Chapter I

1.1 Introduction

Libraries are store houses of knowledge and information. The information centres in libraries disseminates knowledge and information, which form the two important components of the modern era in Information Technology and in Library Science. Today, the cost of collecting, processing, storing and spreading information has been increasing. There has been a steep rise in library budgets to maintain the purchase of journals, books and reports, since 1990. Urgent resource sharing and cooperative functioning have become a must for libraries and information networking in the modern era. In most countries, the cost of library materials is increasing day by day. But with a shrinking library budget, libraries are struggling to get the collections they need in their areas of interest. Information networking could help in smooth library management, enrich resources and provide better service to the library users. The cost of library materials such as book and journals are increasing gradually, but with a limited budget, libraries cannot keep pace with this price. In this present age of information explosion, no library is self-sufficient to provide comprehensive services to the users. To overcome these shortcomings, information networking is very much essential.

1.2 Library network

A library network is broadly described as a group of libraries coming together with some agreement of understanding to help each other with a view to satisfy the information needs of their clientele.

1.3 Definitions

UNISIST II working documents defines Information as ‘a set of inter-related information systems associated with communication facilities, which are cooperating through more or less formal agreements in order to implement information handling operations to offer better services to the users.

The National Commission on Libraries and Information Science in its National Programme DOCUMENT (1975) defines a library network as: “two or more libraries

and/or other organizations engaged in a common pattern of information exchange, through communications, for some functional purpose".

Jebraj and Devadoss (2005) has described a library network broadly "as a group of libraries coming together with some agreement of understanding to help each other a view to satisfying the information needs of their clientele.

1.4 Purpose of Library Networking

i. Increase the awareness for the need of resource sharing.
ii. Improve the information technology infrastructure facilities in libraries.
iii. Enhance computer literacy among the library professionals.
iv. Improve the communication facilities within the country and at the global level.
v. Make available general data networks.
vi. Facilitate easy access to internet.
vii. Scanning the relevant information of world literature in all fields of knowledge by research workers and R&D personnel.
viii. Reduce the financial constraints of the individual libraries and the increasing prices of the reading material.
ix. Spread the information far and wide.
x. Manage price escalation of library documents.
xi. Overcome increasing loss of library services.

1.5 Objectives of Library Network

i. To add a new dimension to the concept of networking in the libraries.
ii. To share all resources, which include computing devices, software, human resources, databases, digital information products and services.
iii. To provide online retrieval and updated information.
iv. To provide access to a wide base of information resources.
v. To facilitate linkages with various national and international networks.
vi. To rationalize acquisition and to optimize utilization of information resources.
vii. To promote standards in library operations.
viii. To improve the efficiency of library operations.
ix. To generate new services.

x. To develop forums for interaction among information professionals
xi. To seek solutions to common problems.

1.6 Benefits of Networking

i. Preparation of Union Catalogues.
ii. Provision of cataloguing data/ catalogue cards for the publications available in the network libraries.
iii. Provision of bibliographies.
iv. Optimum utilisation of rare collections.
v. Cooperative acquisition of documents
vi. Cooperative exchange and distribution.
vii. Cooperative storage and distribution.
viii. Cooperative storage of documents.
ix. Minimizes cost of the library services in the long run.

Networking in libraries has brought a tremendous change in the digitalisation of library resources and centralisation of libraries all over India. It has definitely helped in improving the research quality and in greatly saving the time, effect and cost.

Among the various sources of networking, the Information and Library Network (INFLIBNET) of the UGC, serves as a nationwide network offering vast amount of research articles, thesis and books for its users. Its resources are highly advanced and sophisticated, and it has made it easy and efficient for researchers in carrying out their research.

1.7 Library Consortia

The term consortia are derived from the Latin word for "fellowship"; the meaning emphasizes the coming together of separate groups for a purpose. Homogeneously, it is used as "alliance, “coalition,"" collaboration, “cooperation,"" partnership "etc.

1.8 Definitions

The following are some of definitions of the consortium as given in different sources.

Online Dictionary of Library and Information Science (ODLIS) defines library consortia as "an association of independent libraries and/or library systems established by formal agreement, usually for the purpose of resource sharing. Membership may be restricted to a specific geographical region, type of library (public, academic, special), or subject specialization".

While, according to American Heritage Dictionary, a consortium is said to be "a cooperative arrangement amongst groups or institutions" or" an association or society " which has its root in Latin word, consortia that first was adopted in the 17th century.

According to the Oxford English Dictionary, library consortium is "a community of two or more information agencies which have formally agreed to coordinate, cooperate or consolidate certain function" to achieve mutual objectives.

According to Merriam Webster Dictionary a consortium is "an agreement, combination, or group (as of companies) formed to undertake an enterprise beyond the resources of any one member", but it "usually involves horizontal collaboration among direct competitors".

Hirshon (1998) defines the consortium as "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 come together solely to achieve better pricing for purchasing electronic information.

Thus, library consortia are the "community (a cooperative) of two or more information agencies which have formally agreed to coordinate, cooperate or consolidate certain function " to achieve mutual objectives. It is an association of a group of libraries to achieve mutually the joint benefits. It provides a way for its members to conduct business in a comparative manner.

Library consortia are, thus, can be the networks for buying and accessing e-information on a cooperative arrangement among a group of libraries in providing instant access to greater resources for the users of the individual libraries, where coordinator for identification of libraries for each publisher, negotiation, legal matters etc. is selected from one of the member libraries.

1.9 Need of Library Consortia

Pricing models of publishers, electronic publishing of scholarly journal for consortia give opportunities to libraries to provide immediate access to information. Several reasons could be cited to justify need for consortia (Patil, 2021)

- Information Explosion- due to invasive researches taking place in almost all field of knowledge, there is a tremendous increase in the generation of information. Information is provided in many forms and formats. It is impossible for libraries to attain self- sufficiency. A consortium is in a better position to address and resolve the problems of managing, archiving e-resources.
- Shrinking Budget- the cost of books and other information sources has increased day by day. Consortia is built up with a view to increasing the purchasing power of participating institutes in this critical situation of major financial problem faced by libraries and information centres. A consortium enables its member libraries to get the electronic resources at an affordable cost.
- Diversity of User Needs- library users wants to have access to the materials as soon as possible and many of them want information in online format. The web based electronic resources are proper means to meet the expectations of users.
- Professionalization of Library Services- the role of library professionals has changed from mere conservator to navigator of knowledge. It has great challenge for libraries to remain at the front line of the profession. The changed role of librarians has enhanced the value of library consortia.
- Quick Access- today researchers hope that they should have access to their journal articles in electronic form because e-resources are cheaper than print source.

1.10 Consortia models

- Open Consortia: Libraries are free to join and leave as and when they please. Member libraries are usually homogenous in nature and require cross sharing of resources in a specific subject area. E.g. INDEST-AICTE

- Closed group consortia: This type of consortium is managed by coalition, affiliation and collaboration among exclusive libraries e.g. CSIR, DRDO, IIM consortium
- Central funded consortia: A parent body or the coordinating agency will have the financial responsibility for running the consortium. E.g. INDEST-AICTE consortium, CSIR e-journals consortium, UGC INFONET Digital Library Consortium.
- Shared Budget consortia: In this model, the participating libraries take the lead and form the consortium. E.g. FORSA, IIM consortium
- Publisher initiated consortia: Certain publisher's are also encouraging consortium formation by giving a deep discount in prices to member libraries. The Emerald Full-Text Library published by the Emerald Publishing Group (formerly MCB University Press) is recent example.
- National consortium: The end this model is national level licensing of products, like INDEST, UGC-INFONET.
- International consortia: In this consortium, libraries belonging to different countries participate. This may be formed either by individual libraries, such as OCLC, or by bringing different national consortia or by bringing national consortia under one umbrella. Such federation of consortia is known as Meta consortia, such as International coalition of library consortia, which comprises nearly 150 library consortia from around the world.

1.11 Advantages of Library Consortia

According to Singh some of the advantages of the library consortium are as following (Singh,2008)

i. Consortia-based subscription to electronic resources provides access to wider number of electronic resources at substantially lower cost & Optimum utilization of funds
ii. Facilities to build up digital libraries
iii. Helpful to provide better library services like CAS and SDI
iv. Cost sharing for technical and training support

v. Electronic journals demand neither library spaces nor shelving costs nor can they be stolen from the library
vi. The consortium have been offered better terms of licenses for use, archival access and preservation of subscribed electronic resources, which would not have been possible for any single institution
vii. Available 24 hours a day, 7 days a week

1.12Disadvantages of Consortia

According to Singh some of the important disadvantages of the library consortium are as following (Singh, 2008)

i. Absence of printed copy of journals
ii. Required training of staffs in handling electronic documents etc
iii. Consortia requires high initial investments in licensees and information and communication technology
iv. Copyright problems
v. Unreliable telecommunication links and insufficient bandwidth
vi. Lack of archiving and back files availability
vii. Internet access is necessary

1.13 Indian library consortia

- Forum for Resource Sharing in Astronomy and Astrophysics(FORSA)
- Indian National Digital Library in Science & Technology (INDEST)
- INFONET Project of UGC- Health Sciences
- Health Sciences Library & Information Network(HELNET)
- CSIR E-Journal Consortium
- IIM Library Consortium

1.14 N-LIST

The Projects, entitles "National Library and Information Services Infrastructure for Scholarly Content (N-LIST)"being jointly executed by the e-shodhSindhu Consortium, INFLIBNET Centre and the INDEST - AICTE Consortium, IIT Delhi provides for i) cross- subscription to e-resources subscribed by the two Consortia, i.e.subscription to

INDEST -AICTE resources for universities and e-shodhSindhu resources for technical institutions; and ii) access to selected e-resources to colleges.

The N-LIST project provides access to e-resources to students, researchers and faculty from colleges and other beneficiary institutions through server(s) installed at the INFLIBNET Centre. The authorised users from colleges can now access e-resources and download articles required by them directly from the publisher's website once they are duly authenticated as authorized users through servers deployed at the INFLIBNET Centre.

- N-LIST: Four components

The project has four distinct components

i) To subscribe and provide access to selected e-Shod Sindhu e-resources to technical institutions (IITs, IISc, IISERs and NITs) and monitor its usage.

ii) Subscribe and provide access to selected INDEST e-resources to selected universities and monitor its usage.

iii) Subscribe and provide access of selected e-resources to Govt./ Govt.-aided colleges and monitor its usage

iv) To act as a Monitoring Agency for colleges and evaluate, promote, impart training and monitor all activities involved in the process of providing effective and efficient access to e-resources to colleges.

The INDEST and UGC-INFONET are jointly responsible for above listed activities at sr. no. i) and ii) while the INFLIBNET Centre, Gandhinagar is responsible for activities listed at iii) and iv). The INFLIBNET Centre is also responsible for developing and deploying appropriate software tools and techniques for authenticity authorized users.

- Eligibility to join N-LIST

- All Government Colleges covered under Section 12B of UGC Act are eligible to access e-resources through the N-LIST programme.
- Non- Aided Colleges (except agriculture, engineering, management, medical, pharmacy, dentistry and nursing) can get benefit from the N-LIST Programme by joining the programme.

- Annual Membership Fee/ period

- Registered colleges covered under 12B section of UGC are required to pay Rs. 5,900/- Membership Fee+ Rs. 900/- (18% GST) extra as annual membership/ renewal fee.
- Non aided Colleges registered for N-LIST Programme are required to pay Rs. 35,400/- (Rs 30,000/- Membership Fee + Rs. 5400/-)(18% GST) extra as annual membership/ renewal fee.
- The period of membership is valid from April to March every financial year.

- N-LIST e-resources

The Consortium subscribes to the following e-resources for the colleges. All electronic resources subscribed under N-LIST Programme are available from the publisher's website.

- E-Journal Publishers
  - American Institute of Physics (18 titles)
  - American Physical Society (10 titles)
  - Annual Reviews (33 titles)
  - Cambridge University Press (224 titles)
  - Economic and Political Weekly (1 title)
  - Indian Journals (180+ titles)
  - Institute of Physics (46 titles)
  - JSTOR (2500+ titles)
  - Oxford University Press (206 titles)
  - Royal Society of Chemistry (29 titles)
  - H.W. Wilson(3000+ titles)

- E-Book Publishers
  - Cambridge books online (1800 titles)
  - E-brary (83000+ titles)
  - EBSCoHost- Net Library (936 titles)
  - Hindustan Book Agency (65+ titles)

- Institute of South East (382+ titles)
- Oxford Scholarship (1402+ titles)
- Springer eBooks (2300 titles)
- Sage Publication eBooks (1000 titles)
- Taylor Francis eBooks (1800 titles)
- My library-Mc Graw Hill (1124 titles)

Synopsis of Project Report

Title:

Role of INFLIBNET in Enhancing Quality of Education in Academic Institutions of Goa.

Objectives of the Study:

1. To find out the awareness about INFLIBNET resources among librarians and faculty members of academic colleges.
2. To understand the purpose of using INFLIBNET resources by librarians and faculty members of academic colleges.
3. To determine problems faced by the librarians and faculty members while accessing e-resources from INFLIBNET.
4. To suggest ways and means to maximize the use of e-resources of INFLIBNET.

Scope of the study:

The present study is confined to the academic colleges of South Goa.

Hypothesis

1. Faculties in academic libraries of south Goa are unaware of the INFLIBNET resources available in their colleges.

2. There is a need for training for more usage of INFLIBNET resources among the librarians of academic colleges in south Goa.

Limitation

The study is limited to librarians and faculty members of academic colleges in Goa.

Research Methodology:

- The researcher has browsed most of the literature available on this topic.
- Further the researcher has browsed many websites related to the topic.

- The researcher has conducted interviews with the librarians and faculty members of academic colleges.
- The researcher has tried to collect different information by using different tools such as questionnaire, interviews and personal discussion.
- The Researcher has used suitable statistical techniques in finalizing the data with required charts and graphs in presentation to make the interpretation clear and precise.

Organization of the Study:

Chapter I: Introduction

Chapter II: Review of Literature

Chapter III: INFLIBNET: Role, Activities and Services

Chapter IV: Data Analysis and Interpretation

Chapter V: Suggestions andFindings

Chapter VI: Conclusion

Chapter II

Literature Review

(Angadi, 2017) conducted a study entitled "Use pattern of UGC-Infonet Consortium by research scholars of UPE universities of Karanataka state: A study". The study focuses on the research scholars of science and technology(S&T) discipline of universities with potential for excellence (UPE) awarded institutions in Karnataka state, namely Karnataka University, Dharwad and University of Mysore, awareness and utilization of the UGC-Infonet consortium. According to the author, 88% of respondents were aware of UGC-Infonet consortium. According to the finding, users utilise UGC-Infonet twice a week and majority of users prefer searching by title, followed by searching by author. UGC-Infonet is used by 85% of users for research, 70 % for seminars/ workshops, presentation, and 58% for keeping up with the newest developments. The biggest impediment to the consortium's effective use is technical difficulties. The consortium is rated very good by 42% of the users. A number of journals should be added to the consortium, according to the study.

(Kumar &Anjaiah, 2018) studied the use of UGC-Infonet e-journals by research scholars of Maulana Azad National Urdu University, Hyderabad. The study aimed to examine the purpose of use, type of e-resource, frequency of access, level of satisfaction, difficulties encountered. The library is the primary source of information for the majority of the respondents, who utilise e-journals once every two days. For research, users mainly rely on UGC-Infonet (E-shodhshindhu consortium). The most frequent reason for using the e-journals are for research and guidance, to update subject knowledge and for professional development. Users rate the UGC-Infonet e-journals as good. The main barriers to using e-journals were lack of terminals, inconvenient timing and slow access. To access and download e-journals, the majority of UGC-Infonet users require training.

(Murthy & Krishnamurthy, 2015) conducted a study titled "Usage Patrons of UGC-Infonet Database Users of Mangalore university: A Case Study" to examine the level of usage and awareness, as well as the benefits, purpose, challenges, and frequency of using the databases and bibliographical databases. The study found that all 120

respondents are aware of UGC-Infonet consortium. The maximum numbers of respondents are from the science field. The users agree that the advantages are the availability of the service 24 x7 and the convenience of browsing. Writing articles is the primary reason for using UGC-Infonet.

(Kaushal & Chakravarty,2017) in their study titled "Identifying quality contents of N-List e-resources for academic pursuits and learning outcomes" attempted to find out the accessibility of N-List e-resources and the usage trends used by the faculty and students of Punjab University, Chandigarh. The primary objectives were to examine the level of satisfaction amongst the faculty members in achieving their academic pursuits and to analyse the level of satisfaction amongst the students for improving their learning outcomes. Data analysis revealed that 50 percent of the faculty members were satisfied with subject overage and its relevancy of N-List e-resources, while 50 percent are not satisfied. The subject coverage and relevance are satisfactory to the students. According to the study, librarians should promote N-LIST e-resources via email, message alerts, and social networking sites.

(Kumar, Venkateswarlu, Naick, 2018) in their paper entitled "Use of N-List e-resources by faculty and students of MRITS and MRCE engineering college libraries, Hyderabad, Telengana- a Case Study" analysed the awareness and usage of N-List services. The study also highlights the purpose and problems faced by faculty and students while accessing. The findings showed that the students and faculty members access N-List e-resources once a week. Research work was the main reason faculty members accessed the e-resources and for students to keep up-to-date. College library was preferred place of access. Majority of the users had trouble while accessing information due to lack of time. The paper also provides a list of N-List e-resources (e-journals & e-books) and their web URLs.

(Puttamadappa& Begum, 2017) In their work "Use of N-List e-resources by science faculty in first grade colleges affiliated to the university of Mysore: a Study". The study aimed to examine the purpose of use, types of e-resource, frequency and place of access, level of satisfaction, problem faced while accessing and preference external storage medium for storing information resources downloaded via N-LIST service. Research findings indicate that a number of faculty members learned to use N-LIST through trial and error. Nearly 60 percent use N-LIST e-resources for preparing and

accessing teaching resources. Indian Journals and Sage Publication eBooks are used by maximum number of faculty members. The benefit users get due to access to N-LIST e-resources are access to up to date information, easy portability of e-resources and better source of information. Faculty members should be taught how to do advance searches.

(Annu, Mini & Aparna, 2015) in his study "The use of N-List programme and the role of college librarians" aims at ascertaining the awareness of N-List programme among science and social science teachers of selected colleges, understanding the usage pattern and preferences, level of satisfaction, the need for orientation programmes and the various suggestions put formed by the users. Most of the respondents were aware of N-LIST and majority of them came to know from their college librarian. According to the finding, the colleges where the orientation programme was held had a high usage rate of the N-LIST services. Science faculty use the N-LIST programme more than the social science faculty, which could be to the availability of more science publications. The e-resources were mainly accessed for teaching purpose. JSTOR& e-brary are used by the majority of the faculty members. It was suggested to include Elsevier publication mainly Science Direct. The author suggests training the users to use reference management software.

(Chikkamanju& Kumar, 2015) conducted a study entitled "Use of N-List services by the students of first grade colleges in TumkurDistrict:A Survey". The study was carried out at First Grade colleges such as Arts, Science and Commerce discipline affiliated to Tumkur University. The study aimed to examine the purpose of use, type of services, level of satisfaction, problem faced while accessing, training/orientation program and preferred external storage medium for storing information resources downloaded via N-LIST Services. As per the data, majority of the students from university colleges awere aware of the N-LIST services, whereas students from government colleges were not. Most of the students learnt to use N-List services from library staff. The most popular e-journals were Economic and Political Weekly and Indian Journal. According to the author, students should be taught how to use the advance search option in the N-LIST services search menu to find relevant information. To make greater use of the widely available electronic information resources, students should improve their search skills.

(Narayanaswamy, 2016) conducted a study on the use and awareness of N-List services by degree colleges in Bangalore. Many students and faculty were introduced to the N-LIST e-resource services by librarians and were utilising it once a week. Nearly 40 percent users access e-books published by Springer. N-list is used by faculty members to prepare and access teaching resources as well as read and write research articles. Students use N-LIST to complete assignments and prepare for Seminars, Conferences, and Workshops. Majority of the users rated N-List quality as very good. The study provides suggestions that (i) regular user awareness programme/ orientation programme, seminars, workshops to be organised for effective usage of N-LIST e-resources. (ii) the faculty and students should be trained in using advance search options available in search menu of N-LIST e-resources for retrieval of relevant information (iii) the infrastructure in the college computer centres should be further improve for providing better N-LIST e-resources (iv) the faculty members should further improve their information searching skills to make better use of largely available electronic information resources.

(Dhuri& Lobo, 2021) conducted a study entitled "N-List E-Resources: A major boon to the user community during Covid-19 pandemic era". The data was collected using an online survey using a Google forms questionnaire from library users (students, research scholars and teachers) at academic colleges across Goa. The results showed that the librarian is regarded as the primary source of information on the N-LIST programme. During the Covid-19 outbreak, users believe N-LIST e-resources are the ideal replacement for traditional/printed resources. Users used N-LIST e-resources on a weekly basis prior to the pandemic, but on a daily basis during the pandemic. The e-resources were mostly utilised for assignments, project/research studies, and for preparation of study notes. The study shows that N-LIST e-resources has significantly contributed to the demands of the college library users as the vast collection of e-resources can be accessed from anywhere and at any time through remote access.

(Talmale&Humbre, 2012) evaluated the N-LIST project in "SWOT analysis of N-LIST programme". The SWOT Analysis technique was used to review the services of the N-LIST Programmes. The strength, weakness, opportunity and threats of N-LIST programme were analysed. SWOT analysis helps in evaluating the strengths to overcome weakness, using opportunities to overcome threats and taking appropriate strategic actions. SWOT is a useful evaluation technique and is applied in Library and

information science field to justify the five laws of library science. According to them, changes take place due to many factors such as technology, demographic features, economic factors, etc. Many problems can be solved if member libraries agree to use common library automation systems, standards and formats.

(Panda, 2021) studied the usage and usefulness of N-LIST e-resources among post graduate students at Punjab Colleges. The finding shows that students are aware of N-LIST consortium. The study highlights that though the student are well aware of N-LIST e-resources, only a few use them for their benefit. The students know about N-LIST from the teachers and use the e-resources once a week. Among the e-resources, e-journals have a greater number of users than e-books. Indian journals among the e-journals and e-library among the e-books have the maximum usage. The availability of irrelevant information and a lack of technical knowledge are the major problems faced by the PG students while accessing N-LIST e-resources. To overcome this problem, college libraries should conduct hands-on-training programmes & workshops on how to use e-resources.

(Sinha, Bhattacharjee & Bhattacharjee, 2013) found that the majority of respondents were unaware of N-LIST services in his study entitled "ICT and internet literacy skills for accessing to e-resources available under N-LIST programme: case study of college library users of Barak Valley, South Assam". As a result, the library staff should conduct user studies on regular basis. The two most popular e-resource publishers are Oxford University Press and Mc Grill Hill. Slow internet speed, a lack of printing option, and difficulties accessing NLIST services are the most common issues encountered by users. It has been suggested that ICT infrastructure be improved. The study recommended that college and university librarians, as well as INFLIBNET centres, conduct user education programmes on a regular basis.

(Chandrakar& Arora, 2011) the University Grants Commission(UGC) established the Information & library Network(INFLIBNET) to act as a nodal agency for the networking of libraries and information centres in universities, institutions of higher learning, and research and development institutions in India with the goal of promoting scholarly communication. Being a nodal agency, the INFLIBNET Centre has taken various initiatives for delivering the electronic resources to the door steps of the academic community and institutions of the country. The paper elaborates the

various initiatives of INFLIBNET Centre for providing information resources to the academic community. UGC- INFONET Digital Library Consortium, Open Journals Academic System (OJAS), Shibboleth, National Library and Information Services Infrastructure for Scholarly Content (N-LIST), J-gate Custom Content for Consortium are the five initiatives discussed. The paper also shows the impact of the initiatives on higher education of the country.

(Pandey, 2018) UGC has established INFLIBNET Centre primarily for the information and library network activities in higher education in India. The paper presented the impact of INFLIBNET in the development of university libraries in study conducted by researcher in select university libraries in Uttar Pradesh. The impact of INFLIBNET is measured by conducting survey in selected university libraries in Uttar Pradesh in north India. The purpose of this study is to gather information regarding the automation, modernization, and hardware and software infrastructure provided by INFLIBNET. The study discloses that majority of libraries have used INFLIBNET's services to meet their automation and e-resource requirements.

(Arora, Patel & Hasan, 2015) defines shibboleth system as a standard based on an open source software package that allows authorised users to be authenticated using an organization's internal identity and access management system. Shibboleth establishes a trust relationship, allowing for federated, single- sign-on access and better data security and ease for end users. Because most universities and colleges lack the technical know-how and ICT infrastructure needed to set up their own identity provider services, INFED@INFLIBNET would sacts as an IDP for all its member institutions. The INFLIBNET Centre has taken on the duty of authenticating users from all 6,000 colleges in India as an implementing agency for the UGC-INFONET Digital Library Consortium and N-LIST programmes, as neither these colleges nor their affiliating institutions had done so previously.

(Krishnamurthy&Awari, 2015) INDCAT is an important bibliographic database of books, journals, and doctoral theses of Indian Universities and major institutions of higher education, hosted by INFLIBNET. In their article "Research productivity of Social Science departments as reflected in INDCAT: a study of Karnataka University, Dharwad" they examined the research contribution of Department of Social Science,

Karnataka University. 729 doctoral theses records available in INCAT from the Department of Social Science at Karnataka University, Dharwad during the period of April 24, 2013 to December 27, 2013 were accessed. According to the findings, among the numerous departments of social science, the economics department has made the most contributions, followed by department of history. The INDCAT bibliographic database is a valuable source bibliographic data in India. It should be updated on a regular basis, and steps should be taken to make it mandatory to provide records of doctorate theses as soon as possible after the award of PhD degrees at the various universities/ institutions that fall under its jurisdiction.

(Vijayan &Sudhi, 2020) They attempted to analyse research in progress in Indian universities and institutions that had been submitted to ShodhGangotri in a study titled "Indian research in progress: an analysis of ShodhGangotri repository. The goal of this research was to find out how many universities in India were uploading research to the ShodhGangotri repository. It goal is to analyze, region-wise, discipline wise, category wise, university wise, state- wise contributions, to identify the universities uploading and to investigate those universities not uploading. The data was gathered from the ShodhGangotri website. Up till December 31st, 2019, 6923 synopses have been detected. According to data, only 7.28 percent of Indian Universities post synopses, with the north zone contributing for 35.54 percent. The most synopses were submitted to the Humanities and Social Science discipline. More than half of the universities uploading data were from Rajasthan state, and more universities were from Himachal Pradesh. The larger portions of private universities that do not contribute were from North India.

(Parmar, 2021) Recognizing the importance of quality in the higher education system and research, the Ministry of Education, Government of India, has developed a programme called " ShodhShuddhi " that provides access to Plagiarism Detection Software to 1000+ institutions. The paper "ShodhShuddhi: an initiative to curb Plagiarism in Indian Academic community" investigates plagiarism and state wise usage of the ShodhShushi project, which provides plagiarism detection software to institutions of higher learning throughout the nation. The author briefly mentions what plagiarism is, the regulation and penalties as per UGC draft. In order to improve awareness of academic misconduct and promote academic honesty and integrity in India's higher education system, university authorities should organise more

ShodhShuddhi awareness and training programmes among research scholars and academicians.

(Panda & Kannan, 2016)VIDWAN is a premier subject expert's database and national research network in India. It is an excellent source of background information on subject experts working at leading academic institutions and an R & D organisation involved in teaching and research and provides and provides a platform for finding potential experts with similar expertise. The paper " VIDWAN- an subject database and national researcher's network in India: an overview" explores the application of emerging technologies in the VIDWAN subject expert database and discusses, in particular, the expert's selection methods, database feature and functionalities, and its benefits. The article reviewed the current situation of the VIDWAN subject expert database and national researcher's network in India and recommends populating the database not only in India but also worldwide and in all scientific areas. Universities, R& D organisations, and other academic institutions all play an important role in populating this database.

(Nayek, 2018) With the advancement of the Internet, MOOCs (Massive Open Online Courses) have become a popular platform, and India is no exception. As a result of this, the Government of India launched the SWAYAM (Study Webs of Archive-learning for Young Aspiring Minds) programme. The program's goal is to provide all with free access to the best teaching and learning tools available. To know about the awareness among LIS professionals/ students about SWAYAM and the popularity of SWAYAM, an online survey was conducted among Library and Information Science (LIS) professionals and students using social media platforms. The results show that most of the professionals and students are interested in SWAYAM and have enrolled in LIS courses offered there. It also shows that video lectures and digital library are the most preferred. Furthermore, as compared to other courses, the quantity of LIS course is observed to be lower. The paper concludes that more awareness is needed and more LIS courses should be introduced.

(Saloi, 2021) In her study evaluated the contribution made by central Universities of Northeast India to the open access repository of Shodhganga by INFLIBNET. The author discovered that, as of the date collection, nine of the ten central universities of Northeast India had already signed the Shodhganga repository's MoU and were all

submitting ETDs to the repository. North Eastern Hill University (NEHU) took the first initiative to sign an MoU with Shodhganga, and it now has the most contributions in the repository, with 2, 3093, and is ranked top among all the central universities of Northeast India. The Department of Education of North Eastern University has the highest number of contributions in the repository of Shodhganga, followed by Department of Botany of Assam University. The most popular languages for theses and dissertations at Northeast India central universities was English.

(Tamizhchelvan&Anbalagan, 2020) The study of usage of e-resources is available through e-ShodhShindhu (eSS) Consortium for every institute members provided. InfiStats is a platform developed by the INFLIBNET Centre for the purpose of monitoring the usage statistics of various e-resources accessed by the member institutes. The objectives of the study were to find out the year wise access of resources, to identify the usage of e-resources, find the number of downloads/views, and identify the popular publishers. To study the usage trends, a usage statistics of nine full-text databases during 2012-2019. According to the study, usage of e-resources has increased from 2012 to 2016 and then decreased. Users from science faculty members and researchers in their field are more active in using e-databases than those from the arts. The usage of subject-specific databases is more dominant than the use of multi- subject databases. This usage analysis is useful for Library professionals to find important e-journals and databases for proper funds implementation. The remote access facility was given to faculty members and research scholars in order to improve the use of e-resources.

(Panda, 2020) Open Educational Resources (OER) are a new means of learning in the current days without any geographical barrier and also free of cost. There are two types of OER depending upon the way it approaches its users, OCW and MOOCs. The purpose of this article is to look into how e-PG Pathshala is used in terms of geographical coverage and subject areas. The objectives of the study were to determine the total usage of e-PG Pathshala, to analyze the dynamic nature of e-PG Pathshala usage statistics, to assess the normalcy of the data of the three variables e.g. subject- wise uploaded module, total visitors, and visitors/module. The finding shows that the state of Uttar Pradesh covers the majority of e-PG Pathshala visitors in India, whereas Delhi and New Delhi have the highest visitor's coverage. In the subject field, LIS has the most visitors (16%), followed by Chemistry (9%), and English (7%).

Among the top ten LIS modules, the General Introduction to Course on Knowledge Society module gets the most visitors, as majority of the students come from different subject fields and want to know about the basic of LIS.

(Panda, 2016) INFLIBNET Centre is working hard to establish open access institutional repositories and platforms to support open access publishing at India's higher learning institutions, such as universities, colleges, R & D research centres, as well as providing training in various aspects of new technology to achieve these goals, and encouraging library and information professionals to develop their knowledge in digital content creation, digitization, and preservation. Open access journals and institutional repositories are currently the two main avenues of open access publication in countries like India. The INFLIBNET Centre various open access initiatives in supporting the intellectual and scientific communities in the country are discussed in the article. The current state, benefits, and impact on universities and its users are discussed in the paper.

Chapter III

INFLIBNET: Objectives, Activities and Services

INFORMATION AND LIBRARY NETWORK (INFLINBNET)

The INFLIBNET Centre was initiated as a major programme of University Grants Commission, in 1991. In May 1996, the centre was established as an independent, autonomous Inter-University Centre (IUC) of the University Grants Commission (UGC) with an objective to co-ordinate and implement nationwide high speed network using state of the art technologies for connecting all university libraries in the country. Major activities and services of the Centre include automation of academic libraries and information centres, creation of union databases of resources available in academic libraries, promote resource sharing among academic libraries, promote information access and support scholarship. The Centre acts as a nodal agency for networking of libraries and information centres in universities, institutions of higher learning and R& D institutions in India with an aim to promote scholarly communication.

Objectives

INFLIBNET programmes are directed towards modernization of libraries and information centres and establishment of a mechanism for information transfer and access, support scholarship, learning and academic pursuits. INFLIBNET was established with following objectives:

i. To promote and establish communication facilities to improve capability in information transfer and access that provide support to scholarship learning, research and academic pursuits through cooperation and involvement of agencies concerned.

- To establish a computer communication network for linking libraries and information centres in universities, colleges, UGC information centres, institutions of national importance and R& D institutions, etc. avoiding duplication of efforts:

- To promote and implement computerization of operations and services in the libraries and information centres of the country, following a uniform standard;

- To evolve standards and uniform guidelines the techniques, methods, procedures, computer hardware and software, services and promote their adoption in actual practice by all libraries, in order to facilitate pooling, sharing and exchange of information towards optimal use of resources and facilities;

- To evolve a national network interconnecting various libraries and information centres in the country and to improve capability in information handling and service;

- To provide reliable document collection of libraries by creating on-line union catalogue of serial, theses /dissertation, book, monographs and non-book materials in various libraries in India;

- To provide to bibliographic information sources with citations, abstracts, etc. through indigenously created databases of the Sectoral Information Centres of NISSAT, UGC Information Centres, City Networks and such others and by establishing gateways for on-line accessing of national and international databases held by national and international information networks and centres respectively;

- To develop new methods and techniques for archival of valuable information available as manuscripts and information documents in different Indian languages, in the form of digital images using high density storage media;

- To optimize information resource utilization through shared cataloguing, Inter- library loan service, catalogue production, collection development and thus avoiding duplication in acquisition to the extent possible;

- To enable the users dispersed all over the country, irrespective of the location and distance, to have access to information regarding serials, theses/ dissertation, books, monographic and non- book, monographic and

non-book materials by locating the sources available and to obtain it through the facilities of INFLIBNET and union catalogue of documents;

- To create databases of projects, institutions, specialists, etc. for providing on- line information service;
- To encourage co-operation among libraries, documentation centres and information centres in the country, so that the resources can be pooled for benefits of helping the weaker resource centres by stronger ones; and
- To train and develop human resources in the field of computerized library operations and networking to establish, manage and sustain INFLIBNET.

ii. To facilitate academic communication amongst scientists, engineers, social scientists, academics, facilities, researchers and students through electronic mail, file transfer, computer/audio/video conferencing, etc.

iii. To undertake system design and studies in the field of communications, computer networking, information handling and data management;

iv. To establish appropriate control and monitoring system for the communication network and organize maintenance;

v. To collaborate with institutions, libraries, information centres and other organizations in India and abroad in the field relevant to the objectives of the Centre;

vi. To promote R&D and develop necessary facilities and create technical positions for realizing the objectives of the centre;

vii. To generate revenue by providing consultancies and information services; and

viii. To do all other such things as may be necessary, incidental or conducive to the attainment of all or any of the above objectives.

ACTIVITIES & SERVICES

i. e-Consortium

- e-ShodhSindhu

e-shodhsindhu was created after the recommendation of an Expert Committee of MHRD by merging three consortia initiatives, namely UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE Consortium. The e-shodhSindhu is a consortium for higher education electronics resources. It provides access to e-resources (10000+ full-text journals, 164300+ e-books and 4 databases through e-ShodhSindhu and 600000 e-Books through NDL) to universities, Colleges and Centrally Funded Technical Institutions(CFTIs) in India.

- **N-LIST**

The National Library and Information Services Infrastructure For Scholarly Content(N-LIST) project is jointly executed by e-shodhSindhu Consortium, INFLIBNET Centre and the INDEST-AICTE Consortium, IIT Delhi provides for (i) cross-subscription to e-resources subscribed by the two Consortium, i.e. subscription to INDEST-AICTE resources for universities and e-shodhSindu resources for technical institutions (ii) access to selected e-resources to colleges. The N-LIST project provides access to e-resources to students, researchers and faculty from colleges and other beneficiary institutions through server(s) installed at the INFLIBNET Centre. The authorized users from colleges can access e-resources and download articles required by them directly from the publisher's website once they are duly authenticated as authorized users through servers deployed at the INFLIBNET Centre.

- INFED

The INFLIBNET Access Management Federation (INFED) is the first and only access management federation in India, based on Shibboleth, a standard- based open-source software, for authenticating authorized users from colleges, universities and other institutions in India.

- InfiStats

The InfiStats Usage Statistics Portal is a platform for harvesting usage statistics from the publisher's website, access to member institutes and reminders for low usage.

- ShodhShuddhi

The Ministry of Education, Government of India has initiated a progammeShodhShuddhi which provides access to Plagiarism Detection Software (PDS) to all universities/ institutions in India since 1st September 2019. 1000+ institutions are identified which includes Central Universities, State Universities, Deemed to be University, Private Universities, Centrally Funded Technical Institutions(CFTIs) and Inter-University Centre(IUCs) of UGC. Under this initiative, URKUND a web-based plagiarism detection software system is being provided to all users of universities/ institutions in the country. This initiative is formally launched on 21st September 2019.

ii. **Library Automation**

- IndCat

The IndCat is unified online catalogues of Books, Theses and Journals available in major university libraries in India. More than 1.25 crore bibliographic record of books.

- SOUL

The Software for University Libraries SOUL is a state- of-art Integrated Library Management System for library automation. Most installed software in the country.

iii. <u>e-Content and e-Learning</u>

- e-PGPathshala

e-PG Pathshala is a project of the MHRD, under its National Mission on Education through ICT (NME-ICT) for development of e-contents at postgraduate level. It covers 77 subjects across all disciplines of social sciences, arts, fine arts and humanities, natural and mathematical sciences, linguistics and languages. It caters over 22000+ modules comprising of text and video in these subjects.

- Vidya-Mitra

The Vidya-Mitra is an online learning portal for all the e-content projects developed under the National Mission on Education through Information and Communication Technology (NME-ICT). The portal provides facility to search and browse all hosted content wherein a learner can easily access the desired material including audio/ video learning material, textual material, multimedia- enriched materials etc. through a single interface. Moreover, features of faceted search, usage statistics, project-wise access, My-Space are incorporated in this portal.

- SWAYAM PRABHA

The SWAYAM PRABHA is a group of 34 DTH channels devote to telecasting of high- quality educational programmes on a 24x7 basis using the GSAT-15 satellite. Every day, there will be new content for at least (4) hours which would be repeated 5 more times in a day, allowing the students to choose the time of their convenience. The channels are uplinked from BISAG, Gandhinagar. The contents are provided by NPTEL, IITs, UGC, CEC, IGNOU, NCERT and NIOS. The INFLIBNET Centre maintains the web portal.

- UGC-MOOCs- A Vertical of SWAYAM

The SWAYAM is a programme initiated by the Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. The objective of this effort is to take the best teaching-learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained touched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

iv. Open Access Initiatives

- Shodhganga

The Shodhganga is a reservoir of Indian theses. It provides a platform for research students to deposit their Ph.D. theses and make it available to the entire scholarly community in open access. The repository has the ability to capture, index, store, disseminate and preserve ETDs submitted by the researchers.

- ShodhGangotri

The ShodhGangotri is an initiative that compliments “ShodhGanga” is a repository of full-text theses submitted to universities in India, ShodhGangotri hosts synopsis of research topic submitted to the universities in India by research scholars for registering themselves for the Ph.D. programme. Shodhgangotri is now a vibrant project covering not only research in progress but also hosts Major-Minor Research Project/ Post Doctorate Fellowship/Emeritus Fellowship etc.(MRPs/PDFs/Fellowships). The repository on one hand, would reveal the trends and directions of research being conducted in Indian Universities, on the other hand, it would avoid duplication of research. Synopsis in ShodhGangotri would later be mapped to fll-text theses in ShodhGanga. As such, once the full-text thesis is submitted for a synopsis, a link to the full-text theses would be provided from ShodhGangotri to ShodhGanga.

- IR@INFLIBNET

The Institutional Repository of INFLIBNET Centre contains articles published in all conventional proceedings of INFLIBNET Centre. It also contains various training material, press clippings, newsletters etc.

- InfoPort

The INFLIBNET Centre promotes open access to Indian scholarly content through the InfoPort- A Subject Gateway for Indian Electronic- Resources. While Centre uses and promotes intute, a well-known subject gateway developed by MIMAS, UK, the InfoPort is designed and developed to serve as a comprehensive gateway to all Indian scholarly content. The gateway open-ups the Indian scholarly content scattered over the Internet through an integrated interface that supports search, browse and multiple listing. The InfoPort selectively catalogues online resources of Indian origin on diversified subjects available in open access through an elaborate process of testing and evaluation. The Centre proposes to collaborate with librarians and scholars in college and universities in the process of identification and selection of resources.

v. Scholarly Network

- Vidwan

The Vidwan is the premier database of profiles of scientists/ researchers and other faculty members working at leading academic institutions and other R& D

organization involved in teaching and research in India. It provides important information about expert's background, contact address, experience, scholarly publications, skills and accomplishments, researcher identity, etc. the database developed and maintained by Information and Library Network Centre(INFLIBNET) with financial support from the National Mission on Education through ICT (NME-ICT). The database would be instrumental in the selection of panels of experts for various monitoring and evaluation purposes.

- Indian Research Information Network System (IRINS)

The IRNIS is web-based Research Information Management (RIM) service developed by the Information and Library Network (INFLIBNET) Centre in collaboration with Central University of Punjab. The portal facilitates the academic, R&D organizations and faculty members, scientists to collect, curate and showcase the scholarly communication activities provide an opportunity to create the scholarly network. The IRNIS would support to integrate the existing research management system such as HR system, course management, grant management system, institutional repository, open and commercial citation databases, scholarly publishers, etc. it has integrated with academic identity such as ORCID ID, Scopus ID, Research ID, Microsoft Academic ID, Google Scholar ID for ingesting the scholarly publication from various sources.

- Shodh- Chakra

Shodh- Chakra is an initiative of Information and Library Network (INFLIBNET) Centre under the guidance of University Grants Commission (UGC) to help the academic community during their research life cycle. Shodh-Chakra provides a unique apace to the the researcher, guide/ supervisor and university to manage the research lifecylcle of a research scholar. This will work as a digital workspace wherein researchers can collect, store, organize and cite their research work. The Shodh- Chakra would help researchers to create their profile and manage their preferences. The process of using the portal starts with signing a MoU between University and INFLIBNET Centre. The university/ institute have to provide valid information of the researcher and supervisor. Further, researcher can login into system and avail the features of Shodh-Chakra. The system will generate login credentials to researchers, supervisors and universities.

vi. Project and Consultancy

- ICSSR Data Service

The ICSSR Data Service is the culmination of the signing of Memorandum of Understanding (MoU) between Indian Council of Social Science Research (ICSSR) and the Ministry of Statistics and Programme Implementation (MoSPI). The MoU provides for setting-up of ICSSR Data Service: Social Science Data Repository" and hosts NSS and ASI datasets generated by MoSPI. Under the initiative, social science research institutes, NGOs, individuals and others dealing with social science research are also being approached to deposit/ provide their research datasets for hosting into the repository of ICSSR Data Service. The ICSSR Data Service includes social science and statistical datasets of various national- level surveys on debt & investment, domestic tourism, enterprise survey, employment, housing condition, household consumer expenditure, health care, etc., into its repository. ICSSR Data Service aims to facilitate data sharing, preservation, accessibility and reuse of social science research data collected from the entire social science community in India & abroad. The information and Library Network (INFLIBNET) Centre, Gandhinagar has been assigned the task of setting- up the repository.

- National Institutional Ranking Framework (NIRF)

The National Institutional Ranking Framework (NIRF) was approved by the MHRD (now renamed as Ministry of Education) and launched on 29th September 2015. This framework outlines a methodology to rank institutions across the country. The methodology draws from the overall recommendations broad understanding arrived at by a Core Committee to identify the broad parameters for ranking various universities and institutions. The parameters broadly cove Teaching, Learning and Resources, Research and Professional Practices, Graduation Outcomes, Outreach and Inclusivity, and Perception.

- Atal Ranking of Institutions on Innovation Achievements (ARIIA)

The Atal Ranking of Institutions on Innovation Achievements (ARIIA) is an initiative of Ministry of Education(MoE), Government of India to systematically rank all major

higher educational institutions and universities in India on indicators related to "Innovation and Entrepreneurship Development" amongst students and faculties.

- E-NBA

The National Board of Accreditation (NBA) has assigned the task to develop a full-fledged online platform for accreditation workflow management system for technical institutes.

- National Testing Agency (NTA)

The National Testing Agency (NTA) has been established as a premier, specialist, an autonomous and self-sustained testing organization to conduct entrance examinations for admissions and recruitment has always been a challenge in terms of matching with research based international standards, efficiency, transparency and error-free delivery. The National Testing Agency is entrusted to address all such issues using best in every field, from test preparation, to test delivery and to test marking.

- Study in India

The Study in India program was integrated by EdCIL (India) Limited, a mini-Ratna Category-I CPSE company based in India. Launched in April 2018, the study in India program receives applications from across the following regions- SAARC, Africa, South East Asia, Central Asia, and the Middle –East. In an abundant and extensive higher education system such as India, the Study in India interface is prime intermediary for students to explore, connect, and apply to various top-ranked institutions in the country.

- Ek Bharat Shreshtha Bharat

The Ek Bharat Shreshtha Bharat programme aims to enhance interaction and promote mutual understanding between people of different states/UTs through the concept of state/ UT pairing. The state carry out activities to promote a sustained and structured cultural connect in the areas of language learning, culture, traditions & music, tourism & cuisine, sports and sharing of best practices etc.

- **PMMMNMTT**

The Pandit Mohan Malviya National Mission on Teachers and Teaching (PMMMNMTT) is a central sector scheme with All-India coverage. The proposed Mission is envisaged to address comprehensively all issues related to teachers, teaching, teacher preparation and professional development. The Mission would address, on the one hand, current and urgent issues such as the supply of quantified teachers, attracting talent into the teaching profession and raising the quality of teaching in schools and colleges. On the other, it is also envisaged that the Teacher Mission would pursue long term goal of building a strong professional cadre of teachers by setting performance standards and creating top class institutional facilities for innovative teaching and professional development of teachers.

vii. Conventions

- CALIBER

CALIBER an international Convention organized by the INFLIBNET Centre at different parts of the country in collaboration with universities, invites high- quality papers on research and technical works, case studies, technology updates etc. related to the themes and sub-themes of the convention mentioned below. The convention provides a unique forum to the library and information professionals, teachers, IT professionals, consultants and users involved in automation and networking of libraries as well as information providers to come together and interact on the subjects of mutual interest.

- PLANNER

Promotion of Library Automation and Networking in North-Eastern Region (PLANNER) is a bi-annual convention with a special focus to uplift academic libraries in the North-Eastern region, India in the aspect of library automation and networking. The event is organized by INFLIBNET Centre along with the universities located in the respective North-Eastern States. The convention is a forum comprising of practicing and teaching libraries along with experts and students in the LIS profession who will deliberate upon a wide range of topics based upon the theme that is pertinent to library automation and modernization of libraries with a focus on the North-Eastern States of India.

- **ICT Skills Development Programmes**

Imparting training to manpower working in the university and college libraries in the use of IT is an important objective of the Centre and has been given due priority. INFLIBNET Regional Training Programme on Library Automation (IRTPLA) is one of the popular training programmes organized by the Group in collaboration with colleges and universities regularly. User Awareness Training Programmers on e-resources subscribed under the e-ShodhSindhu project are being conducted across the country in collaboration with the universities. Besides, the Centre also conducts short-term and long- term specialized training programmes of variable duration depending upon the requirements of users. National and international conventions called PLANNER in North-eastern regions and International CALIBER in various states in India are being organized biannually as regular activity of the Centre. The Centre has also conducted training programmes on SOUL Installation and Operations for Libraries.

Chapter IV

Data analysis and interpretation

Data was collected by survey method and is analysed in this chapter. N numbers of questionnaires were sent to librarians and faculty members of various academic institutes of Goa in physical form as well as through Google forms. Out of which 32 responses were received.

Researcher has surveyed 32 respondents which include librarians and faculty members of academic institutions of Goa. Their opinion about the role of INFLIBNET in enhancing quality of education in academic institutions of Goa was considered.

4.1 Gender and category wise distribution of respondents

Table 1: Gender and category wise distribution of respondents

Category	**Librarian**		**Faculty**	
Gender	Frequency	Percentage	Frequency	Percentage
Male	10	58.8	6	40
Female	7	41.1	9	60
Total	17	100	15	100

The above table depicts that the study sample size consists of 32 respondents out of which 17 are librarians and 15 are faculty members. Among the respondents 16 are male and 16 are females.

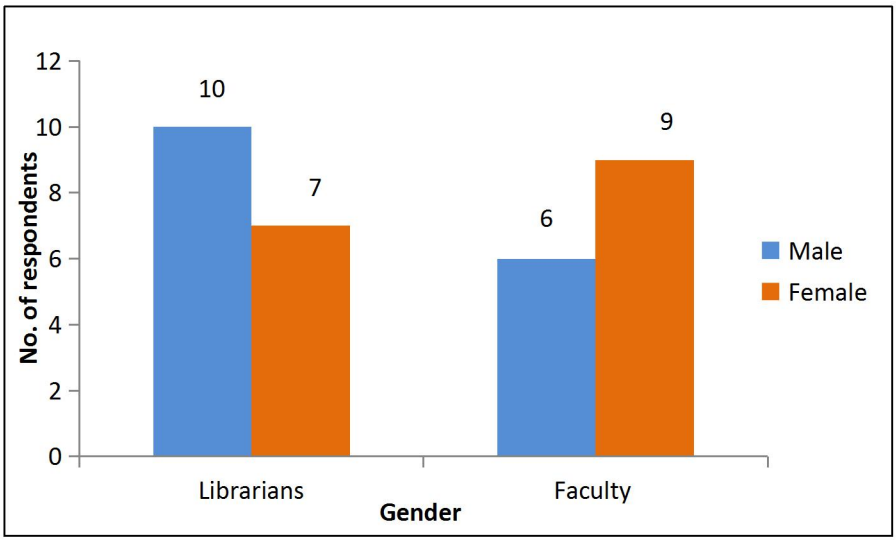

Figure1: Graphical representation of data in table 1

4.2 Awareness about INFLIBNET

Table 2: Shows respondents' awareness about INFLIBNET

Awareness about INFLIBNET	Librarians		Faculties		Total
	Frequency	Percentage %	Frequency	Percentage %	
Aware	17	100	15	100	32
Not aware	0	0	0	0	0

It is evident from the above table that all the 32 (100%) respondents (librarians and faculty members) are aware of INFLIBNET.

4.3 Source of Awareness about INFLIBNET

Table 3: Source of awareness about INFLIBNET

Source of Awareness	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
Librarian	9	52.9	4	26.7
College website	2	11.8	2	13.3
Internet	5	29.4	7	46.7
Library Orientation	1	5.9	2	13.3
Total	17	100	15	100

It was observed that 9 (52.9%) respondents learned about INFLIBNET via librarians, followed by 5 (29.4%) from the Internet, while 2 (11.8%) opted for college website and 1(5.7%) from library orientation. When it came to faculty members majority of the respondents, (i.e.) 7(46.7%) choose Internet, followed by 4 (26.7%) who were made aware by the librarian. Another 4(26.7%) respondents came to know about INFLIBNET through library orientation, and the least 2 (13.3%) through college website.

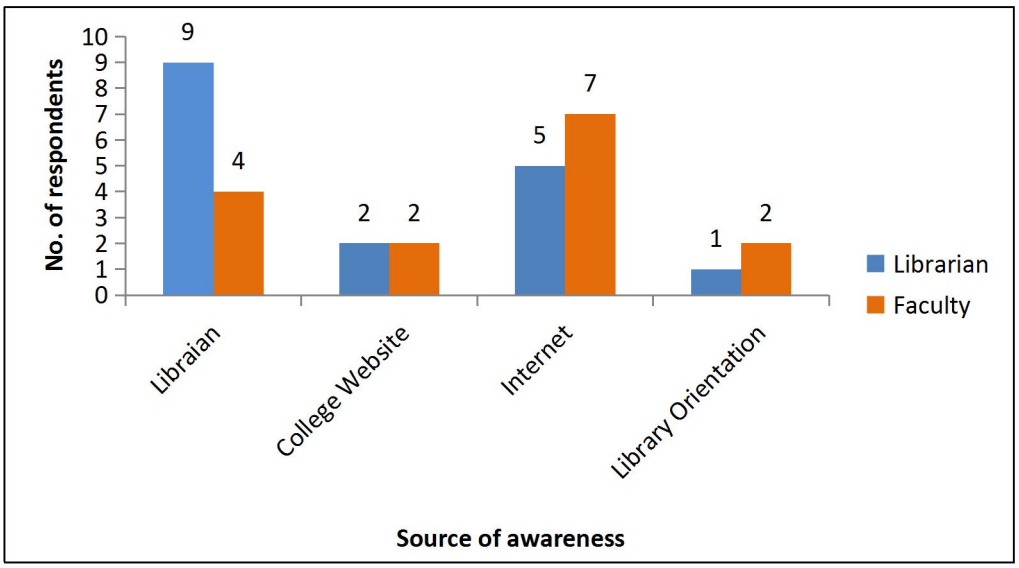

Figure 2: Graphical representation of data in table 3

4.4 Awareness about various INFLIBNET programmes

Table 4: Awareness about various INFLIBNET programmes by respondents

Programmes	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage%
e-ShodhSindhu	17	100	5	33.3
N-LIST program	16	94.1	11	73.3
ShodhShuddhi	14	82.4	1	6.7
Shodhganga	17	100	14	93.3
ShodhGangotri	16	94.1	5	33.3
IR@INFLIBNET	12	70.6	3	20
InfoPort	8	47.1	0	0
e-PG Pathshala	15	88.2	6	40
Vidya Mitra	11	64.7	0	0
SWAYAM	17	100	12	80
Vidwan	14	82.4	3	20

The respondents were given the option to choose more than one indicator. With respect to the librarians, all were familiar with e-ShodhSindhu, Shodhganga and SWAYAM, as shown in the table above. ShodhGangotri and the N-List program were known by 16 (94.1%). E-PG Pathshala was familiar to 15 (88.2%), while Vidwan and ShodhShuddhi are known by 14 (82.4%). A total of 12 (70.6%) knew about IR@ INFLIBNET, while Vidya Mitra was known to 11 (64.7%). The least popular program amongst librarians was InfoPort. Amongst the faculty members Shodhganga was known by majority of faculty members (i.e.) 14 (93.3%), SWAYAM 12 (80%), and N-LIST is known by 11 (73.3%).

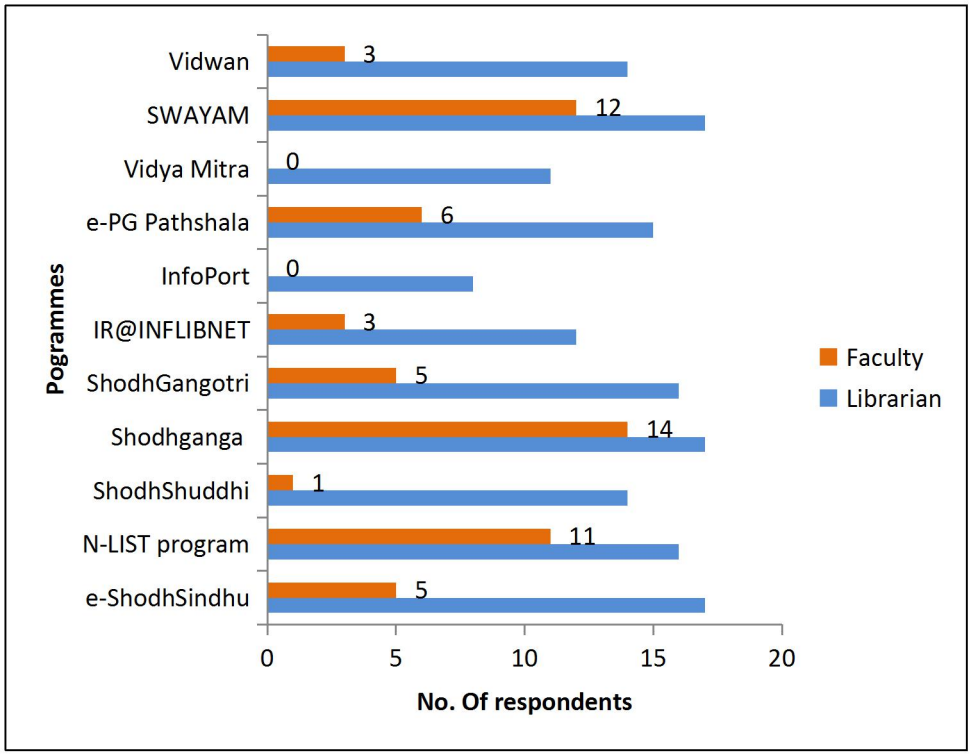

Figure 3: Graphical representation of data in table 4

4.5 Frequency of accessing INFLIBET e-resources

Table5: Frequency of respondents using INFLIBNET e-resources

Frequency of accessing INFLIBET resources	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
Daily	6	35.3	0	0
Once in a week	7	41.2	4	26.7
Once in a month	2	11.8	3	20
Occasionally	2	11.8	8	53.3
Total	17	100	15	100

The table reveals the frequency of respondents accessing INFLIBNET resources. Majority of librarians, 7 (41.2%), use the INFLIBNET resources once a week, while 6 (35%) use them daily. Equal number ofrespondents' access once a month and occasionally. It is evident that majority of the faculty members used the resources only occasionally, i.e., 8 (53.3%), followed by 4 (26.7%) who choose once a week. Only 3 (20%) accessed INFLIBNET resources once a month.

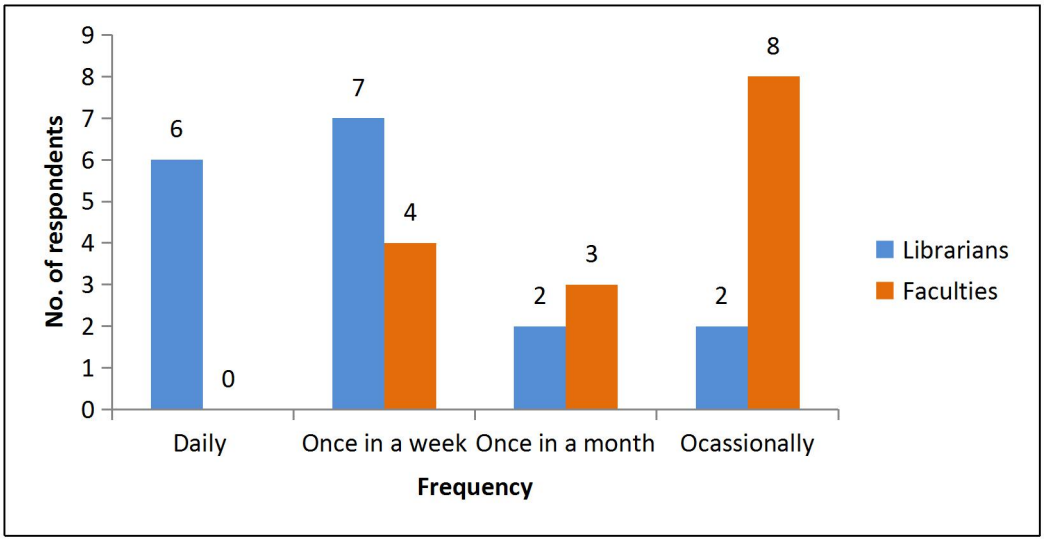

Figure 4: Graphical representation of data in table 5

4.6 Time spent to use INFLIBNET e-resources

Table 6: Time spent by respondents in accessing INFLIBNET e-resources

Time spent	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
Less than 1 hr	5	29.4	7	46.7
2-3 hrs	12	70.6	7	46.7
4-5 hrs	0	0	1	6.7
More than 5 hrs	0	0	0	0
Total	17	100	15	100

The above table indicates the amount of time spent by respondents on accessing the INFLIBNET resources. The majority, i.e., 12(70.6%) of the respondents, invest 2-3 hrs each week for using the INFLIBNET resources. 5(29.4%) respondents spent less than an hour. In case of faculty members, 7(46.7%) spent 2-3 hrs and, again 7(46.7%) spent less than one hour accessing INFLIBNET resources. Only 1(6.7%) spent 4-5 hrs accessing the INFLIBNET resources.

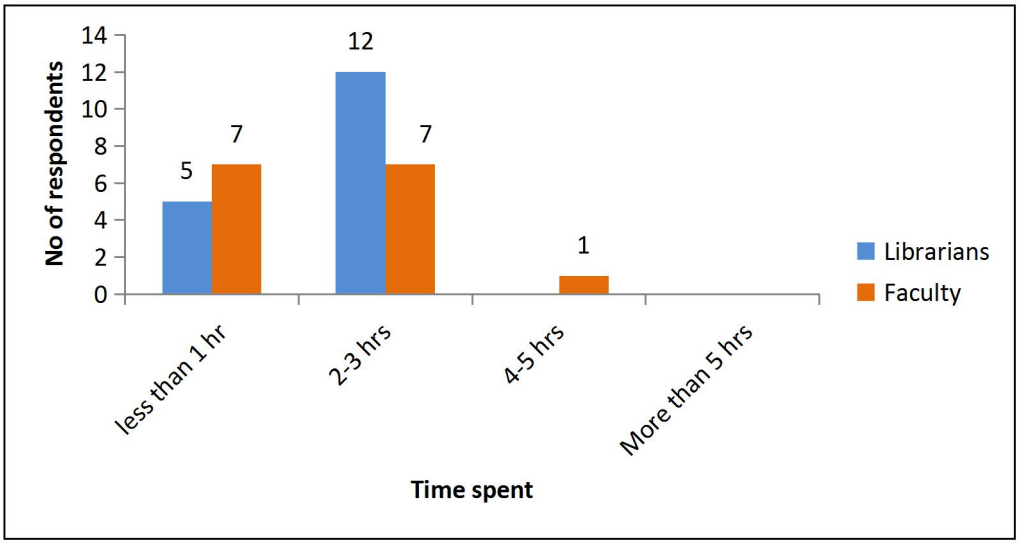

Figure 5: Graphical representation of data in table 6

4.7 Purpose of using INFLIBNET e-resources

Table 7: Purpose of using INFLIBNET e-resources by respondents

Purpose	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
Assignment / Project	4	23.5	3	20
To update subject information	10	58.8	9	60
For writing research articles	12	70.6	12	80
Course study	2	11.8	2	13.3
Other	2	11.8	1	6.7

From table, it can be noted that the majority of the librarian respondents, 12 (70.6%), make use of the INFLIBNET resources for writing research articles. About 10 (58.8%) of the respondents use it to update subject information. For the purpose of assignments/projects, INFLIBNET resources are used by 4 (23.5%) of the respondents. Very few respondents 2 (11.8%) use it for course study, followed by 2 (11.8%) respondents for other purposes. The main purpose of faculty members using INFLIBNET resources is to write research articles. 9 (60%) of the respondents use it to update subject knowledge. 3 (20%) of the faculty members use it for assignment/ project. Only 2(13.3%) of the faculty members use it for course study. Very few are using it for other purposes.

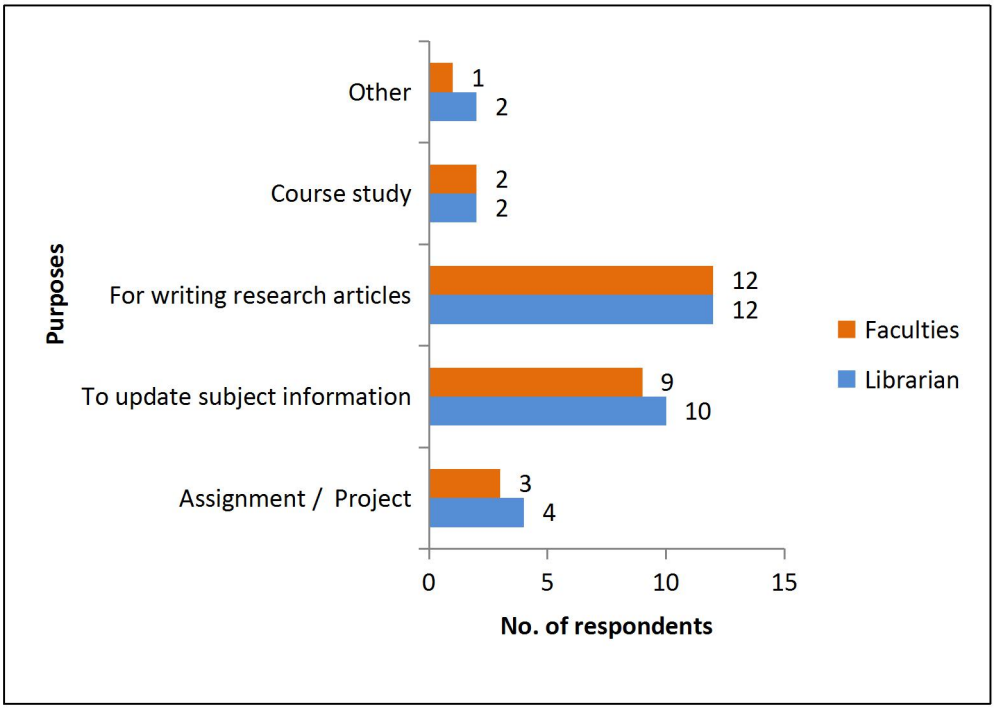

Figure 6: Graphical representation of data in table 7

4.8 Satisfaction with INFLIBNET e-resources

Respondents were instructed to rate the statement on a scale of 1 to 5 where 1 = Poor, 2 = Average, 3 = Good, 4 = Satisfied, 5 = Highly satisfied.

Table 8: Shows the satisfaction levels of e respondents with INFLIBNET resources.

Satisfaction Indicators	Librarian	Faculty	Total Attributes
Poor	0	0	
Average	1	3	4
Good	4	8	12
Satisfied	8	3	11
Highly satisfied	4	1	5
Total			32

The above table indicates the satisfaction levels of respondents. None of the respondents rated the INFLIBNET resources as poor. Majority of the respondents (i.e.) 12 felt that the resources are good to use, closely followed by 11 respondents who choose the satisfied option. There were 5 respondents who were highly satisfied with the content from the INFLIBNET resources and the remaining 4 respondents were of the opinion that these resources were good from their perspective.

Figure 7: Graphical representation of data in table 8

4.9 Usefulness of INFLIBNET e- resources

Table 9: Opinion of respondents about usefulness of INFLIBNET e-resources

Usefulness of INFLIBNET e-resources	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
Very useful	8	47.1	11	73.3
Useful	9	52.9	3	20
Moderate	0	0	1	6.7
Not useful	0	0	0	0
Total	17	100	15	100

As seen in the table above, 9 (47.1%) of librarians expressed that they found the resources accessed through INFLIBNET to be useful. 8 (47.1%) though the resources to be very useful. From the faculty point of view, the majority of them (i.e.) 11 (73.3%) considered the resources very useful. While 3 (20%) found it to be useful and only 1of faculties found them moderately beneficial.

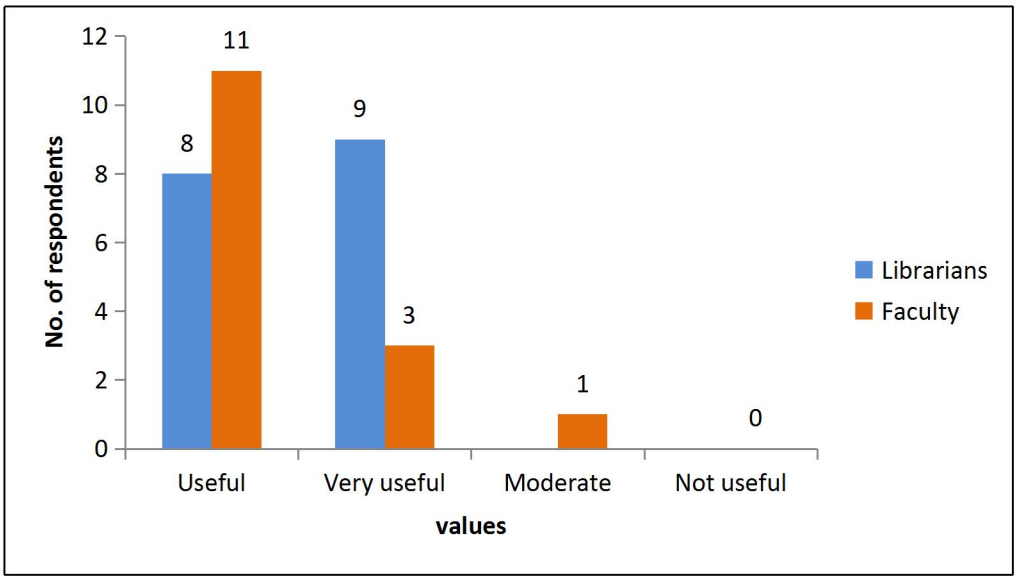

Figure 8: Graphical representation of data in table 9

4.10 Influence of INFLIBNET e-resources for achieving academic advancement

The respondents were asked how they used INFLIBNET e-resources for their academic careers. Five purposes for which INFLIBNET e-resources were used were stated in a closed- ended question.

Table 10: Influence of INFLIBNET e-resources for advancement in academic careers

Purpose	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
Participation in conferences, workshops	8	47.1	4	26.7
Research writing	13	76.5	13	86.7
Academic excellence	7	41.2	8	53.3
Any other co-curricular activities	2	11.8	1	6.7
Other	1	5.9	3	20

It was observed that the majority of 13 (76.5%) of the respondents used INFLIBNET resources for writing research articles, followed by 8 (47.1%) for conference/ workshop participation. With the support of INFLIBNET resources, 7 (41.2%) have excelled academically. Few respondents used INFLIBNET resources for extracurricular activities, and only 1 (5.9%) used them for other purpose. Meanwhile majority of the faculty members, i.e., 13 (86.7%) have used INFLIBNET resources for research writing. While academically, 8 (53.3%) of the respondents have excelled. Conferences were attended by 4 (26.7%). Only 1 (6.7%) utilised these resources for extracurricular activities, while 3 (20%) used for other reasons.

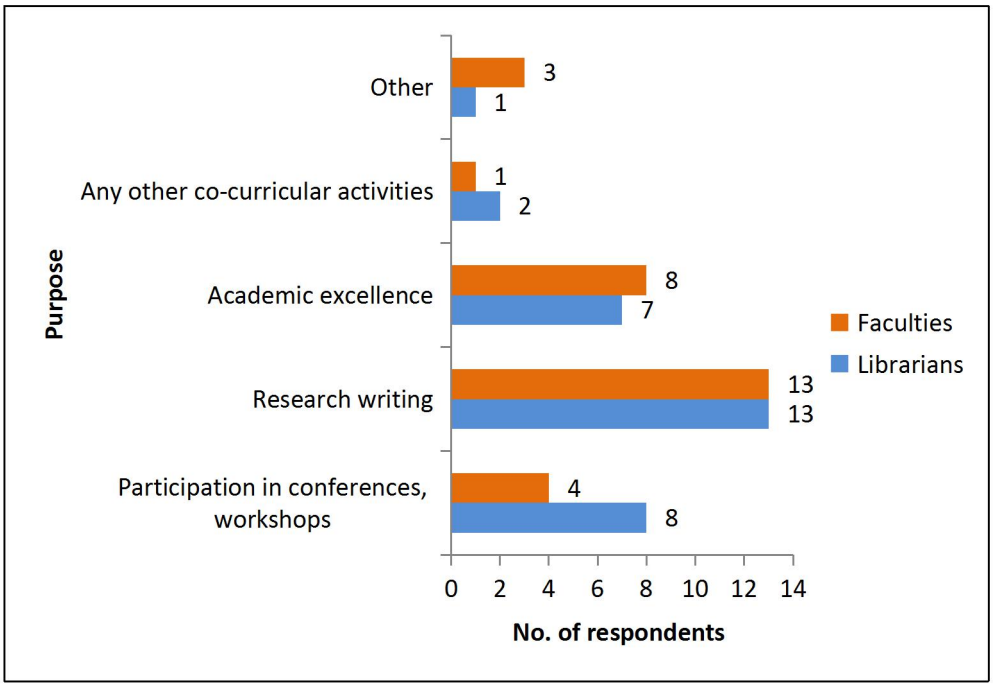

Figure 9: Graphical representation of data in table 10

4.11.1 Training program

The respondents were questioned if they would want to attend a training programme about how to use the various INFLIBNET resources. The results are presented in table

Table 11a: Need for training program by respondents

Need for training program	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
Yes	14	82.4	15	100
No	3	17.6	0	0
Total	17	100	15	100

The above table reveals that 14 (82.4%) are interested in attending a training programme, while 3 (17.6%), state they do not require training. In case of faculty members, all of the respondents expressed an interest in participating in a training.

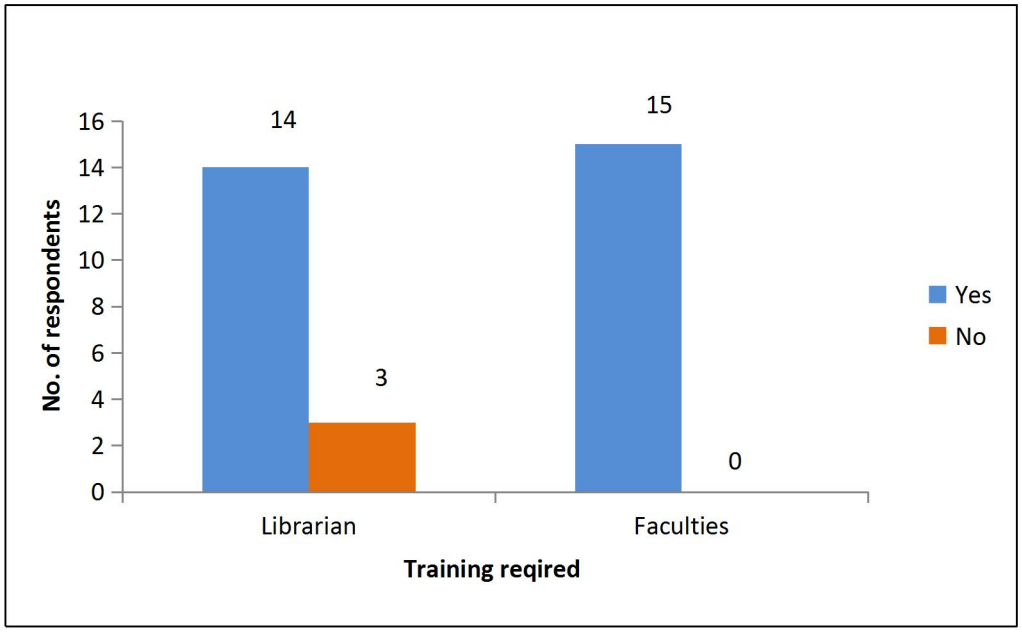

Figure 10a: Graphical representation of data in table 11a

4.11.2 Programs on which training is required

Respondents were questioned about which of INFLIBNET programs they would want to attend a training programme.

Table 11b: Programs on which training is required by the respondents

Programmes	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
e-ShodhSindhu	5	35.7	4	26.7
N-LIST program	7	50	1	6.7
ShodhShuddhi	5	35.7	9	60
Shodhganga	2	14.3	1	6.7
ShodhGangotri	2	14.3	3	20
IR@INFLIBNET	4	28.6	6	40
InfoPort	6	42.9	5	33.3
e-PG Pathshala	4	28.6	3	20
Vidya Mitra	3	21.4	6	40
SWAYAM	6	42.9	4	26.7
Vidwan	2	28.6	12	80

The above table indicates from the librarian's point of view that 7 (50%) respondents require training in N-LIST, followed by InfoPort by 6 (42.9%), SWAYAM by 6 (42.9%), e-ShodhSindhu by 5(35.7%), ShodhShiddhi by 5 (35.7%). Majority of the faculty members want to attend training program on Vidwan, 12(80%), followed by 9 (60%) require training on ShodhShuddhi.

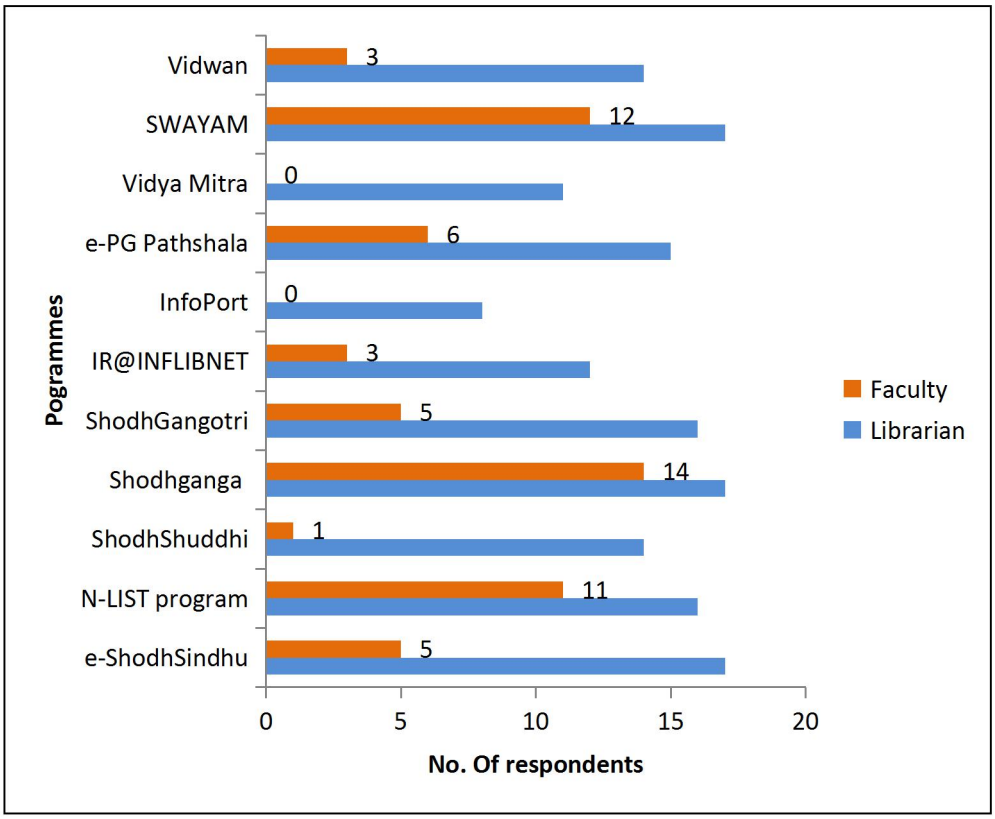

Figure 10b: Graphical representation of data in table in 11b

4.11.3 Mode of training program

The respondents were asked to choose the mode of training they would prefer.

Table 11c: Mode of training program preferred by the respondents

Training mode	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
Workshops/ Hands-on- training	6	42	8	53.3
Online tutorials	5	35.7	4	26.7
Self help guides	0	0	1	6.7
Lecture method/ orientation	3	21.4	1	6.7
Demonstration	2	14.3	1	6.7
Total	17	100	15	100

The above table shows that workshops or hands-on-training is preferred by the majority of respondents among librarians 6(42%). Online tutorial methods are preferred by 5(35.7%). The lecture method is preferred by 3(21.4%). Only 2(14.3%) respondents favour the demonstration method. The majority of the faculty members favour workshops or hands-on- training 8 (53.3%). The demonstration technique is preferred by 1(6.7%), while the lecture method is preferred by 1(6.7%). Self-help guides are also preferred by 1 (6.7%).

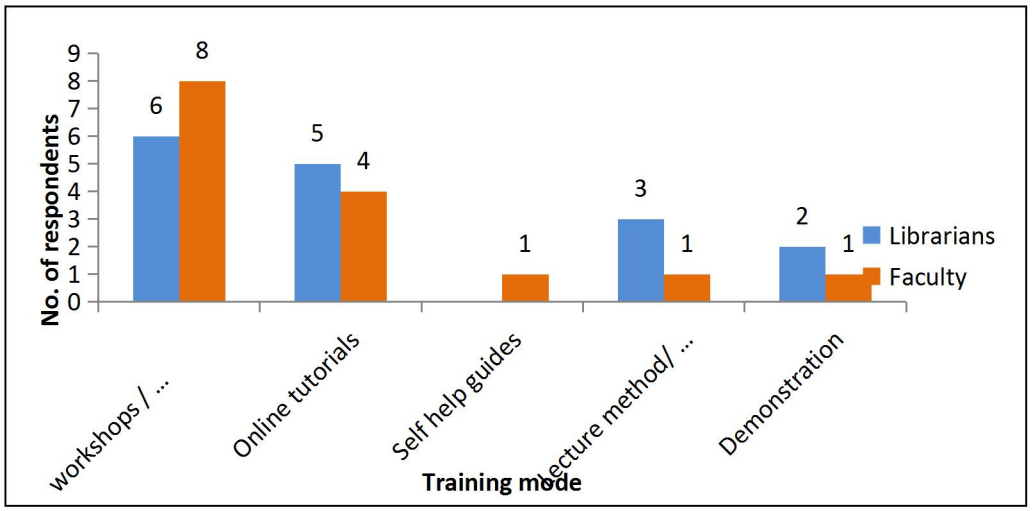

Figure 10c: Graphical representation of data in table 11c

4.12 Type of e-resource accessed from N-LIST program

Table 12: Type of e-resources used by respondents from N-LIST program

e-resources	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
E-Book	14	82.4	15	73.3
E- Journal	7	100	15	100
Other resources	2	11.8	2	13.3

N-LIST E-Journals are accessed by 17(100%) of the respondents, as shown in the table. E-Books are used by 14(82.4%) of the respondents. 2(11.8%) of the respondents use other e-resources. The similar results can be seen in case of faculty members. 15 (100%) of the respondents, as shown in the table have accessed E-Journals from N-LIST. E-Books are used by 13 respondents. Other e-resources are used by 2(13.8%) of the respondents.

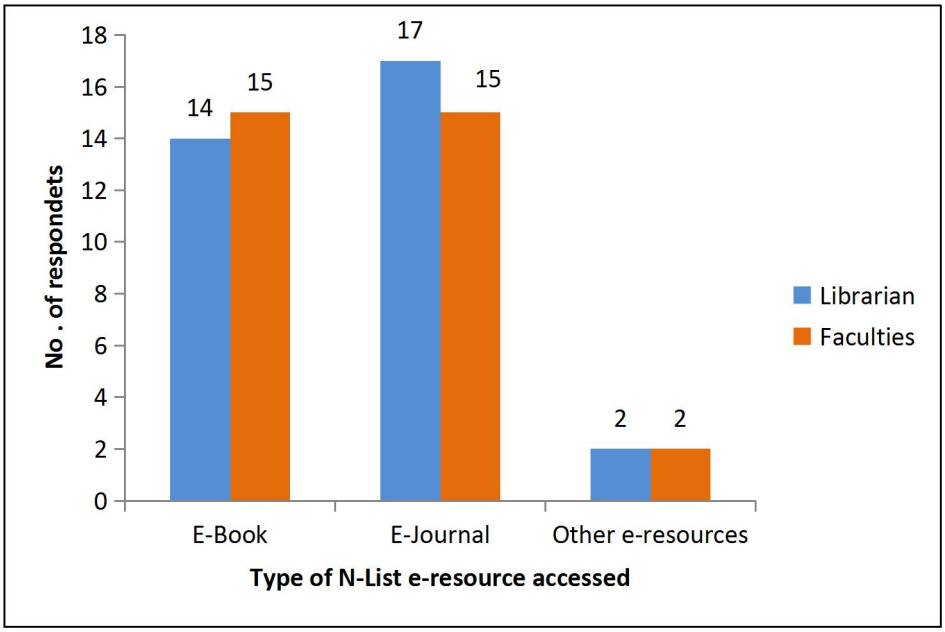

Figure 11: Graphical representation of data in table 12

4.13 E-Journal publishers accessed from N-LIST program

Table 13: E-journal used by respondents through N-LIST

E-Journal Publishers	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
American Institute Of Physics	5	29.4	0	0
American Physics Society	3	17.6	0	0
Annuals Review	8	47.1	1	6.7
Cambridge University Press	9	52.9	2	13.3
Economic and Political Weekly	8	47.1	2	13.3
H.W. Wilson	9	52.9	0	0
Indian Journals	14	82.4	9	60
Institute of Physics	4	23.5	0	0
JSTOR	16	94.1	11	73.3
Oxford University Press	10	58.8	5	33.3
Royal Society of Chemistry	3	17.6	2	13.3

The above table indicates that JSTOR is used by maximum number of respondents 16 (94.1%). 14 (82.4%) of the respondents have used Indian Journals, followed by respondents usingOxford University Press, 10 (58.8%), H. W. Wilson by 9 (52.9%), and Cambridge University Press by 9 (52.9%) respondents. Among the faculty members, JSTOR is used by 11 (73.3%), Indian Journals by 9 (60%).

4.14E-book publishers accessed from N-LIST program

Table 14: E-Book publishers referred by the respondents through N-LIST

E-Book Publishers	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
Cambridge Books Online	5	29.4	4	26.7
E-brary	10	58.8	1	6.7
EBSCoHost-Net Library	6	35.3	6	40
Hindustan Book Agency	5	29.4	0	0
Institute of South East Asian Studies(ISEAS)	3	17.6	1	6.7
Mylibrary-McGraw Hill	8	47.1	2	13.3
Oxford Scholarship	6	35.3	0	0
Sage Publication e-books	10	58.8	8	53.3
Springer e-books	12	70.6	11	73.3

According to the above table Springer e-books are used by 12 (70.6%) of the respondents. 10 (58.8%) of the respondents have used E-brary and Sage Publication e-books. Institute of South East Asian Studies (ISEAS) is the least used. Springer e-books and Sage Publication e-books are used by maximum number of faculty members.

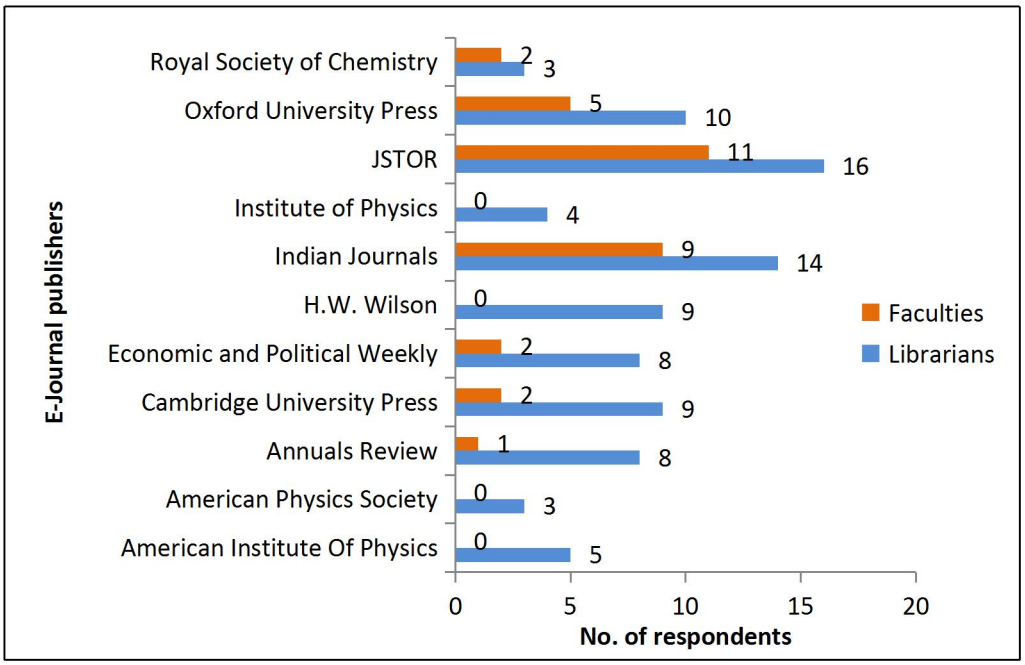

Figure 12: Graphical representation of data in table 13

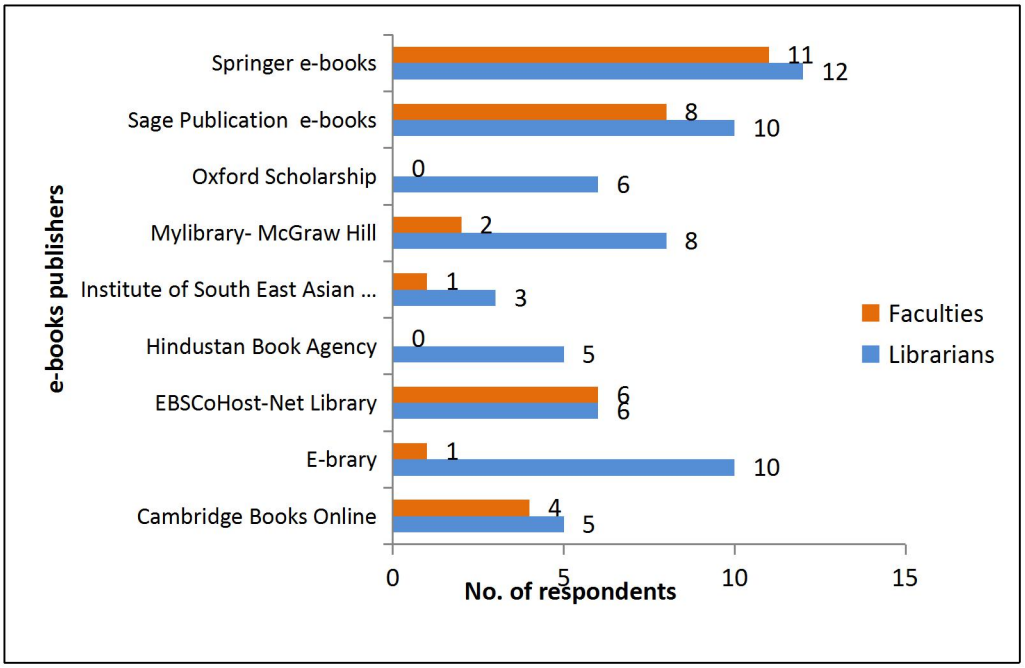

Figure 13: Graphical representation of data in table 14

4.15 Difficulties faced while using INFLIBNET e-resources

The respondents were asked whether they have faced any difficulty in accessing the INFLIBNET e-resources.

Table 15: Shows the distribution of respondents according to difficulties faced while accessing INFLIBNET.

Difficulties faced in using INFLIBNET e-resources	Librarians		Faculties	
	Frequency	Percentage %	Frequency	Percentage %
Yes	5	29.4	2	13.3
No	12	70.6	13	86.7
Total	17	100	15	100

It is clear from the above table that 70.6% respondents have not faced any difficulty, while 29.4% have encountered some issues. In case of faculty members 86.7 have no issues in accessing INFLIBNET resources. 13.3% have faced some difficulties.

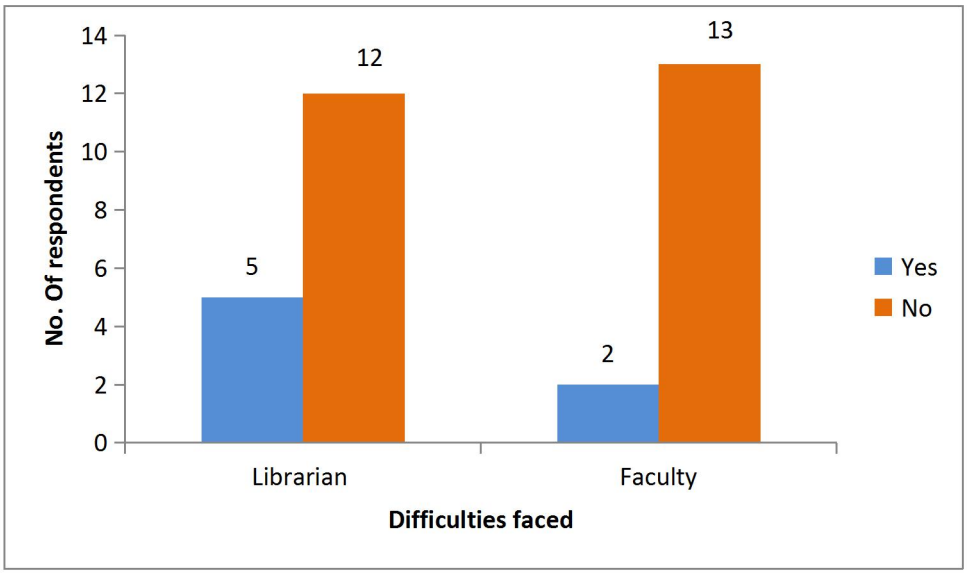

Figure 14a: Graphical representation of data in table 15

Respondents who experienced difficulty accessing INFLIBNET e-resources were asked to mention their difficulties in the form of an open ended question. The results are shown in figure 17.

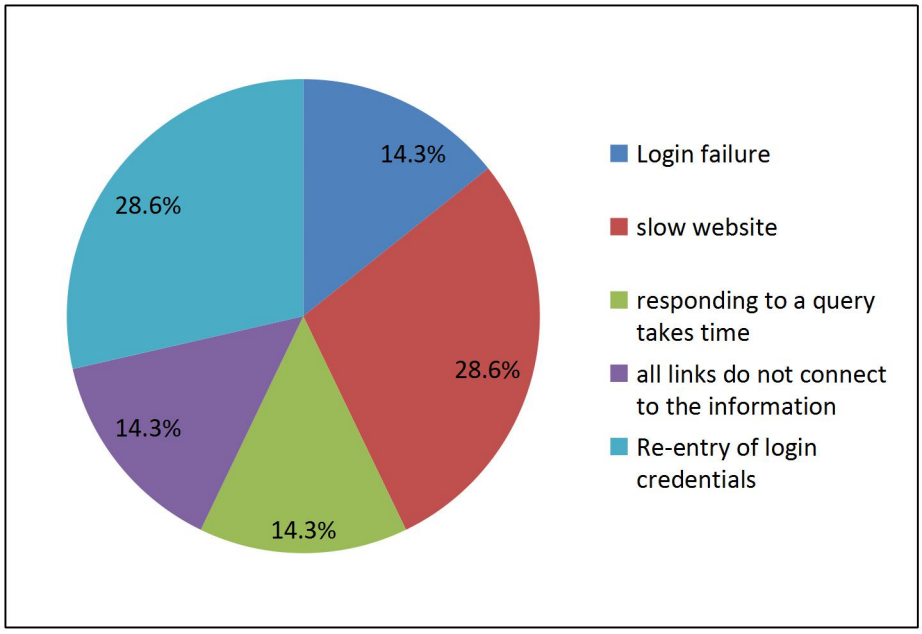

Figure 14b: Various issues faced by respondents while accessing INFLIBNET e-resources

Figure 15 indicates the problems faced by respondents. Time taken to respond to a query and repeatedly entering login credentials were the major issues. Other issues encountered were slow website, login failure and links not leading to the correct content.

Hypothesis Testing

1. Faculties in academic libraries of south Goa are unaware of the INFLIBNET resources available in their colleges.

From the findings the hypothesis stating that faculties in academic libraries of south Goa are unaware of the INFLIBNET resources available in their colleges rejected has been rejected as majority of the faculty respondents were aware of at least some of the INFLIBNET resources.

2. There is a need for training for more usage of INFLIBNET resources among the faculties of academic colleges in south Goa.

From the findings the hypothesis stating that there is a need for training for more usage of INFLIBNET resources among the faculties of academic colleges in south Goa has been found correct and is accepted as all the faculties expressed desire to participate in training programmes on usage of INFLIBNET resources.

Chapter V

Findings and Suggestions

5.1 Findings

1. Awareness about INFLIBNET

   All the 32 (100%) respondents are aware of INFLIBNET.

2. Awareness about various INFLIBNET programmes

   Majority of the respondents are aware of Shodhganga (96.8%), SWAYAM (90.6%), and N-LIST (84.3%). InfoPort was the least know program.

3. Source of awareness about INFLIBNET

   Majority i.e., 13 (40.6%) of the respondents are aware through librarians, 12 (37.5%) through the Internet, 4 (12.5%) through college website and 3 (9.3%) through an orientation programme.

4. Frequency of accessing INFLIBNET e-resources

   Majority of the respondents i.e., 11 (34.3%) used the INFLIBNET e-resources once a week, followed by 10 (31.2%) who used it occasionally. Only 6 (28.1%) used daily. 5 (15.6%) of the respondents used once a month.

5. Time spent accessing INFLIBNET e-resources

   Majority of the respondents 19 (59.3%) spent 2-3 hours, while 12 (37.5%) spent less than hour. None of the respondents spent more than 5 hours.

6. Purpose of using INLFLIBNET e-resources

   Majority of the respondents 24 (75%) used INFLIBNET e-resources to write research articles

7. Satisfaction with INFLIBNET e-resources

   Majority of the respondents were highly satisfied with the INFLIBNET e-resources. None of the respondents rated INLIBNET resources as poor.

8. Usefulness of INFLIBNET e-resources

   Close to (59.3%) of the respondents found the INFLIBNET e-resources as very useful while 12(37.5%) felt the resources were not useful.

9. Influence of INFLIBNET in achieving academic advancement

   26 (81.2%) of the respondents used INFLIBENT resources for research writing. 15 (46.8%) of the respondents have excelled academically with the help of INFLIBNET resources. While about 12 (37.5%) had attended conferences or workshops.

10. Training program

    Majority of the respondents i.e. 29 (90.6%) were interested in attending a training program whereas 3 (9.3%) were not.

11. Programmes on which training is required

    Vidwan, ShodhShuddhi, InfoPort, SWAYAM, IR@INFLIBNET, and e-Shodhsindhu were the programmes on which the maximum number of respondents needed training.

12. Training mode preference

    About half 14 (48.2%) of the respondents preferred workshops /hands on training. 9 (31%) of the respondents preferred online tutorials, only 4 (13.7%) preferred lecture method. The least favoured method was self-help guides.

13. Type of e-resources accessed from N-LIST

    N-LIST E-Journals were accessed by all the respondents. E-Books were used by 29 (90.6%) of the respondents and other e-resources were used by 412.5%) of the respondents.

14. E-Journal publishers

JSTOR is used by maximum number of the respondents. Indian Journals have been used by 23(71.8%) of the respondents. 15 (46.8%) have used Oxford University Press.

15. E-Book publishers

    Majority of the respondents 23(71.8%) have used Springer e-books followed by 18(56.2%) have used Sage Publication e-books

16. Difficulties faced by respondents

    Majority of respondents did not encounter any problems while accessing INFLIBET resources, however 7 (21.8%) of the respondents did face some difficulties.

    Respondents were asked an open- ended question to determine the difficulty they encountered while using INFLIBNET resources. Login failure, slow website, responding to a query takes time, all links do not connect to the information, and entering login data again are among the challenges revealed by respondents.

5.2 Suggestions

Suggestions from the respondents

1. More awareness and training on how to use the resources must be done.
2. Include more library and information science journals in the NLIST programme.
3. Should be more applicable to the course of study.
4. More databases, such as ProQuest, should be added to N-LIST.
5. Incorporate regional languages.

Based on the findings of the study the following suggestions are recommended to improve the use of INFLIBNET and its resources:

1. Orientation/ programmes on INFLIBNET and its subsidiary programmes should be conducted by the university librarian and staff members for faculties and librarians of all academic colleges in Goa.

2. The majority of the respondents felt that the e-journals covered under NLIST at present are not sufficient. As a result, it has been suggested that NLIST programme should include/ cover a greater number of e-journals, particularly in the field of library and information science.

3. INFLIBNET should organize at the state level training programmes, workshops, seminars, conferences for librarians and faculty members.
4. National and International journals can be made available in regional languages may be also include INFLIBNET programmes.
5. Changes in user education programmes are needed, such as making them more practical or workshop- based rather than lecture- based, and increasing the time of this programmes.
6. Assign or appoint expert to give lectures on how to use INFLIBNET resources. Make online training and guidelines available in English and

regional languages. Regularly introducing and demonstrating the numerous resources available under INFLIBNET in various topic categories is vital to improve the quality of academic activities.

7. Websites of the university and library are the chief source of updating information, so the web pages should deliver information regarding academic information.
8. The academic libraries may organize workshops and information literacy programmes for increasing awareness about the available e-resources.
9. The majority of N-LIST e-resources are not syllabus- based. More number of e-resources and e-books that are syllabus oriented or subject oriented must be added, according to the faculty members and librarians.

Chapter VI

Conclusion

Within a short period of timeInflibnet programmes have gathered a lot of the importance for higher education and academic institutions are being enriched with the e-resources available through the Programme. All college libraries need to focus more on e-resources. The users should become familiar with latest information resources and to make optimum utilization of electronic information resource (N-LIST) available in the institution. With reference to this research there is a lot of scope for enhancing the usability, covering more subject and adding new sources of information and knowledge creation. Library users need to analysis their usage of the library resources and calculate what is their output. The government of India is spending large amount on the e-resources which are made available via consortia.