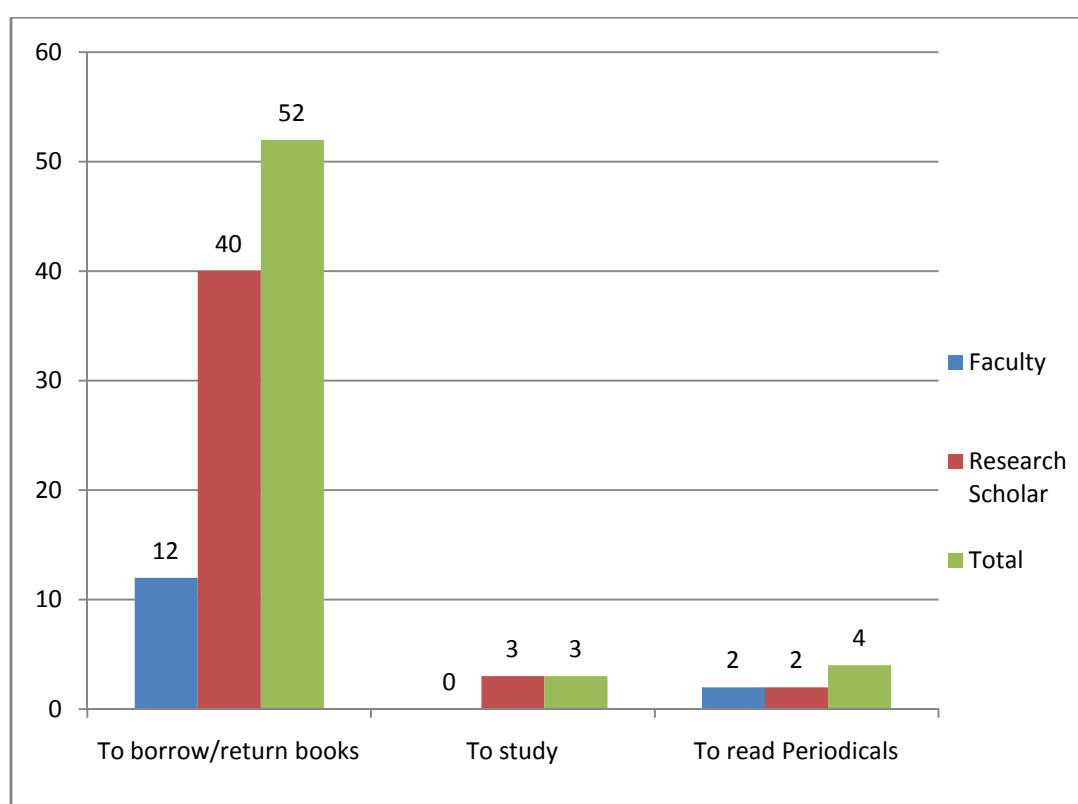


Figure-4.4.3: Purpose of Library visit

The purposes of library visit are the important an important aspect of research. Table-4.4-C shows the purpose of library visit of the respondents which was followed by Figure 4.4.3. After analysis it was resolved that 88% of faculties and 90% research scholars visited library only for issue and return of books and 3(5%) respondent went library for study which did not include any faculty. 2(14%) faculties and 2(4%) research scholars visited library to read periodicals.

4.4.4 Adequacy of Library Collection:

Adequacy	Faculty	Research Scholar	Total
Adequate	6(43%)	29 (64%)	35(59%)
Not Adequate	8(57%)	16 (35%)	24(41%)
Total	14(100%)	45(100%)	59 (100%)

Table-4.4-D: Adequacy of library materials in Library

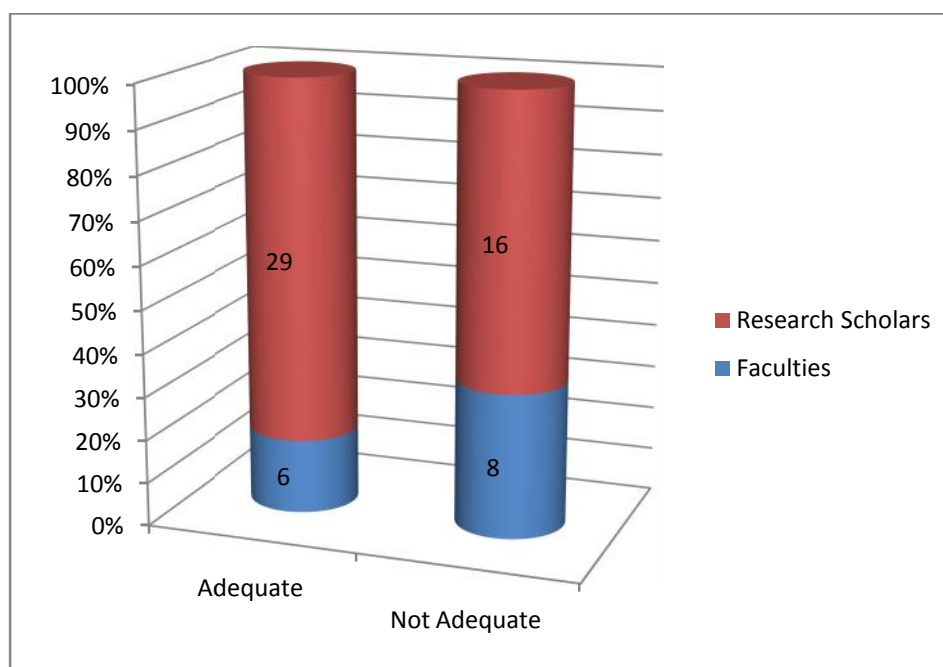


Figure-4.4.4: Adequacy of library materials

Adequacy of library materials reflected the satisfaction level among users about library collection and services. Table-4.4-D shows about adequacy of library materials which was followed by figure-4.4.4. After analysis it was resolved that faculties were not satisfied with library materials and 57% faculties feel that library materials are not adequate in library while 64% research scholars were satisfied with library collection. Among the total respondent, 59% are satisfied with library materials adequacy.

4.5 Use of Resources

4.5.1 Preferred information sources used by Respondent

Source	Faculty	Research Scholar	Total
Print Source	10(72%)	41(91%)	51(86%)
Web Source	1(7%)	0(0%)	1(2%)
On-Line Source	2(14%)	3(7%)	5(9%)
Bulletin Board	1(7%)	1(2%)	2(3%)
Total	14(100%)	45(100%)	59(100%)

Table-4.5-A: Preferred information sources used by Respondent

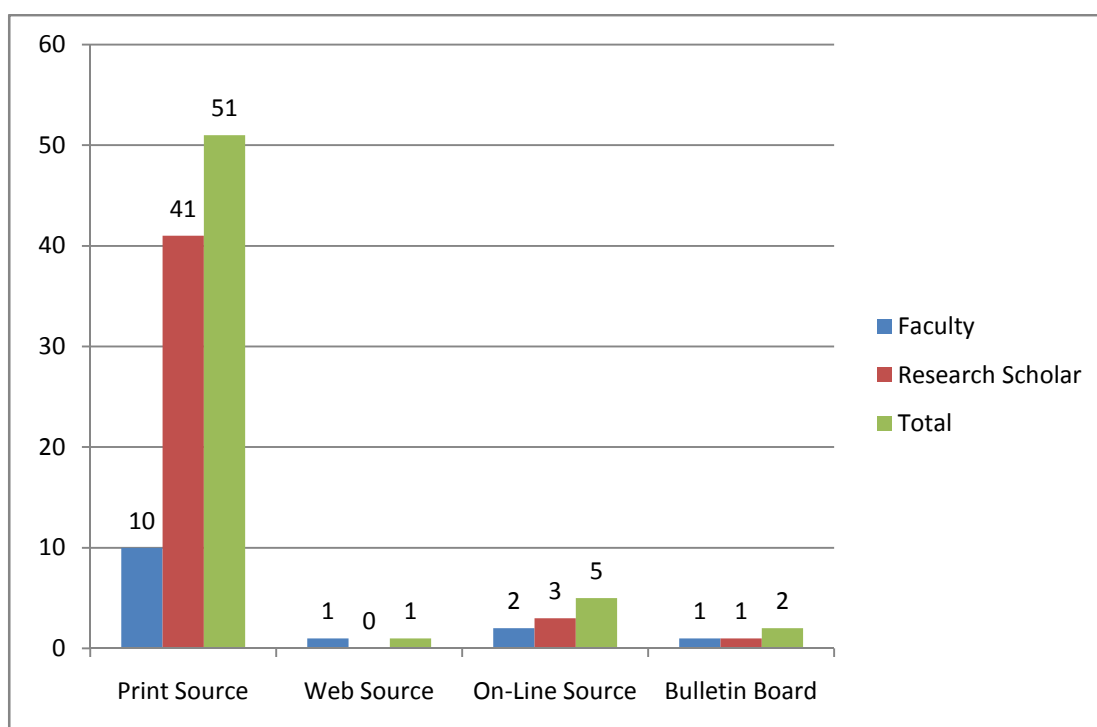


Figure-4.5.1: Preferred source of Information

To fulfill the information needs, the users consulted different type and source of information. The use of resources was asked to indicate the type of resources which they prefer to use to fulfill their information needs. Table-4.5-A supported by figure-4.5.1 reveals the preferred type of information resources used by respondents. The table further resolved that print sources are most preferred source of information by 51(86%) respondents which constituting 10(72%) faculties and 41(91%) research scholars.

4.5.2 Uses of Electronic Resources

Use of electronic resources	Faculty	Research Scholar	Total
Yes	10 (71%)	33(73%)	43(73%)
No	4(29%)	12(27%)	16(27%)
Total	14(100%)	45(100%)	59(100%)

Table-4.5-B: Uses of electronic resources

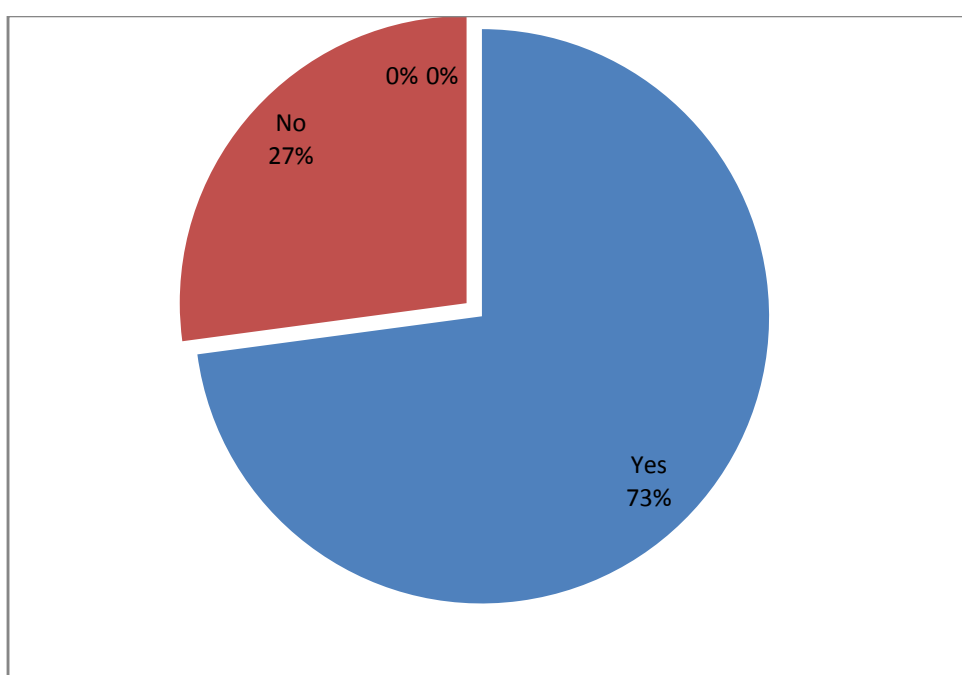


Figure-4.5.2: Uses of electronic resources

The uses of electronic resources are increasingly become important day by day because they are up-to-date, reliable and globale accessibility. Its add a lot of value in conducting R&D activities. The table-4.5-B, supported with figure-4.5.2 reveals the use of e-resources by respondents and found that 43(73%) respondents which constituting 10(71%) faculties and 33(73%) research scholars were using resources while 16(27%) respondents were not using electronic resources for their academic purpose.

4.5.3 Source to awareness about online resources

Source	Faculty(N=10)	Research Scholar (N=33)	Total (N=43)
Search content according to requirement on search engine	6(60%)	24(73%)	30 (70%)
Browse table of content of online journals	2(20%)	4 (12%)	6(14%)
Received table of content through email-alert services	1(10%)	1(3%)	2 (5%)
Through discussion list/forum	1(10%)	4 (12%)	5(11%)
Total	10(100%)	33 (100%)	43 (100%)

Table-4.5.C: Source of awareness about online resources (N=43)

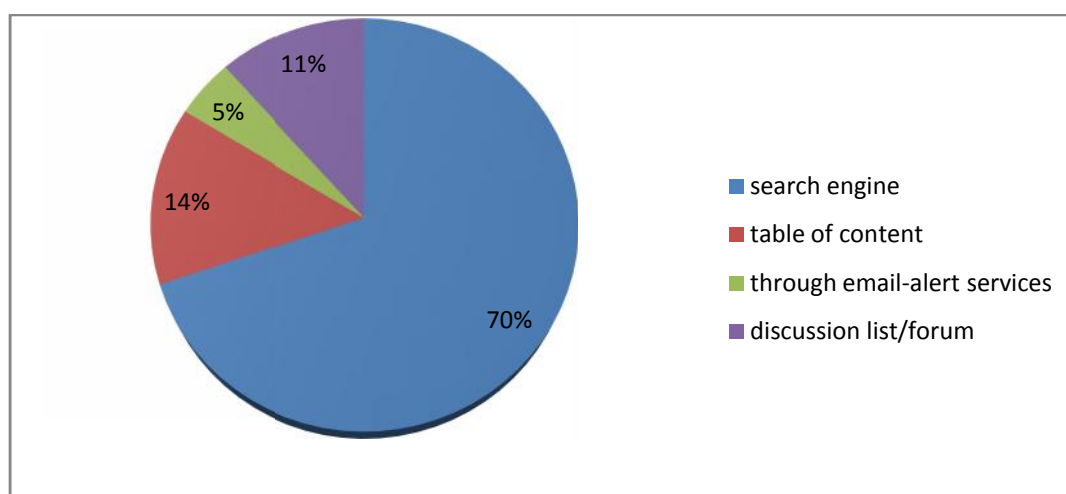


Figure-4.5.3: Source of awareness about online resources

Due to lot of diversity in electronic resources, the awareness about e-resources is very important because without knowing source, it is very difficult to find relevant information. Table-4.5-C, supported with figure-4.5.3 described the way to know about e-resource information and found that search engine was most favorable way to find out e-resources by respondents. Total 30 (70%) respondents which constituting 6 (60%) faculties and 24(73%) research scholars were search content according to requirement on search engine while 6(14%) respondents browse table of content of online journals and 5(11%) got information about e-resources through discussion list/forum .Only 2(5%) respondents got email-alert services about e-resources.

4.5.4 Preferred way to access electronic resources:

Brows through	Faculty (N=10)	Research Scholar (N=33)	Total (N=43)
Search engine (eq. Google)	5 (57%)	16(49%)	21 (49%)
Open access journal Directory	2 (43%)	10 (30%)	12 (28%)
Library Website	1(36%)	2 (6%)	3 (7%)
UGC-Infonet Consortium	2(36%)	5(15%)	7 (16%)
Total	10 (100%)	33 (100%)	43(100%)

Table-4.5-D: Rout to access electronic resources

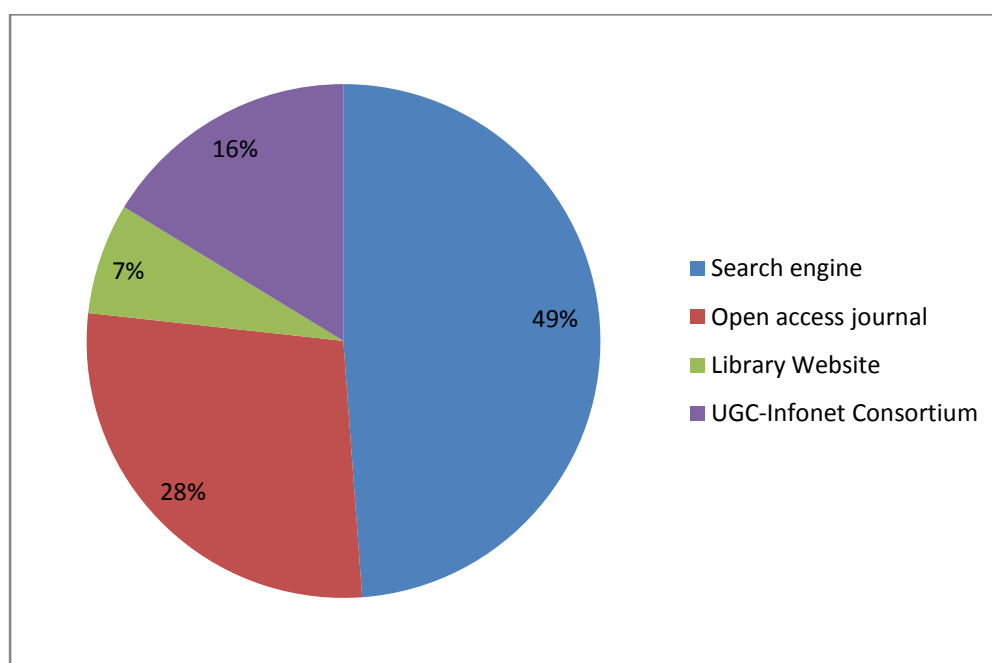


Figure-4.5.4: Preferred way to access electronic resources

Now in a present digital environment, there are lot of rout to search electronic resources. Table-4.5-D, supported with figure-4.5.4discribed the rout to search electronic resources and found that search engine was most favorite rout to search e-resources by respondents. Total 21 (49%) respondents which constituting 5(57%) faculties and 16(49%) research scholars were search content through search engine while 12 (28%) respondents search on open access online journals and3 (7%) search electronic resources through Library website . Only 7(16%) respondents got email-alert services about e-resources.

4.6 Computer computability and Internet uses

4.6.1 Computer Knowledge and Skill:

Level of Computer Skill	Faculty	Research Scholar	Total
Excellent	1(7%)	2(5%)	3(5%)
Good	6(43%)	15(33%)	21(36%)
Satisfactory	7(50%)	26(58%)	33(56%)
Poor	0(0%)	2(5%)	2(3%)
Total	14(100%)	45(100%)	59(100%)

Table-4.6-A: Level of computer skills

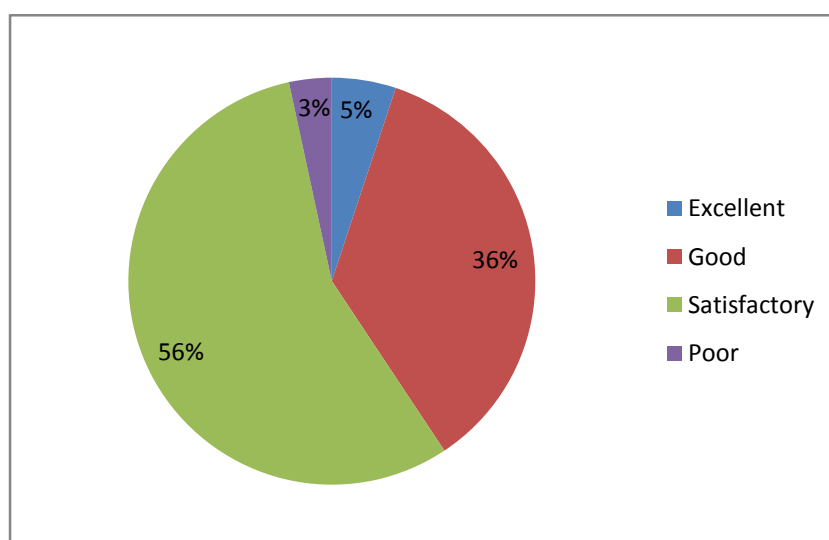


Figure-4.6.1: Level computer computability

Now in present digital era computer literacy and computability is very important and without knowledge of computer now very difficult to survive present global academic environment. Table-4.6-A, supported with figure-4.6.1 described the level of computer copetancy among respondents and found that minority of the respondents having satisfactory level of computer competency. Total 33 (56%) respondents which constituting 7(50%) faculties and 26(58%) research scholars were having satisfactory computer skills to manage their academic work while 21 (36%) respondents having good and 3(5%) having excellent computer skill. Only 2(3%) respondents reported that they have poor level of computer skill and they were not able to use computer for their academic work.

4.6.2 Use of Internet

Regular using Internet	Faculty	Research Scholar	Total
	14(100%)	42(93%)	56(95%)
No	0(0%)	3(7%)	3(5%)
Total	14(100%)	45(100%)	59(100%)

Table-4.6-B: Uses of Internet

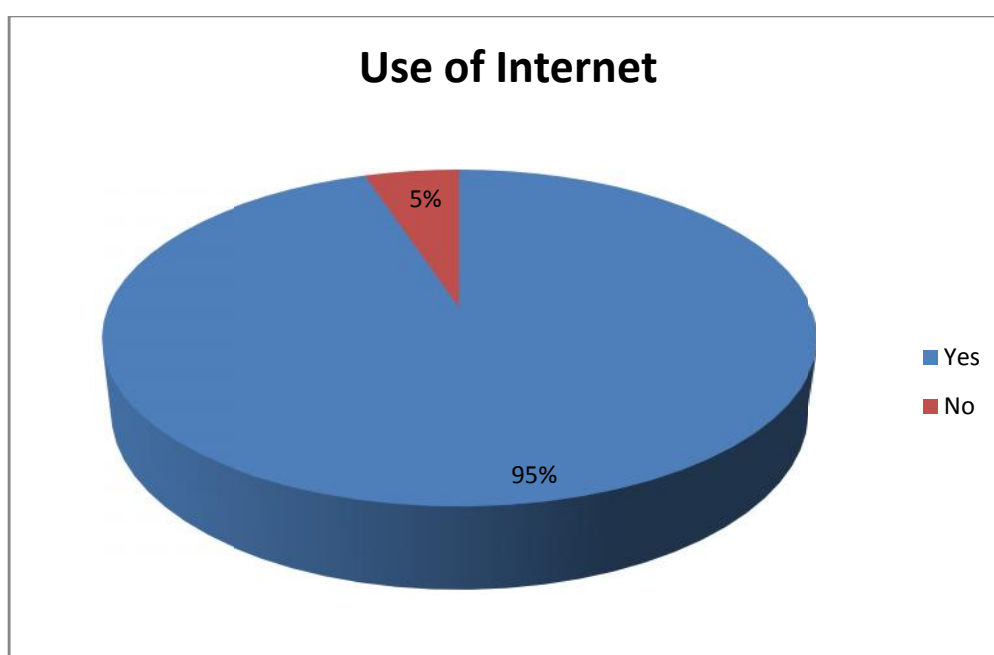


Figure-4.6.2: Uses of Internet

Internet has become very common tool to search the information now days because it became the strongest source of information and everyone wants to be an online mode all the time. Table-4.6-B, supported with figure-4.6.2 described the use of Internet by respondents and found that minority of the respondents (95%) using internet which included all faculties and 42(93%) research scholars and only 3(5%) respondents among research scholars were not using Internet and fully dependent on print resources for their academic information needs.

4.6.3 Frequency of Internet uses:

Frequency	Faculty (N=14)	Research Scholar (N=42)	Total (N=56)
Daily	14(100%)	34 (81%)	48(86%)
Alternate day	0	2 (5%)	2(4%)
2-3 times in a week	0	3 (7%)	3(5%)
Weekly	0	3(7%)	3(5%)
Total	14(100%)	42(100%)	59(100%)

Table-4.6-C: Frequency of Internet uses (N=56)

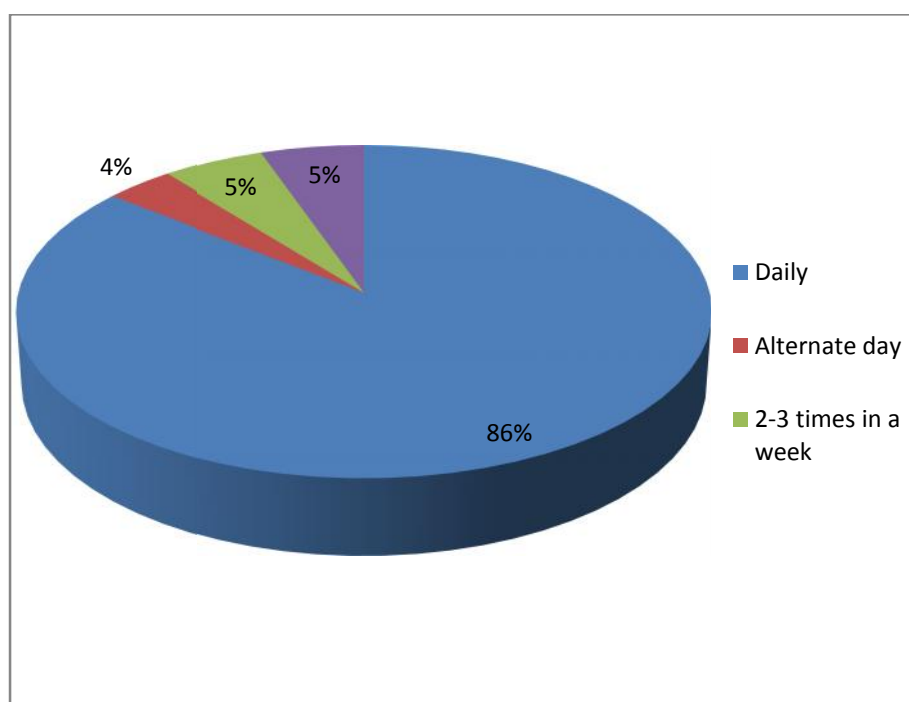


Figure-4.6.3: Frequency of Internet uses

The frequency to use internet is a one of the parameter to know the usability of internet resources. If respondent used internet regularly it means they are access electronic resources regularly because without se of internet they cannot access electronic resources. Table-4.6-C supported with figure-4.6.3, shows the frequency of Internet uses by respondents it was resolved that All the faculties and 37(82%) were using internet daily while 3% respondents use internet alternate day, 5% 2-3 times in a week and 5% in a week but all these respondents were research scholars.

4.6.4 Satisfaction with Internet Speed:

Satisfied with Internet speed	Faculty (N=14)	Research Scholar (N=42)	Total (N=56)
Yes	5(36%)	7 (17%)	12(21%)
No	9 (64%)	35(83%)	44(79%)
Total	14(100)	42(100%)	59(100%)

Table-4.6-D: Satisfaction with Internet Speed (N=56)

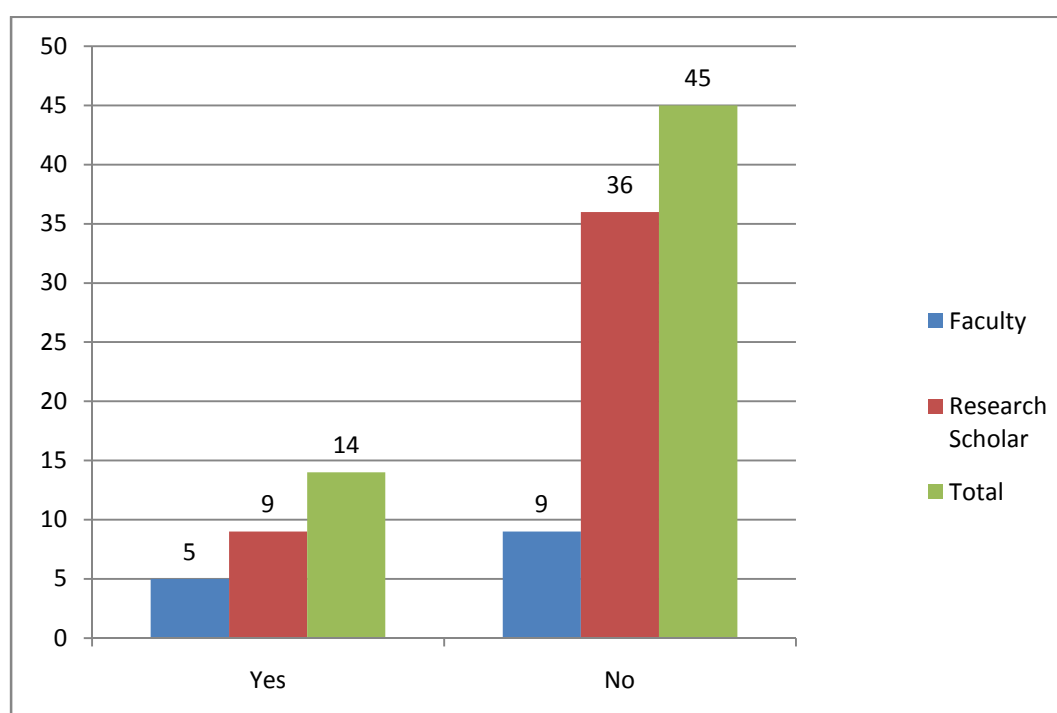


Figure-4.6.4: Satisfaction with Internet Speed

For access the electronic resources, speed of internet has an important role because downloading of resources are fully depend upon internet speed. The satisfaction level of respondents with internet speed reflects attraction towards electronic resources. Table-4.6-D, supported with figure-4.6.4 shows the satisfaction of respondents with internet speed and it was resolved that majority of respondents (79%) which included 9 (64%) the faculties and 35(83%) research scholars were not satisfied with internet speed available to access e-resources.

4.7 Awareness and uses of UGC-Infonet Library Consortium:

4.7.1 Status of awareness of UGC-Infonet

Aware with UGC-Infonet	Faculty	Research Scholar	Total
Yes	10 (71 %)	29 (64 %)	39 (66 %)
No	4 (29 %)	16 (36 %)	20 (34 %)
Total	14(100 %)	45(100 %)	59(100 %)

Table-4.7-A: Status of awareness of UGC-Infonet

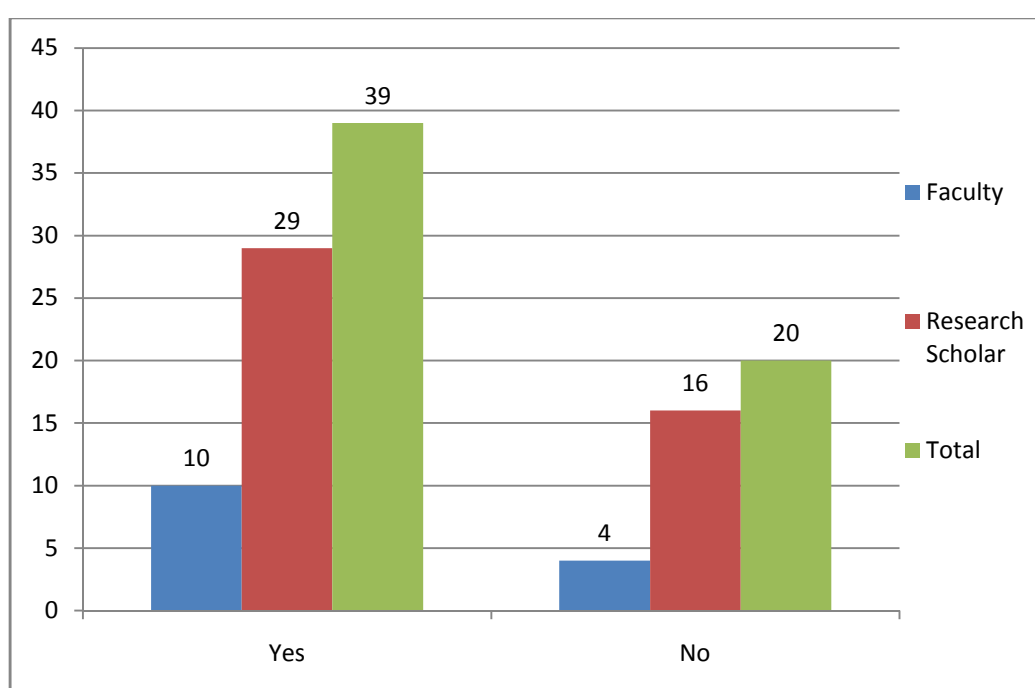


Figure-4.7.1: Awareness with UGC-Infonet

Under the UGC-Infonet digital library consortium around 7500+ digital resources are available free of cost which included all subjects. This is a gateway of knowledge where a many databases and electronic journals are available in physical sciences discipline. Table-4.7-A, supported with figure-4.7.1 reflect the awareness among respondent about this consortium and it was resolved that 39 (66%) respondents which constituting 10 (71%) the faculties and 29(64%) research scholars were aware about UGC-Infonet Library consortium and 34% respondents which constituting 4(29%) the faculties and 16(36%) research scholars were not aware with this consortium and its resources.

4.7.2 Source of Awareness about UGC-Infonet Consortium:

Source	Faculty (N=10)	Research Scholar(N=29)	Total (N=39)
Self	1(10%)	0	1(3%)
Friends/colleagues	4(40%)	6(23%)	10(26%)
Library staff	2(20%)	6(23%)	8(21%)
Internet	1 (10%)	2((7%)	3(7%)
Teacher	0	6(23%)	6(15%)
Library Website	2(20%)	0	2(5%)
Library Orientation	0	9(31%)	9(23%)
Total	10(100%)	29(100%)	39 (100%)

Table-4.7-B: Source of Awareness of UGC-Infonet Consortium (N= 39)

Proper information with right source is essential for proper utilization of UGC-Infonet resources. Always source of information has an important role in terms of awareness about information source. Table-4.7-B, shows the source of awareness about UGC-Infonet consortium among respondent and it was resolved that 4(40%) faculties and 6(23%) research scholars came to know about UGC-Infonet from their Friends/colleagues, 2(20%) faculties and 6(23%) research scholars from Library staff, 1(10%) faculty and 2 (7%) research scholars from Internet. The 10% faculties reported that they came to know about UGC-Infonet by self and 20% through library website while maximum research scholars 9(31%) came to know from Library Orientation and 6(23%) from their teachers.

4.7.3 Frequency to access of consortium

Access Point	Faculty (N=10)	Research Scholar (N=29)	Total(N=39)
Every Day	3(30%)	0(%)	3(8%)
2-3 times in a week	4(40%)	10(34%)	14(36%)
Once in a week	2(20%)	12(41%)	14(36%)
Once in a two weeks	0(%)	2(7%)	2(5%)
Occasionally	1(10%)	5(18%)	6(15%)
Total	10(100%)	29(100%)	39(100%)

Table-4.7-C: UGC-Infonet Consortium (Frequency to use 39)N=5C:

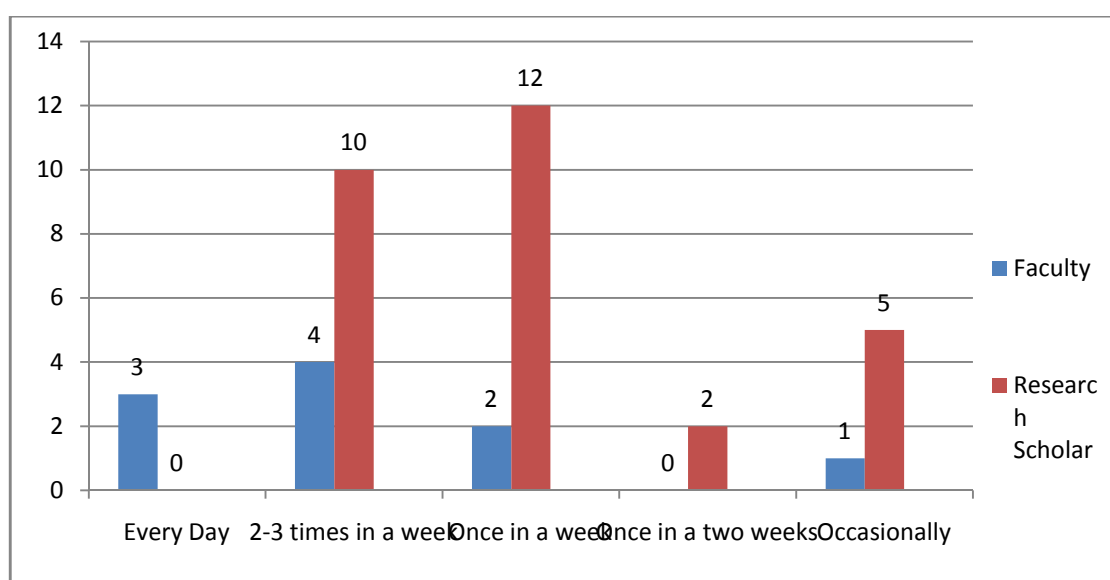


Figure-4.7.3: Frequency to Use UGC-Infonet

The usage of UGC-Infonet is a parameter to measure the frequency of uses of this library consortium. The frequency of use is directly related with usage of consortium by users. Table-4.7-C: supported with figure-4.7.3 reflects the frequency to Use UGC-Infonet by respondent and it was found that no research scholars were using UGC-Infonet consortium every day while 30%faculties used this consortium every day. 14 (36%) respondents which constituting 4 (40%) faculties and 10(34%) research scholars used 2-3 times in a week, 2(20%) faculties and12(41%) research scholars (Total-14(36%) respondents) used Once in a week and 1(10%) faculties and 5(18%) research scholars (Total- 6 (15%) respondents) used UGC-Infonet consortium Occasionally

4.7.4 Preferred Place to Use UGC-Infonet:

Preferred place	Faculty (N=10)	Research Scholar (N=29)	Total
University Library	0	0	0
Computer Centre	0	13 (45%)	13(34%)
Department	10(100%)	10 (34%)	20(51%)
Hostels	0	6 (21%)	6(15%)
Total	10(100%)	29(100%)	39(100)

Table-4.7-D: Preferred place to use UGC-Infonet

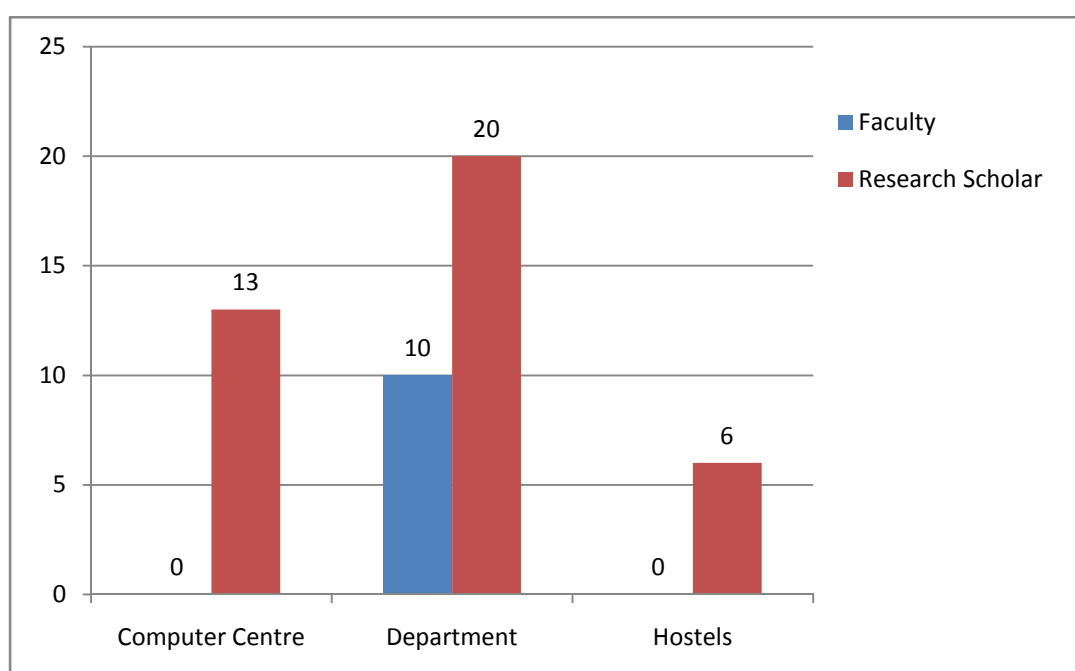


Figure-4.7.4: Preferred place to use UGC-Infonet

The UGC- Infonet library consortium resources are available on intranet campus network and from whole campus it is accessible. The users can access these resources according to their preference and need. Table-4.7-D, supported with figure-4.7.4 shows the preferred place to use UGC-Infonet by respondent and it was found that all the faculties used UGC-Infonet consortium from their department (own computer). Among the research scholars, majority of them 13 (45%) used this consortium in computer Center, followed by 10 (34%) department (lab/laptop) and 6 (21%) preferred to use from hostel. No respondents were used UGC-Infonet from library.

4.7.5 Purpose of usage UGC-Infonet Library Consortium:

Purpose	Faculty(N=10)	Research Scholar(N=29)
Personal update	6 (60%)	20((70%)
For Teaching	8 (80%)	-
For Research	8 (80%)	28 (97%)
For Guiding Research Student	7 (70%)	0
For writing Research Articles	8 (80%)	19 (66%)

Table-4.7-E: Purpose of use UGC-Infonet

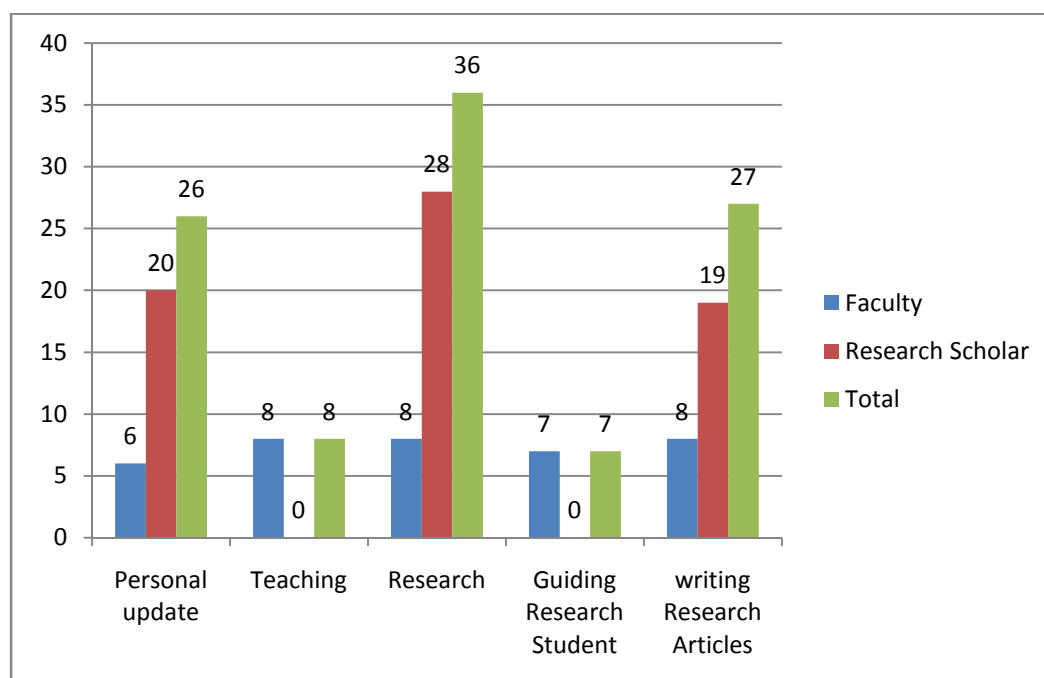


Figure-4.7.5: Purpose of use UGC-Infonet

The respondents were using the UGC-Infonet consortium resources for different academic purposes and many were used it for more than one purpose. Table-4.7-E: shows the purpose to use UGC-Infonet consortium and after analysis it was resolved that faculties used UGC-Infonet for personal update (60%), teaching(80%), research (80%), guide research students(70%) and writing research article (80%) while the research scholars used this consortium for three purposes i.e. personal update (70%),research (97%), and writing research article (66%).

4.7.6 Preferred file format to download content

File Format	Faculty (N=10)	Research Scholar (N=29)	Total
HTML	1(10%)	1(3%)	2(5%)
PDF	9(90%)	28(97%)	37(95%)
Total	10(100%)	29(100%)	39(100%)

Table-4.7-F: Preferred file format

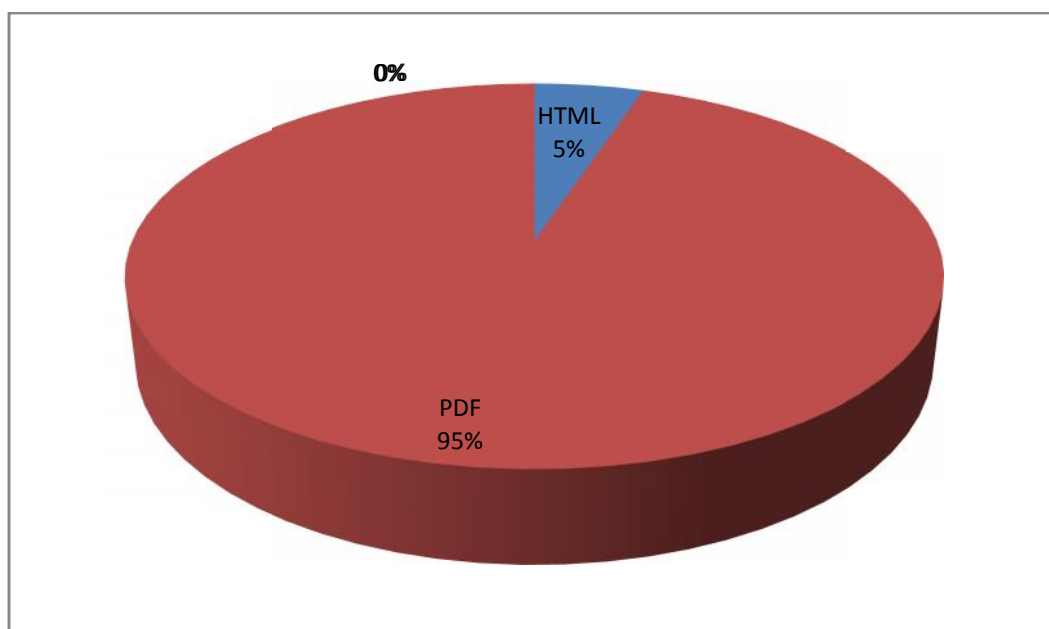


Figure-4.7.6: Preferred file format to download materials

The electronic resources are available in different format (PDF and HTML) in UGC-Infonet consortium. Users can download and use according to their preferred format. Table-4.7-F: supported with figure-4.7.7 shows the preferred format to download the e-resources and found that PDF was the most preferred format and almost all (95%) respondents prefer to download resources in PDF format.

4.7.7 Opening about rating of the UGC-Infonet consortium

Rating	Faculty	Research Scholar	Total
Very Useful	7(50%)	22(49%)	29(49%)
Useful	3((21%)	7(15%)	10(17%)
Cannot Say	4(29%)	16(36%)	20(34%)
Total	14(100%)	45(100%)	59(100%)

Table-4.7-G: Rating of UGC-Infonet consortium

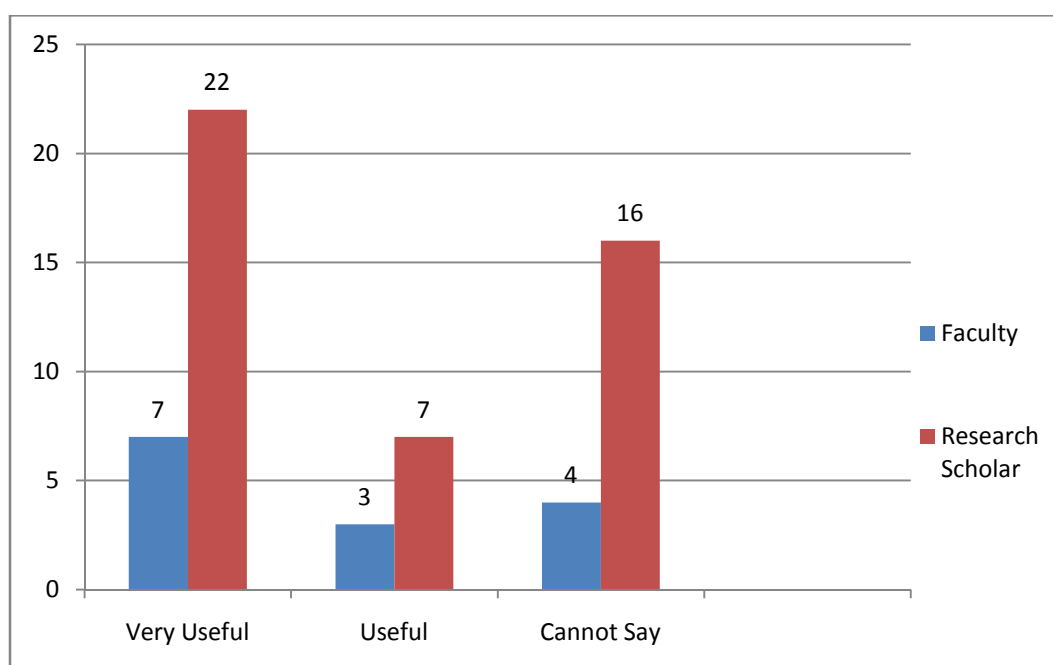


Figure-4.7.7: Rating of UGC-Infonet consortium

User's opinion about usefulness is a type of feedback about rating of UGC-Infonet consortium services. Table-4.7-G, supported with figure-4.7.7 shows viewof respondent about usefulness of UGC-Infonet consortium and found that 29(49%) respondents which contains 7(50%) faculties and 22(49%) research scholars reported that UGC-Infonet consortium are very useful while 3((21%)faculties and 7(15%) research scholars (total-10 (17%) respondents) reported that it is useful while20(34%) respondents reported that they cannot say about usefulness of this consortium

4.8 User Education Program, satisfaction and problems in use of UGC-Infonet

4.8.1 Status of library education program about UGC-Infonet library consortium

Adequacy	Faculty	Research Scholar	Total
Adequate	8(57%)	12(27%)	20(34%)
Not Adequate	6(43%)	33(73%)	39(66%)
Total	14(100%)	45(100%)	59(100%)

Table-4.8-A: Adequacy of Library education about UGC-Infonet

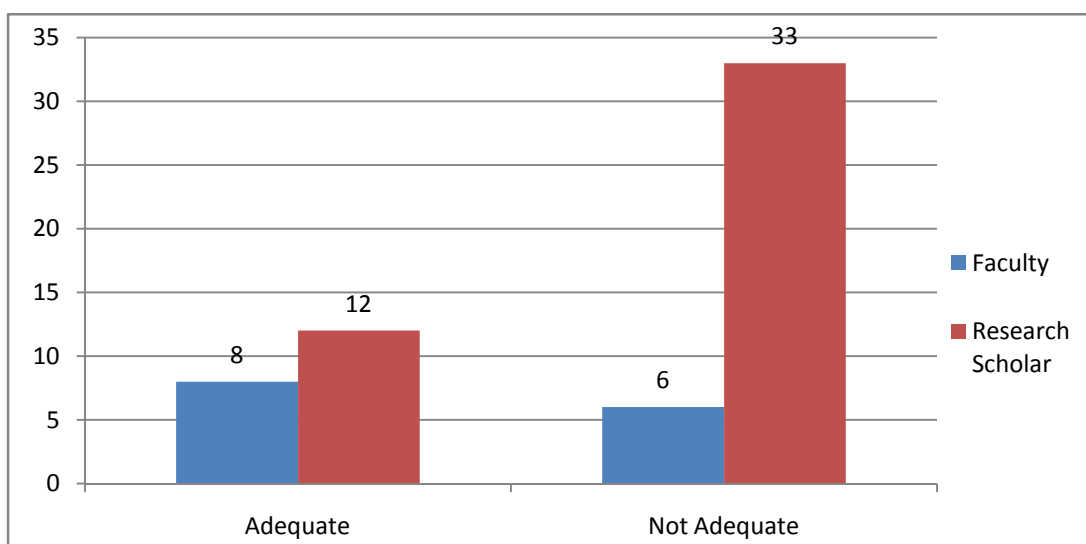


Figure-4.8.1: Adequacy of Library awareness program about UGC-Infonet

Time to time library organized library orientation program about UGC-Infonet for users so that they may be aware and maximize the use of this consortium. Table-4.8-G, supported with figure-4.8.1 shows view of respondent about Adequacy of library education/awareness program about UGC-Infonet and after analysis it was resolved that 39(66%) respondents which contains 6(43%) faculties and 33(73%) research scholars reported that library orientation program is not adequate and proper to use and access of UGC-Infonet library consortium while 8(57%) faculties and 12(27%) research scholars (total-20(34%) respondents) were satisfied and felted that library education/awareness program was adequate.

4.8.2 Reason of unhappiness with library education program about UGC-Infonet

Reason of unhappiness	Faculty (N=6)	Research Scholar (N=33)	Total (N=39)
Theoretical not practical	1(17%)	10 (30%)	11 (28%)
Period too short	3(50%)	7(21%)	10 (26%)
Too many participant	2 (33%)	9(28%)	11 (28%)
Different background	0	7((21%)	7 (18%)
Total	6(100%)	33(100%)	39 (100)

Table-4.8-B: Reasons of un-satisfaction (N-39)

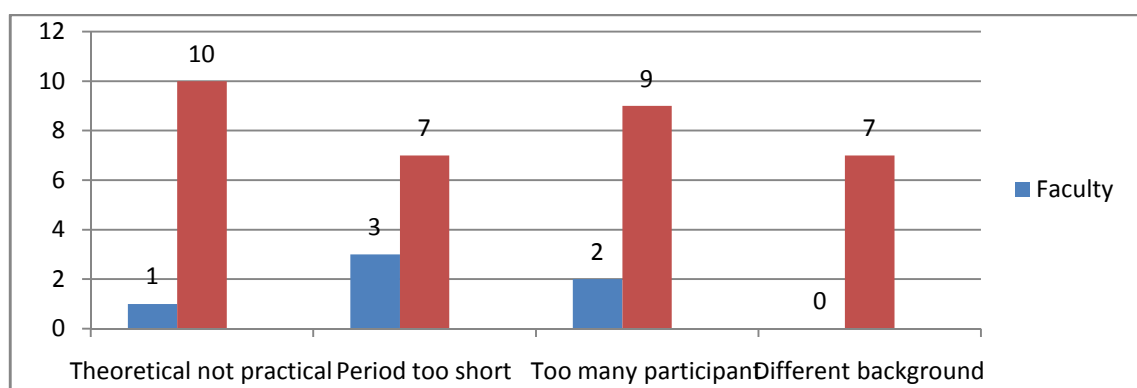


Figure-4.82: Reasons of unhappiness with Library orientation program

If users were not satisfied with UGC-Infonet awareness program of library, there must some reasons behind it. During the study, it tried to find out this reasons. Table-4.8-B: supported with figure-4.8.2 shows the respondents opinion regarding unhappiness with UGC-Infonet awareness program and after analysis it was found that 11(28%) respondents unhappy with awareness program because it was only theoretical not practical, while 28% said that to many participant in program, 26% said that period of awareness was too short and they are not able to get all information within this time, and 18% said that among participant different background students are there. Majority of faculties (50%) were unhappy due to short period of awareness followed by so many participants (33%) while in research scholars majority were unhappy (30%) due to only theory based training, followed by 28% due to many participants, 21% due to short period of training and 21% respondents were unhappy due to mixed background students awareness.

4.8.3 Do you aware and participated UGC-Infonet awareness Programm, Organized by DLIS, MZU in October, 2010.

Rate	Faculty	Research Scholar	Total
Aware and participate	4(29%)	8(18%)	13(22%)
Aware but not participate	4(29%)	10(22%)	14(23%)
Not aware	6(42%)	27(60%)	33(55%)
Total	14(100%)	45(100%)	59(100%)

Table-4.8-C: Awareness about DLIS awareness program

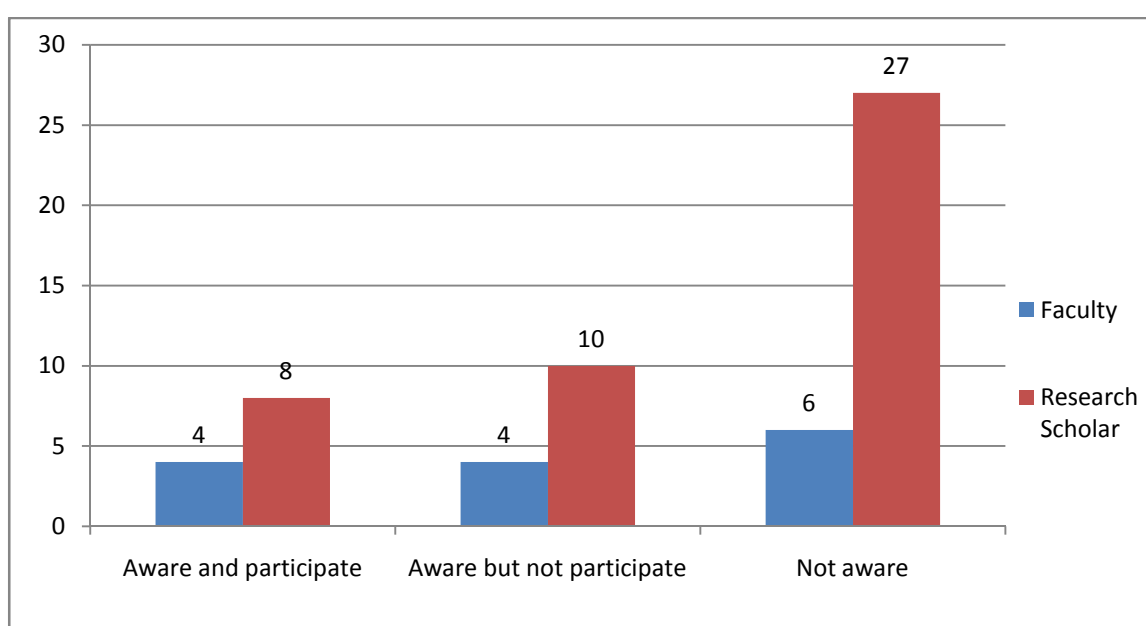


Figure-4.8.3: Awareness and participation of UGC-Infonet Awareness program of DLIS

In October 2010, Department of Library & Information Science, MZU with collaboration of INFLIBNET organized UGC-Infonet Awareness Program. Table-4.8-C: supported with figure-4.8.3 shows the awareness and participation of respondents in this awareness program and after analysis it was found that only 13(22%) respondents which contains 4(29%) faculties and 8(18%) research scholars were aware and participated in this awareness program while 14(23%) which contains 4(29%) faculties and 10(22%) research scholars were aware but did not participated. The 6(42%) faculties and 27(60%) research scholars (Total-33(55%) respondents) reported that they were not aware about this program because they joined this university after 2010 only.

4.8.4 Satisfaction with UGC-Infonet:

Satisfaction Level	Faculty (N=10)	Research Scholar(N=29)	Total (N=39)
Fully satisfied	2(20%)	8(28%)	10(26%)
Satisfied	6(60%)	10(34%)	16(41%)
Unsatisfied	2(20%)	11(38%)	13(33%)

Table-4.8-D: Satisfaction with UGC-Infonet

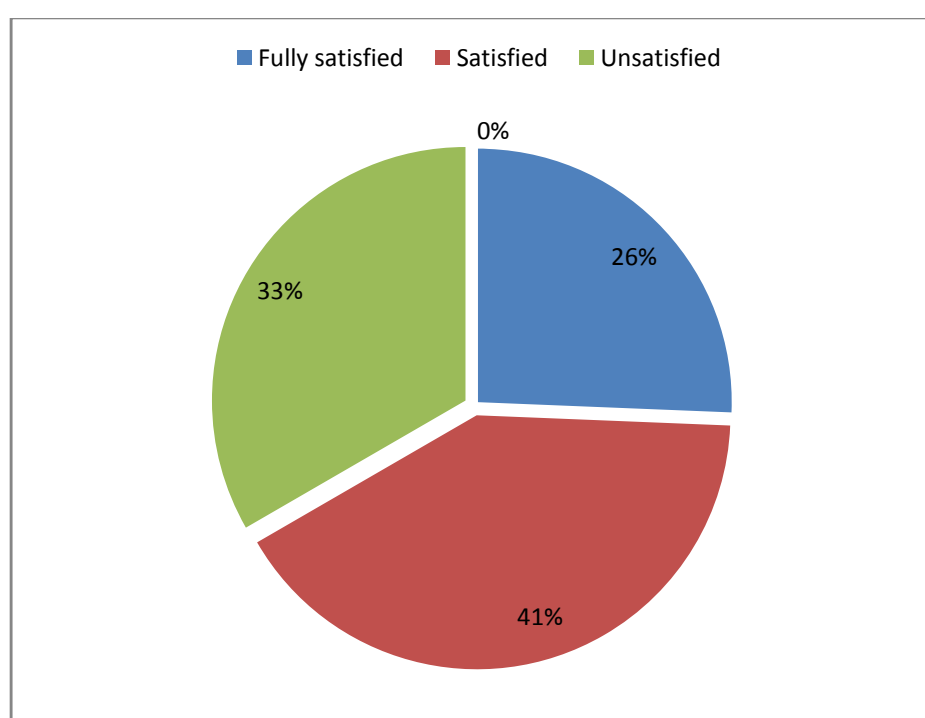


Figure-4.8.4: satisfaction level with UGC-Infonet consortium

Table-4.8-D: supported with Figure-4.8.4, shows the satisfaction level of respondents about UGC-Infonet and after analysis it was resolved that 10(26%) respondents were fully satisfied with UGC-Infonet and 16(41%) respondents which contains 6(60%) faculties and 10(34%) research scholars were quite satisfied while 20% faculties and 38% research scholars (Total 33% respondent) were unsatisfied with UGC-Infonet consortium.

4.8.5 Main problems facing by respondents in accessing of UGC-Infonet

<i>Problems</i>	Faculty (N=14)	Research Scholar (N=45)	Total (N=59)
Lack of knowledge to use	6(43%)	25(56%)	31(53%)
Lack of sufficient Internet nodes in University	0	23(51%)	23 (40%)
Lack of accessibility to UGC-Infonet consortium at department /work place	0	26(58%)	26(44%)
Slow Internet connectivity	13(93%)	37(82%)	50(85%)
Lack of relevant information sources	6(43%)	21(47%)	27(46%)

Table-4.8- E: Main problems in accessing UGC-Infonet

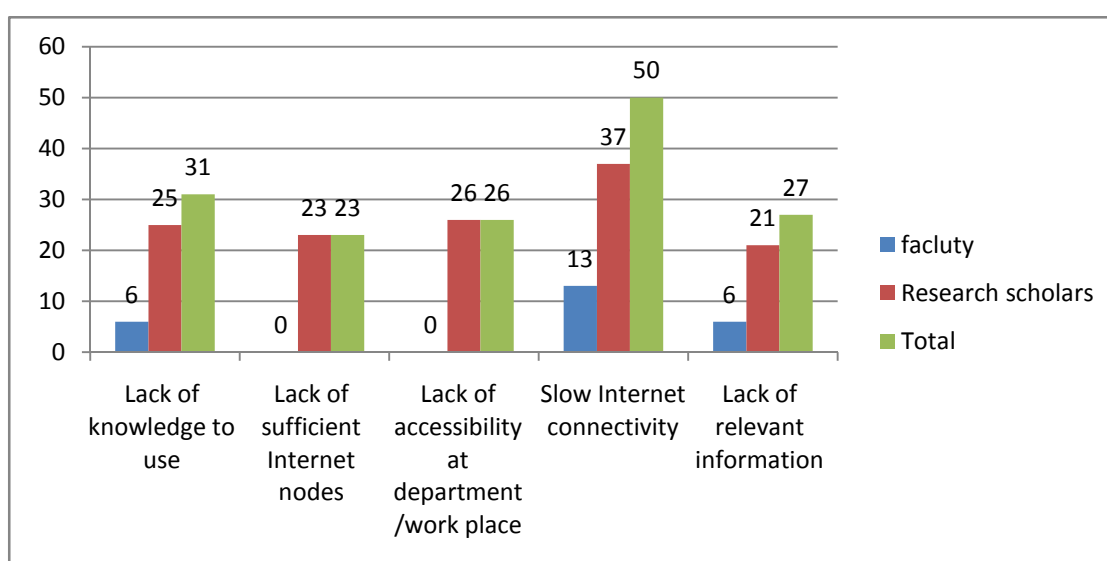


Figure-5.25: Problems in accessing UGC-Infonet consortium

The scholar would like to find out from the problems they faced in accessing UGC-Infonet consortium and many respondent giving more than one problem in this regard which has been tabulated in Table-4.8-E: supplemented with figure-4.8.5 for better clarity of analysis and found that 50(85%) respondents were indicated that slow internet connectivity as the main problem in accessing UGC-Infonet consortium and 31(53%) respondent said that Lack of knowledge to use as problem while 27(46%) respondents indicated lack of relevant information sources as a problem. In faculty respondents, 93% reported internet speed as a main problem followed by 6(43%) lack of knowledge to use and 6(43%) lack of relevant Information sources as a problem. In research scholars group also 37(82%) respondents reported Internet speed as their main problem followed by 26(58%) lack of accessibility at department/work place, 25(56%) Lack of knowledge to use, 23(51%) un-sufficient Internet nodes and 21(47%) Lacks of relevant information sources were the other problem with regard to UGC-Infonet consortium.

4.9 Findings:

UGC-Infonet Digital Library Consortium is a beneficial for academic communities' and it was proved by several studies and also discuss in review of literature. The faculty members and the Research Scholars of School of Physical Sciences also feel that it is very useful for them and it has a lot of positive impact on their Academic and Research Performanet. The study was started with intention to find out the *Use of UGC-Infonet Digital Library Consortium by Faculty Members and Research Scholars in School of Physical Sciences, Mizoram University*. To achieve the objectives of the study, data was collected through questionnaires as a tool and after analysis the scholars deduced following major findings:

- The respondent ratio is almost equal to all the three departments under the school of Physical Science in the study. Among the respondents, 76% were research scholars and 24% were faculties and majorities were the males (69%).
- Majority of the respondents (80%) were young and belong to below that 35 years age and only one respondent was above than 56 years in age.
- Majority of the respondents (61%) visiting library occasionally and only 15% respondent visited library regularly which did not include any faculty members. From the all respondents, 88% were visited library only for issue and return, 5% for study and 7% for periodical consultation purposes.
- 59% respondents were satisfied with library collections and services while 41% respondents said that library collections and services was not Adequate at present need to be improved.
- The preferred type of information resources used by respondents was print sources and 86% respondents which constituting 10(72%) faculties and 41(91%) research scholars were preferred print source of information. Among the respondents 73% were used electronic resources with print resources while 27% respondents did not used electronic resources and they are fully depend upon print resources
- The most favorite rout to search e-resources was search engine and 70% respondents searched their information through this mode which was followed by 14% from table of contents of online journals, 5% through e-mail alert services and 11% through discussion list/forum.

- Majority of respondents having computer literacy to do their work with computers. 56% respondents having satisfactory computer skill while 36% have well and 5% have excellent computer skill. There were only 2% respondents who have poor computer skill to do their work. All the faculty members and 93% research scholars (total 95% respondents) were using Internet for their education and research purposes.
- Among the Internet users, all faculties and 81% research scholars used internet daily but majority of respondents (79%) were not satisfied with internet connection and speed because in a month many time internet connection was break down.
- Most of the faculty members and research scholars in School of Physical Sciences were aware with UGC -Infonet Digital Library Consortium. It was found that 66% respondents which constituting 10(71%) the faculties and 29(64%) research scholars were aware while 34% respondents were not aware with this consortium and its resources.
- The Friends/colleagues were the major source of awareness about UGC-Infonet consortium among respondents which was followed by library staffs and teachers. Some respondents came to know from library website and Internet. The library orientation was a major source of awareness about UGC-Infonet among research scholars.
- The preferred place to used consortium is department. Normally respondents (total 72%) used UGC-Infonet consortium 2-3 times in a week or once in a week. Only 30% faculty members used UGC-Infonet consortium daily while no research scholars used this consortium on daily and 15% respondents used occasionally.
- The respondents used this consortium for more than one purposes. The faculties used UGC-Infonet for personal update (60%); teaching (80%); research (80%), and guide research students (70%) and writing research article (80%) while the research scholars used this consortium for three purposes i.e. personal update (70%), research (97%), and writing research article (66%). The PDF was most preferred formate to download the content from consortium.

- The 49% respondent feels that this consortium was very useful while 17% feel that it was useful while 34% respondents reported that they can not say anything about usefulness of UGC-Infonet library consortium.
- Only 34% respondent were satisfied with users awareness program of library and 66% respondents were unsatisfied with it. The reasons of unhappiness were-- it was more theoretical than practical, time was too short, many participants at a time and mixed background of participants in one batch etc.
- Among the respondents, 26% were fully satisfied; 41% were satisfied while 33% respondents were not satisfied with UGC-Infonet digital Library consortium.
- The main problem reported by respondents regarding access to UGC-Infonet digital library consortium were: slow internet connectivity, lack of knowledge to use; lack of relevant information sources; lack of sufficient Internet nodes and lack of accessibility at department /work place etc.

5.1 Conclusion

Now we are living in digital age and it is a revolutionary period which impact is far surpassing those of the Agricultural and Industrial Revolutions. Information has now become the most strategic resource that is transforming the world economy. ICT has brought about changes in different aspects of human life in the 21st century. The new opportunities provided by ICT in business, learning, communication etc. have thrown the world into a new society called the knowledge society or information society and world has become a global village. Information Communication Technology (ICT) has caused socio-cultural, political, educational, and economic change. Salisu (2002) noted that ICT has engendered a new approach to work and service delivery, and is a technological development that has changed work and job expectations. The library is one of the main areas deeply affected by ICT which is the backbone of information age. This is due to the fact that the library being the main stay of information and knowledge has been changed in virtual and library & information services extend beyond walls and physical boundary of library. In the new paradigm, the basic functions of libraries such as collection, organization, preservation and dissemination of information, user's demand and their information seeking behavior are also changing in this digital environment.

In the present age of information, it has been increasingly felt that to serve readers better, information needs of users should be the central focus of attention. The different user categories have different information needs depending upon their functions, occupations, responsibilities and duties. The role of faculty members and research scholars is very crucial in the university systems. Their reading interests, current awareness, subject knowledge have direct impact on their teaching and learning process. Students get motivated, inspired by their teachers during course of their studies. Teachers are expected to be well read and constantly up-to-date in their fields of specialization. Therefore it would be an interesting and innovative study to ascertain their reading interests, sources of information, information and communication channels, types of information they need etc.

The advent of e publishing has brought a revolution in journals publication, subscription as well as access to the scholarly literature. The age of library consortia is at the doorsteps to prove the library cooperation locally, regionally, nationally and internationally. It is the one of the emerging tool kit for the maximum libraries to

survive if the libraries have to provide information to their users. In the history of highest education in India, the emergence of UGC-Infonet Digital Library consortium is one of the most ambitious achievements. The main goal of this programme is to deliver the right information to the right user at the right time with the help of the state-of-art technology. All the Indian University's faculties and research scholars including Mizoram University are fortunate to have access the large number of scholarly publication under the UGC-Infonet library consortium without any financial speculation because UGC itself pay behalf of all universities. The UGC-Infonet consortium is seen as a tool with a positive impact on all academic libraries. The School of Physical Science (SPS) is also enriching with abundant E-journals from UG-Infonet Digital library Consortium.

A large portion of faculty members and research scholars in the school of physical sciences, MZU having satisfactory computer skill and more than 95% respondents are using internet. About 66% respondents are aware about the UGC-Infonet Digital Library Consortium but they do not know all its techniques and applications to proper access. The main sources of awareness about this consortium is friend, colleagues and internet among faculties and Library orientation program among research scholars and they prefer to use the UGC-Infonet at their work place and hostel. They are accessing UGC-Infonet digital library consortium for all their academic activities like- up to date themselves for teaching, research, to guide students, writing paper etc. Majority of the users rated the consortium services are good but there is need to include more number of journals in the consortium. Further, there is need to improve internet facility because 79% respondents were not satisfied with internet connection and speed due to frequently break down internet connection.

The users orientation programs conducted by the libraries are found to be inadequate and not practical oriented because 34% respondent are not aware about this consortium and they are not using it, therefore, library should come forward to provide an effective user education and training to develop awareness and knowledge and convert non users to actual users of the UGC-Infonet Digital Library Consortium in order to bring them to the mainstream with a aim to achieve academic excellent in the field of physical sciences. Users also expected some practical oriented training with homogenous users group.

5.2 Suggestion

During the study, scholar obtained many suggestions from faculties and research scholars, have submitted below to improve upon the optimal use of UGC-Infonet Digital Library Consortium among faculty member and Research Scholar of School of Physical Sciences, Mizoram University. Moreover, the scholar also placed below some of the valuable suggestions and remedial measure to act upon by Library for improvement:

- The Library should take a leading role to create awareness among faculty members and research scholars about UGC-Infonet Digital Library Consortium and a continuous awareness program should be organized by central library in a definite interval to convert non users to potential users by educate them about potentiality of UGC-Infonet resources for their academic activities.
- The University authority should support the library in every possible way and faculties and research scholars should cooperate as participant
- The awareness program should be practical oriented and with homogenous group.
- The users should be divided into the basis of their knowledge to use ICT infrastructure and those who lack of knowledge to use ICT infrastructure should be given special training on computer and internet skills.
- Library should take continuously feed back from users to know their information needs and evaluate the UGC-Infonet Consortium usage and accordingly change the collection of resources.
- The Internet services should be improved in both the way- speed and connectivity and it should be available in 24X7 modes. All the departments and hostels should connect with Internet as well as LAN and UGC-Infonet resources are available to access.
- The Library should increase the number of computers nodes especially for research scholars.

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