Information Seeking Behavior of the Students of the National Institute of Technology (NIT) Mizoram

A dissertation submitted in partial fulfillment of the requirement for the degree of Master of Philosophy in Library and Information Science

Submitted by:

Florida J. Nurhmingliani
MZU Registration No: 5724 of 2012
M.Phil. Registration No: MZU/M.Phil./433 of 02.05.2018

Supervisor

Dr. S.N. Singh
Professor

Department of Library & Information Science
School of Economics, Management & Information Science
Mizoram University, Aizawl

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DECLARATION

Mizoram University

Aizawl: Mizoram

November, 2018

I, Florida J. Ngurhmingliani hereby declare that the subject matter of this dissertation is the record of the work done by me, the contents of this dissertation did not form basis of the award of any previous degree to me, or to do the best of my knowledge to anybody else and that the dissertation has not been submitted by me for any research degree in any other university/institute.

This is being submitted to the Mizoram University for the Degree of Master of Philosophy in the Department of Library and Information Science.

(FLORIDA J. NGURHMINGLIANI)

Research Scholar

(Prof. S.N. SINGH)

Head

(Prof. S.N. SINGH)

Supervisor

MIZORAM UNIVERSITY
(A Central University accredited 'A' Grade by NAAC in 2014)
Department of Library & Information Science
Aizawl, Mizoram. PIN - 796 004

PO Box 190 Tele-Fax: (0389) 2331608 E-mail: semis.dlis@gmail.com

CERTIFICATE

This is to certify that the dissertation entitled "**Information Seeking Behavior of the Students of the National Institute Technology (NIT), Mizoram**" submitted by **Florida J. Ngurhmingliani** for the award of Master of Philosophy in Library and Information Science is carried out under my guidance and incorporates, the students bona fide research and this has not been submitted for award of any degree in this or any other university or institute of learning.

Date: (Prof. S.N. Singh)

Place: Professor & Supervisor

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Dated _____ (FLORIDA J. NGURHMINGLIANI)

M. Phil
Registration No. MZU/M.Phil/433 of 02.05.2018
Department of Library & Information Science
Mizoram University
Tanhril, Aizawl

Preface

Information is very important to every aspect of today's information society or human being. Information explosion has paved the way to seek information in an increasing variety and diversity at different levels, frequency, volume and use. Information seeking behavior arises due to information need of the information seeker, who in order to satisfy their need, make demands upon formal or informal sources or services, resulting in either, success or failure. Information seeking behavior is the human behavior with respect to searching various sources, channels including use of that information. Information can be used interchangeably with knowledge.

The emergence of the concept of information seeking behavior can be understood by knowing the origin of user studies. In the 1940's library survey was held, it focuses on how people used libraries to satisfy their needs. The conference of Royal Society of Information (1948) changed the path of the studies from library survey to user studies. Another Conference at international level was conducted by the National Academy of Sciences, Washington on Scientific Information (1959) focused on information needs of scientists and from there on a large number of studies on information seeking behavior of people belonging to a particular discipline were found to have been conducted. In the year 1970, in India, the user studies were highlighted by Ranganathan through his "Annotation on 'User Survey'''.

India completed more than six decades after independence; during these years, the country has had eleven five year plans of development. Engineering education is a basic and essential input for national development and strengthening of the industry, economy and ultimately improving the quality of life of the people. It has made a significant contribution to India's economic development. The programs which have advanced the country and diversified and augmented production since independence are largely because of the manpower produced by engineering institutions of the country.

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation	Description
NIT	National Institute of Technology
RECs	Regional Engineering Colleges
IITs	Indian Institute of Technology
HPRC	High Powered Review Committee
MHRD	Ministry of Human Resource Development
AICTE	All India Council for Technical Education
INDEST	Indian National Digital Library in Engineering Sciences and Technology
ICT	Information and Communication Technology
CRRID	Centre for Research in Rural and Industrial Development
BSNL	Barat Sanchar Nigam Limited
UAE	United Arab Emirates (Reference)
AMU	Aligarh Muslim University (Reference)
IASLIC	Indian Association of Special Libraries and Information Center
ARIES	Agriculture, Rural Investment and Enterprise Strengthening
SRELS	Sarada Ranganathan Endowment for Library Science
IISC	Indian Institute of Science
NCE	National Council of Education
CABA	Children Affected by Aids
EPC	Engineering Planning Committee
B.Tech	Bachelor of Technology
M.Tech	Master of Technology
Ph.D	Doctor of Philosophy

JEE	Joint Entrance Exam
M.Sc	Master of Science
CD-ROMs	Compact Disc Read-Only Memory
E-Journals	Electronic Journals
IEEE	Institute of Electrical and Electronics Engineering
ASME	American Society of Mechanical Engineers
VJIT	Vidya Jyothi Institute of Technology
E-Books	Electronic Books
UG	Under Graduate
PG	Post Graduate
MBA	Master of Business Administration
UGPEC	Undergraduate Programme and Evaluation Committee
EAA	Extra Academic Activity
SA	Students Activity
SO	Sports Officer
HSS	Host System Software
ISTE	Indian Society for Technical Education
ISU	Information Seeking and Using
ISP	Information Search Process
i.e	That is
CRUS	Centre for Research on User Studies
ILA	Indian Library Association
ASLIB	Association of Special Libraries & Information Bureau

1.1 INTRODUCTION

Information is a valuable resource of today's information society; searching and using information are essential human activity. This process is known as information seeking and therefore it is becoming more fundamental and strategic for intelligent citizenship. Information is the backbone for any dynamic and efficient research activity and acts as oxygen for a nation's development. It is the fact that a country which is rich in information is rich in economic spheres. The countries which are information rich seem to be rich in all spheres and the countries that are information poor are found to be poor in every field. Now-a-days, the world is divided into two namely; information rich and information poor. Hence, information is being considered as a crucial economic factor. Information is the core of all decision makings, all development and growth. Information is a great phenomenon which has led to man's progress. It is a basic resource for any kind of activity.

Information can be described as an individual's way and manner of gathering and sourcing for information for personal use, personal updating and development. The term information is defined, understood and interpreted differently across a vast array of disciplines (Losee, 1997). It is stated that the term as concept originated from the Greek words typos, idea and morphé, evolving into the Latin word information. In its modern context the word 'information' generally means to instruct, to furnish with knowledge (Capurro, 1992). The Oxford English Dictionary describes it as knowledge communicated concerning some particular fact, subject or event (1989). Other definitions view information as a property of matter, any message, document, or information resource; any publicly available symbolic material; or any data (Smith, 1991), or as ideas, facts, imaginative works of the mind and data of value, potentially useful for decision making, question answering, etc.(Kaniki, 2001). Wilson in Case (2002) sees it as the purposive search for information in order to satisfy certain goals, while Johnson (1997) defines it as the purposive acquisition of information from selected information carriers. Case (2002) describes it as a conscious effort to acquire information in response to a need or gap in one's knowledge.

According to Wilson (1981) a general model of information seeking behavior needs to include at least the following three elements;

- An information need and its drivers, i.e., the factors that gives rise to an individual's perception of need;

- The factor that affect the individual's response to the perception of need; and
- The processes or action involved in that response.

According to Moly (2014) the teaching and learning environment in higher education require information that support for knowledge development. Without information teaching and learning cannot flourish or survive. Teachers and students seek information for various purposes. They make use of printed documents or e-documents to gather information. Researches reveal that with the emergence of web resources the information seeking behavior of students are changing rapidly all over the world. Information seeking behavior refers to those activities a person engages in when identifying his or her own need for information, searching for such information in any way and using or transferring of information. Information behavior is the totality of human behavior in relation to the sources and channels of information, including both active and passive information seeking and information use. Thus it includes face to face and online communication with others as well as the passive reception of information (Wilson, 2000). Information seeking is an integral component of life, which aim is to eliminate a continual dissonance between perceptions of how things are at this moment and how they should be. Information has been described as the fifth need of man ranking after air, water, food and shelter (Kemp, 1976).

1.2 DEFINITION OF INFORMATION SEEKING BEHAVIOR

Information seeking is a highly complex task involving the interaction among users, the information need, and the information resources. Information seeking is a complex process consisting of social, communicative and interactive behavior (Fourie, 2004). Information seeking behavior refers to the way people search for and utilize information. The term was coined by Thomas D. Wilson in his (1981) paper, on the grounds that the then current 'information needs' was unhelpful as a basis for a research agenda, since 'need' could not be directly observed, while how people behaved in seeking information could be observed and investigated.

Kuhlthau (1991) conceives information seeking as users' constructive effort to derive meaning from information in order to extend their state of knowledge on a particular issue or topic. This activity incorporates a series of encounters with information within a space of time, rather than a single reference incident. Fairer and Wessels (1990) refer to information seeking behavior as the way people search for and utilize information. Information seeking behavior is

how people use information in their work environment. The need of information seeking behavior arises due to information need of the information seeker, who in order to satisfy it, makes demands upon formal or informal information sources or services, resulting in either success or failure.

1.3. PROFILE OF NATIONAL INSTITUTE OF TECHNOLOGY

The National Institute of Technology is a group of public engineering colleges of India. These institutes have been declared by the Act of Parliament as Institutes of **National Importance**. It comprises 30 autonomous institutes as listed in Table-1 and they are located in one each major state/territory of India. In 2007, the Indian Government declared these schools as Institute of National Importance. All NIT's are autonomous which enables them to set up their own curriculum. All NIT's were referred to as Regional Engineering Colleges (REC's) and were governed by their respective state Governments. NIT's were founded to promote regional diversity and multi- cultural understanding in India. NIT's offer degree courses at Bachelors, Masters and Doctorate levels in various branches of engineering and technology

Jawaharlal Nehru sought to develop India as a leader in Science and technology. The Government started fourteen REC's between 1959 and 1965 at Bhopal, Allahabad, Kozhikode, Durgapur, Kurukshetra, Jamshedpur, Jaipur, Nagpur, Rourkela, Srinagar, Surathkal, Surat, Tiruchirappali and Warangal. It established one in Silchar in 1967 and added two others located at Hamirpur in 1986 and Jalandhar in 1987. The RECs were jointly operated by the central government and the concerned state government.

The upgrade was designed along the lines of the prestigious Indian Institute of Technology (IITs) after it was concluded that RECs had potential as proven by the success of their alumni and their contributions in the field of technical education. The changes implemented recommendations of the "High Powered Review Committee" (HPRC). In 2002, MHRD issued NIT status to three more colleges located at Patna, Raipur and Agartala. In 2010, the Government announced setting up ten new NITs in the remaining states/ territories. This would lead to every state in India having its own NIT. With the technology based industries continuing growth, the Government decided to upgrade 20 National Institutes of Technology to full- fledged technical Universities. Parliament passed enabling legislation, the National Institutes of Technology Act in 2007 and took effect on 15thAugust of that year. The target is to fulfill the

need for quality manpower in the field of Engineering, Science and Technology and to provide consistent governance, fee structure and rules across the NIT's.

The President of India is the ex-officio visitor of all the NITs. The NIT council works directly under him and it includes the ministry in charge of technical education in central government, the chairman and the Directors of all the NITs.

NITs have a central library equipped with technical books, literature, fiction, scientific journals, and other electronic material. Most have digitized their libraries. Some provide an intranet library facility. Every departmental library has high speed connectivity. Electronics libraries allow students access to online journals and other periodicals through the AICTE-INDEST consortium, an initiative by the Ministry of Human Resource Development.

Table-1.1: List of National Institute of Technology

Name	**Established**	**Short Name**	**City/Town**	**State/UT**	**Website**
NIT Kurukshetra	1963	NITKKR	Kurukshetra	Haryana	nitkkr.ac.in
NIT Calicut	1961	NITC	Kozhikode	Kerela	nitc.ac.in
NIT Delhi	2010	NITD	New Delhi	Delhi	nitdelhi.ac.in
NIT Agartala	1965	NITA	Agartala	Tripura	nita.ac.in
NIT Durgapur	1960	NITDGP	Durgapur	West Bengal	nitdgp.ac.in
NIT Goa	2010	NITG	Farmagudi	Goa	nitgoa.ac.in
NIT Puducherry	2010	NITPY	Karaikal	Puducherry	nitpy.ac.in
Maulana Azad NIT Bhopal	1960	MANIT	Bhopal	Madhya Pradesh	manit.ac.in
Malaviya NIT Jaipur	1963	MNIT	Jaipur	Rajasthan	mnit.ac.in
Motilal Nehru NIT Allahabad	1961	MNNIT	Allahabad	Uttar Pradesh	mnnit.ac.in
NIT Manipur	2010	NITMN	Imphal	Manipur	nitmanipur.ac.in
NIT Meghalaya	2010	NITM	Shillong	Meghalaya	nitm.ac.in
NIT Mizoram	2010	NITMZ	Aizawl	Mizoram	nitmz.ac.in
NIT Nagaland	2010	NITN	Dimapur	Nagaland	nitnagaland.ac.in
Dr. B.R. Ambedkar NIT Jalandhar	1987	NITJ	Jalandhar	Punjab	nitj.ac.in
NIT Jamshedpur	1960	NITJSR	Jamshedpur	Jharkhand	nitjsr.ac.in
Vivesvaraya NIT Nagpur	1960	VNIT	Nagpur	Maharashtra	vnit.ac.in
NIT Patna	1886	NITP	Patna	Bihar	nitp.ac.in
NIT Raipur	1956	NITRR	Raipur	Chattisgarh	nitrr.ac.in
NIT Rourkela	1961	NITRKL	Rourkela	Odisha	nitrkl.ac.in
NIT Sikkim	2010	NITSKM	Ravangla	Sikkim	nitsikkim.ac.in
NIT Silchar	1967	NITS	Silchar	Assam	www.nits.ac.in
NIT Srinagar	1960	NITSRI	Srinagar	Jammu& Kashmir	www.nitsri.net

ShardarVallabhbhai NIT Surat	1961	SVNIT	Surat	Gujarat	svnit.ac.in
NIT Surathkal	1960	NITK	Mangalore	Karnataka	nitk.ac.in
NIT Tiruchirappalli	1964	NITT	Tiruchirappalli	Tamil Nadu	nitt.edu

1.4. SIGNIFICANCE AND SCOPE OF THE STUDY

Advances in Information and Communication Technology (ICT) have opened a wide range of availability for all those who are in need of information. Today in the age of information; the traditional libraries have been converted to digital ones, to reach wider geographical area. The appropriate application of attitude will enable the seeker not to be caught among the overflow of information, especially with irrelevant information. Information seeking behavior gains significance since it is a driving force to achieve excellence empirically and cognitively in academic, research and social needs. In academic environment, the majority of information is provided through libraries, classroom lecture notes, internet, media and friends. The libraries especially in engineering institutions play a vital role in providing information related to academic, research and general aspects. For a library it is always necessary to learn about the information required by the users. Significance of the present study lies with the fact that, information quest among the academic community is crucial for teaching, learning and research and this is significant to students of NIT Mizoram. The study identifies the information need and information seeking process of the students.

The scope of the study is limited to the students of National Institute of Technology (NIT) Mizoram.

1.5. REVIEW OF LITERATURE

There are a good number of literatures available in this area of study. The scholar makes an extensive survey of literature in the concerned field so as to get abreast with the information. The literature available in different forms has been scan from the published documents in the area of the study. The scholar also scan e-resources concerning to the field of study.

Naskar and Krishnapada (2017) study Information seeking behavior of patients at Government Hospitals in the district of Jalpaizuri, North Bengal and find out that there are so many difficulties which faced by patients and patient parties. But, presently, in the light of findings of the study, it concluded that patient require greater knowledge about their condition

before they can understand their treatment. Majority of local people are dependent on government hospitals with respect to health problems.

Chinnasamy (2016) study Information Need and Information Seeking Behavior of Engineering College in Madurai – A Case Study and find out that 55.33% respondents are using the library for Preparing for the examination, 38% respondents are suing the print copy and 81.33% respondents are using the pen drive. Libraries have always welcomed new changes for enhancing their services and satisfactory clientele's needs. It's a high time for traditional libraries that they change their approach as the availability of the digital resources is growing day by day.

Randhawa and Jatana (2015) conducted a study on Information seeking behavior of Social scientists of CRRID: A Case Study examines the information seeking behavior of social scientists at a leading social science research institution. Result shows that the most common source of information seeking in social sciences is through discussion with one's colleagues and an established expert in the field. Besides using traditional methods for locating and retrieving required information, the faculty at center for Research in Rural and Industrial Development (CRRID) also frequently used web aided procedures such as the internet, electronic mail, and other web based resources.

Lewis and Mallaiah (2014) study Use of Information Resources in Engineering College Libraries of Dakshina Kannada and Udupi Districts: A Comparative Study and find out that information seeking may be motivated by a wide variety of needs including, personal and professional needs. The successful operation of a library depends to a large extent on the type of library collection. The collection should meet the needs and requirements of the users. Consequently, librarians must be aware of how students seek information. Knowledge of information needs and information seeking behavior is imperative to develop a valuable collection, and to improve the facilities and services.

Okoh and Ijiekhuamhen (2014) study Information Seeking Behavior of Undergraduates In a Nigerian University and find out that, training of students on computer skills, provision of alternative power supply as well as adequate coverage of information literacy skills in the use of library currently taught in the university.

Upadhyay (2014) had a study on Impact of Information Communication Technology on Information Needs and Information Seeking Behavior of Users of Indian Institute of Management Libraries in India: A Study and find out that Majority of the users (72.8 %) users goes library for conducting academic work followed by professional work like writing books and

writing research papers. 81.8 % students and 84.2 % research scholars use the library for academic purpose and 68.7 % faculty members use the library for professional use. Mostly users preferred both versions print as well as electronic to use/obtain their required information, but it is certain that AA users preferred to get their required information in form of e-version compare to print version. Reference books and periodicals are all time favorite of all kind of users of the IIM libraries. Over 98 % research scholars refer the reference books for seeking information and on the other side they also interested in periodicals along with faculty members.

Pattanaik and Parida (2013) had a study on Information Need and Seeking Habits of the Scientists Working in Different Agricultural Research Institutes of Odisha: A User's Study and indicates that the agricultural scientists are much diversified in the information they seek, the sources they access and the use they make of the information.

Anonymous (2012) the study clearly aim to investigate the "Information Seeking Behavior by Post Graduate Students in Zakir Hussain Engineering College and Faculty of Law in AMU. By taking samples of both the faculties of students to get an over view on the Information Seeking Behavior of them. Survey result shows that the Information Seeking is essential part of user study. It provides a great help in conducting the survey to get the view of the users regarding the problems faced by them to get solutions**.**

Sharma and Gupta (2012) analyze Information Seeking Behavior of Faculty Members at Sher-e-Kashmir University of Agriculture Science and Technology, Jammu, India in Internet Era: A Survey. There are two types of faculties (Agricultural Sciences and Veterinary Sciences) in this university. Data was collected by using a questionnaire from 83 faculty members in both the faculties. The finding reveals that BSNL is the major internet service provider with mostly dial-up connection. Internet is used almost on daily basis by most of the faculty members. The problem which is faced by them most of the times is slow speed of internet access. Network based services are used by a very small number of faculty members. Use of search engines and web addresses are the frequently preferred methods of internet browsing. Faculty members use internet primarily for having latest information of the subject and then for their own research purpose.

Kumar and Kumar (2011) conducted a study on Information Seeking Behavior of Library Users at Aryabhatta Research Institute of Observational Sciences (ARIES) India. The study reveals that information seeking behavior would be referring to scientist use for formal and informal communication channels and with a mainly, quantitative flavors. They are consulting

with colleagues, using journal or research paper, abstracting service, attending conferences and their institution preferences in terms of channel. After this study it may be concluded that ARIES library is fully equipped library with all resources and facilities available for seeking information. The library staff can go a long way in meeting the information needs of scientists. Its services have now been enhanced with the availability of new technology. The problem lies in that the users are not aware about the facilities available in the library. This problem can be solved by increasing user education, user awareness programs and extension services. Another problem faced by the users is the lack of time for seeking information. This problem can be solved by SDI/CAS using some new technology.

Vasappa and Shivalingaiah (2010) study information seeking patterns of researchers in the University Libraries in Karanataka. The study reveals that the research scholars depend upon their respective university library as their channel of information which is followed by internet facility. The research scholars prefer to gather research articles which serve their research purposes and prefer to visit the library to borrow books. Further the web pages are their preferred mode of communication. The research scholars visit less frequently and spent less time in the library.

Mahawar, Verma and Saha (2009) had a survey on Information Seeking Behavior of the Geologists: A Study in Geological survey of India, Lucknow and find out that information seeking behavior would be referring to scientists" use of formed and informed communication channels and with a predominantly, quantitative flavors.

Verma (2008)study Impact of Internet on Library and information Services of Engineering Institutions: A Case Study of IITs and reveals that almost all IITs are spending less than one fourth of their budget amount on printed books and the major share of remaining amount goes to journals (print & electronic) and e-books.

Mahapatra (2006) study Information Needs of Scientists and Engineers in Electronic Environment: A Case Study of Indian Exploration and Production Industry and conclude that information needs and habit of library use of scientists and technologists are related to their rank in the organization. The online access services, offline digital sources and internet services are the most popular library services in upcoming library culture. With the emerging needs and increased fascination of scientific and engineering work groups for handling and use of

electronic information resources, the information Centre's and library are expected to acclimatize with the inherent pressing needs of changed mindset of users.

Sasikala (1994) study Information Seeking Behavior of Managers in Industry. In his study he took information and library use behavior of 436 managers from 20 industrial organizations in Andhra Pradesh of India were studied. The managers were grouped in 3 levels: senior (30), middle (138) and junior (268). The survey shows that the managers only occasionally visit libraries, to satisfy their information needs from other sources as also from libraries. The findings have implications for the planning of library and information services to managers in industry.

Musib (1991) Information Seeking Patterns in the Rural Areas of West Bengal, India a Survey Report on Cottage Industries. Results show that the main sources of information regarding production; marketing, technical appliances are the self, family members, fellow professionals, friends, neighbors, relatives, shop-keepers, market interactions. A large number of respondents showed their willingness to receive public library services for required information.

1.6. RESEARCH GAP

From the literature available, it is found that a great deal of works has been carried out in information seeking behavior. No study has yet been found concerning to the study of Students of National Institute of Technology (NIT) Mizoram and therefore, to bridge the gap, the proposed study, "Information Seeking Behavior of Students of National Institute of Technology (NIT) Mizoram" has been framed.

1.7. REEARCH DESIGN

1.7.1. Statement of the Problem

The present study aims to analyze the information seeking behavior of the students of National Institute of Technology (NIT) Mizoram. The study traces out the information needs of the students, the strategies that the students apply during their information seeking process and their level of dependency at the libraries. The information seeking behaviors of the students determine the level of satisfaction of information needs that they perceived. The study is carried out in order to establish a good library system to serve students effectively and to make them eligible to make use of the library resources and qualified to face academic and societal challenges successfully.

1.8. OBJECTIVES OF THE STUDY

The objectives of the study are:

1. To evaluate the information seeking behavior by the students of NIT Mizoram
2. To identify the difficulties faced by the students while seeking information.
3. To recognize the purpose of information seeking and satisfaction level of the students
4. To explore the use of information technology for seeking information.

1.9. RESEARCH METHODOLOGY

This study is carried out using a survey method. The research instrument adopted for the study is questionnaire. From the institution 200 students have been taken as the sample covered under the study. Random sampling technique is utilized for data collection of the study. For collection of primary data from the respondents a structured questionnaire is framed with adequate questions. Total sample size is 200, selecting 40 students from each department; questionnaire is circulated containing 26 questions relating to the study.

Under the study, the primary data collected from the users is scrutinized, tabulated and analyzed for inference.

1.10. TENTATIVE CHAPTERIZATION

The proposed study comprises the following tentative chapters:

Chapter 1: Introduction
Chapter 2: National Institute of Technology Mizoram : An Overview
Chapter 3: Information Seeking Behavior: Approaches & Models
Chapter 4: Data Analysis and Findings
Chapter 5: Conclusion and Suggestions
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2.1. INTRODUCTION

After independence, India launched a massive program of development. Many large projects were undertaken to meet the needs for irrigation, power, and flood control and to establish a basic industrial base for steel, machine tools, fertilizers, transportation, drugs and pharmaceuticals, petrochemicals, power equipment etc. The country hardly had any industrial base or the infrastructure for the task of national building. A policy of planned development adopted. However, one of the major problems faced by the country during the early year of planning was the acute shortage of trained technical manpower. To meet the challenges, an ambitious program of expansion of engineering education was undertaken to overcome the situation.

India completed more than six decades after independence; during these years, the country has had eleven five year plans of development. Engineering education is a basic and essential input for national development and strengthening of the industry, economy and ultimately improving the quality of life of the people. It has made a significant contribution to India's economic development. The programs which have advanced the country and diversified and augmented production since independence are largely because of the manpower produced by engineering institutions of the country.

In India, initially engineering education was based on the British model and emphasized the importance of engineering professional practice. After independence it has been constantly influenced by American education system in its contents. The 20^{th} century witnessed tremendous progress and incredible developments took place in the field of engineering education. Technical education system is to produce trained manpower in adequate number for the economic and technological development of the country and to run its industries. It plays an important role for the economic and industrial growth, national developments and international competitiveness. It imparts technical knowledge, study, and research and facilitates technological transfer.

The National Institutes of Technology (NITs) are a group of public engineering colleges of India. On their inception decades ago, all NITs were referred to as Regional Engineering Colleges (REC's) and were governed by their respective state governments. NITs were founded to promote regional diversity and multi-cultural understanding in India. Comprising thirty autonomous institutes, they are located in one each major state/territory of India. In 2007, the Indian government declared these schools as "Institutes of National Importance".

The beginning of formal technical education in India can be dated back to the mid19th century. The major policy initiatives in the pre- independence period includes appointment of the Indian Universities commission in 1902, issue the Indian Education policy resolution in 1904 and Governor General's policy statement of 1913 stressing the importance of technical education. The establishment of IISc., Bangalore, Institute of Sugar, Textile and Leather Technology in Kanpur, NCE in Bengal in 1905 and industrial schools in several provinces and significant development includes:

- Constitution of technical education committee of the central advisory board of Education(CABA) in 1943
- Preparation of sergeant report of 1944
- Formation of All India council for Technical education (AICTE) in 1945 by the Government of India.

2.2. NATIONAL INSTITUTE OF TECHNOLOGY: GROWTH AND DEVELOPMENT

It was the dream of Pt. Jawaharlal Nehru, the 1st Prime Minister of India to see the India as a leader in Science and Technology. In 1955, Planning Commission appointed an Engineering Planning Committee (EPC), to undertake an overall assessment of the demand and supply position in respect of engineering personnel because a large number of industrial projects were completed in 2nd five year plan (1956-61). To fulfill the above said demand of technical manpower, the Government of India started seventeen Regional Engineering Collages (RECs) in different parts of the country as listed below in table 2.1.

Table-2.1: List of Regional Engineering Colleges

Sl. No	RECs	Year of Establishment
1	Warangal	1959
2	Suratkal	1960
3	Nagpur	1960
4	Bhopal	1960
5	Durgapur	1960

6	Jamshedpur	1960
7	Srinagar	1960
8	Allahabad	1961
9	Suratkal	1961
10	Calicut	1961
11	Rourkela	1961
12	Jaipur	1963
13	Kurukshtra	1963
14	Tiruchirappali	1964
15	Silture	1969
16	Jalandhar	1985
17	Hamirpur	1986

The REC system served well initially but as time passed, some state government did not shoulder proper responsibility to steer the Institutes in the right direction. Following the long standing demand for more IITs, the MHRD decided to upgrade all RECs to National Institute of Technology (NITs) in 2002 with three new NITs. The Government of India introduced the National Institute of Technology Act 2007 to bring twenty such institutions within the ambit of the act and to provide them with complete autonomy in their functioning. The individual NITs after the introduction of NITs Act have been functioning as autonomous Technical Universities and hence they can draft their own curriculum and functioning policies.

The National Institutes of Technology (NITs) are a group of public engineering colleges of India. On their inception decades ago, all NITs were referred to as Regional Engineering Colleges (REC's) and were governed by their respective state governments. NITs were founded to promote regional diversity and multi-cultural understanding in India. Comprising thirty autonomous institutes, they are located in one each major state/territory of India. In 2007, the Indian government declared these schools as "Institutes of National Importance".

Table-2.2: List of NITs

Sl.No	Name of Institutes
1	Dr. B.R. Ambedkar National Institute of Technology, Jallandhar, Punjab
2	Malaviya National Institute of Technology, Jaipur, Rajesthan
3	Maulana Azad National Institute of Technology, Bhopal, MadhyaPradesh
4	Motilal Nehru National Institute of Technology, Allahabad, UttarPradesh
5	National Institute of Technology, Aizawl, Mizoram
6	National Institute of Technology, Warangal, Telangana
7	National Institute of Technology, ArunachalPradesh
8	National Institute of Technology, Silchar, Assam
9	National Institute of Technology, Patna, Bihar
10	National Institute of Technology, Calicut, Kerala
11	National Institute of Technology, Raipur, Chattisgarh
12	National Institute of Technology, Delhi
13	National Institute of Technology, Goa
14	National Institute of Technology, Hamirpur, HimachalPradesh
15	National Institute of Technology, Kurukshetra, Haryana
16	National Institute of Technology, Srinagar, Jammu and Kashmir
17	National Institute of Technology, Jamshedpur, Jharkhand
18	National Institute of Technology, Imphal, Manipur
19	National Institute of Technology, Shillong, Meghalaya
20	National Institute of Technology, Dimapur, Nagaland
21	National Institute of Technology, Rourkela, Odisha
22	National Institute of Technology, Punducherry
23	National Institute of Technology, Surathkal, Karnataka
24	National Institute of Technology, Ravangla, Sikkim
25	National Institute of Technology, Tiruchirapalli, Tamil Nadu
26	National Institute of Technology, Agartala, Tripura
27	National Institute of Technology, Srinagar, Uttarkhand
28	National Institute of Technology, Durgapur, West Bengal

29	National Institute of Technology, Surat, Gujarat
30	National Institute of Technology, Nagpur, Maharashtra

2.3. NATIONAL INSTITUTE OF TECHNOLOGY MIZORAM - AN OVERVIEW

National Institute of Technology Mizoram, also known as NIT Mizoram or NITMZ, is one of the 31st National Institute of Technology in India. The Ministry of Human Resources Development Government of India vide order no. F.23-13-2009-III dated 30th of Oct. 2009 and 3rd March 2010, had decided to set up ten new NITs. In view of the above NIT Mizoram was started in the year 2010 in the state of Mizoram with an objective to import education, research and training leading to B. Tech, M. Tech and PhD degrees. This institute has been declared as an Institute of National Importance by an Act of Parliament. Here the students are admitted through All India Entrance Exam – Joint Entrance Exam (JEE Main). It is situated amongst the most educated states of India with a literacy rate of 91%, it beholds a very peaceful and calm environment suitable for studies. The Institute, to cop up with the present competitive needs, comprises of laboratories with the latest equipment and installed with best and latest software. National Institute of Technology (NIT) Mizoram was set up with a vision to serve societal needs of the country in particular and the world in general through achieving excellence in innovative scientific and technical education and cutting edge research. Their mission was to impart and enhance quality technical and scientific education to young men and women, and promote research in both fundamental and applied knowledge for the betterment of the society. There are 9 departments in the institute. The various programmes of the institute being offered are given below:

Table-2.3: B. Tech Programmes

Sl. No	**Name of the Course**	**Intake**	**Duration**
1.	Civil Engineering	30	4 Years
2.	Computer Science & Engineering	30	4 Years
3.	Electrical & Electronics Engineering	30	4 Years
4.	Electronics & Communication Engineering	30	4 Years
5.	Mechanical Engineering	30	4 Years

(Source: http://www.nitmz.ac.in)

Table-2.4: M. Tech Programmes

Sl. No	Name of the Course	Intake	Duration
1.	Computer Science & Engineering	10	2 Years
2.	Electrical & Electronics Engineering	10	2 Years
3.	Electronics & Communication Engineering	10	2 Years

(Source: http://www.nitmz.ac.in)

Table-2.5: Ph.D. Programmes

Sl. No	Name of the Course
1.	Department of Civil Engineering
2.	Department of Computer Science and Engineering
3.	Department of Electrical and Electronics Engineering
4.	Department of Electronics and Communication Engineering
5.	Department of Mechanical Engineering
6.	Department of Mathematics
7.	Department of Physics
8.	Department of Chemistry
9.	Department of Humanities & Social Science

(Source: http://www.nitmz.ac.in)

NIT- Mizoram was started in the year 2010 in the city of Aizawl with an objective to impart education, research and training leading to B-Tech, M-Tech, M. Sc and Ph. D Degrees. The institute, to cope with the present competitive needs, comprises of laboratories with the latest equipment and installed with best and latest software. The institute has been declared as an institute of **National Importance** by an Act of Parliament. The students are admitted through All India Entrance Exam- Joint Entrance Exam (JEE main).

The institution is currently functioning in a temporary campus in the city of Aizawl. It comprises of one(1) Administrative Block and three(3) Academic blocks at Chaltlang. The permanent campus is proposed to be located at Lengpui, Aizawl District.

There are total 469 students who enrolled in different programmes offered by the institution for the current academic year as shown below in the tables.

Table-2.6: The current list of students enrolled in B. Tech Programme

Degree	Batch	Branch	No. of Students
B. Tech	2015-19	Civil Engineering	93
		Computer Science & Engineering	80
		Electrical & Electronics Engineering	67
		Electronics & Communication Engineering	74
		Mechanical Engineering	72
		B. Tech Total	386

(Source: NIT Mizoram Administrative Block)

Table-2.7: The current list of students enrolled in M. Tech Programme

Degree	Batch	Branch	No. of Students
M. Tech	2017-19	Computer Science & Engineering	4
		Electronics & Communication Engineering	5
		Electrical & Electronics Engineering	8
		Mechanical Engineering	3
		M. Tech Total	20

(Source: NIT Mizoram Administrative Block)

Table-2.8: The current list of students enrolled in Ph.D. Programme

Degree	Batch	Branch	No. of Students
Ph. D	2015-19	Basic Science & Humanities and Social Science	20
		Computer Science & Engineering	7
		Electrical & Electronics Engineering	7
		Electronics & Communication Engineering	9
		Civil Engineering	3
		Mechanical Engineering	17
		Ph. D Total	63

(Source: NIT Mizoram Administrative Block)

2.4. A BRIEF PROFILE OF NIT MIZORAM CENTRAL LIBRARY

In order to serve the diverse library needs of the Engineering Undergraduate, Post graduate, Research Scholars, the faculty members, and other library users the central library has collection of Textbooks, e-Books, Reference books, Conference proceedings, Annual report, Magazines and non-book material such as CD-ROMS etc. The library opens 5 days a week ie; Monday – Friday as per normal office timing. The central library holds more than 7000 educational books which are as per the course requirement of the various semesters of different departments. The central library accepts donations of books from all corners. These donated books are classified and recorded separately for references. Due to space constraints the central library has not much collection of Reference books since books which are of immensely required are only collected. But the available reference books has really aid the users in imparting of knowledge and its dissemination as well. For professional development of faculties, research activities of research scholars and students the central library is also subscribing E-journals and this are accessible only through the institute network or a specific institute IP address:

(1) SPRINGER LINK (1400+ e-Journals)
(2) IEEE—IEL Online e-Journals
(3) ASME e-Journals
(4) Taylor & Francis Journals of Science and Technology
(5) INDISTAT e-Journals

The library also subscribes one local newspaper and other national newspapers like Times of India, The Telegraph, Newslink, The Economic Times, Employment News and also Magazines like India Today, Sporstar. These newspapers are also widely circulated to all the hostels through the central library. Apart from the subscription of e-Journals, collection of Textbooks, References, Newspapers and Magazines, the central library has accessed to e-books particularly from Tata McGraw Hills and Elsevier. These purchased e-books are accessible on and off the campus. The fraternity of NIT Mizoram can access these e-books anytime and anywhere. A specific username and password are assigned against this access. The list of subjects included in subscription of e-books is:

(1) Mechanical Engineering
(2) Electrical & Electronic Engineering
(3) Core Engineering

(4) Physics

(5) Chemistry

(6) Business Communication

2.4.1. Aims and Objectives of NIT-Mizoram

1. To serve the societal needs of the country in particular and the world in general through achieving excellence in innovative scientific and technical education and cutting edge research.
2. To impart and enhance quality technical and scientific education to young men and women.
3. To promote research in both fundamental and applied knowledge for the betterment of the society.
4. To offer modern undergraduate (UG) programmes in various branches of engineering, viz, Civil Engineering, Mechanical Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Computer Science and Engineering etc.
5. To initiate new Post- Graduate (PG) programmes in Civil Engineering, Mechanical Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Computer Science and Engineering, Mathematics, Physics, Chemistry, Humanities and Social Sciences, MBA etc.
6. To provide facilities for research in all Engineering departments, Basic and Applied Sciences and Humanities and Social Sciences leading to Doctoral Degree.

2.4.2. Course structure in NIT-Mizoram

The discipline in which the courses of studies for B-Tech degrees in NIT- Mizoram consists of the following:

1. Computer Science and Engineering
2. Electrical and Electronics Engineering
3. Electronics and Communication Engineering

4. Mechanical Engineering
5. Civil Engineering

The academic session is divided into two semesters, each of approximately 20 weeks duration i.e. An Autumn Semester and Spring Semester. The approved schedule of academic activities for a session of NIT- Mizoram, include the date of registration, mid-semester and end-semester examinations, inter-semester breaks etc. in the academic calendar for the session. The academic calendar provide for a total of about 90 working days in each semester.

The duration of the courses leading to the B-Tech degree is four (4) years. The curriculum for different degree programmes was proposed by the respective departments and recommended by the Undergraduate Programme and Evaluation Committee (UGPEC) and should have the approval of the senate. The departments also prepared the syllabus of each subject containing the scope of studies and detailed instructions which was to be imported by the approval of UGPEC. Every student of first year is required to register in the Extra Academic Activity(EAA). Students can choose anyone of the activities: NSS or any sports/athletic activities of NSO as may be recommended by the student's activity and sports officer (SA & SO) and approved by the Senate. To get a B-Tech degree the students has to fulfill different disciplines.

Depth Requirement: The depth requirement would be specified by the department and would include- Basic science requirement, engineering science requirement and other requirements like workshops, engineering drawing and graphics etc. Professional subjects core and electives, projects and comprehensive viva-voice.

Breadth Requirement: A students is required to take at least six subjects as his breadth subject for which slots would be made available in the curriculum. The breadth subjects must be a subject offered by other discipline but different from the subjects including electives. Students are free to choose a breadth subject provided available in terms of timetable, limitation of class size and the students eligibility.

Technology related subject Requirements: At least two HSS elective subjects, one IT subjects and one Management and Environment Engineering subjects should be included in the curriculum of any discipline.

Industrial Training and Field Work: The curriculum for B-Tech includes compulsory industrial training for 4 to 6 weeks, which should be carried out in winter vacation at the end of the fifth semester.

A student in any degree programme should complete the prescribed course work for B-Tech program of the eight semester within a maximum period of six years and in special cases the senate on the recommendation of the Department and the Under-Graduate Programme Evaluation Committee (UGPEC) further extend the total time limit for completion of all the requirements by one more year over and above the limit of six years for the B-Tech degree.

2.4.3. Grading System

The NIT-Mizoram has also adopted a grading system in award of degree like other NITs. The grade is given by letter and it based on corresponding grade per credit according to the students' performance as shown in Table-2.9.

Table-2.9: Grading system for awarding of degrees in NIT-Mizoram

Performance	Letter Grade	Grade Point Per Credit
Outstanding	AA	10
Excellent	AB	9
Very Good	BB	8
Good	BC	7
Average	CC	6
Below Average	CD	5
Marginal	DD	4
Poor	FF	0
Incomplete	II	--
Satisfactory Incomplete	SS	--
Unsatisfactory	UU	--
Registration Cancelled	RC	--
Debarred	XX	--

(source: www.nitmz.ac.in)

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www.aicte.ac.in

www.nitmz.ac.in

3.1. INTRODUCTION

Information explosion has paved the way to seek information in an increasing variety and diversity at different levels, frequency, volume and use. This situation appears to be indefinite and varied in character so that information needs of a particular group of users and information flow from a specific situation / organization are different to determine. Information is power. It is a vital source for human beings for living a prosperous life on the earth. Information is all around and is utilized in all works of life right from purchasing a pin to writing a research article by the human beings irrespective of caste, creed, and gender, rich, poor, educated and uneducated. Thus the information helps against social imbalance. It is the supreme asset than all other movable and immovable asset that the people hold on earth. In the contemporary world people are valued as rich and poor not because of their assets; but they are valued as information rich and information poor. The information rich people are those who are highly skilled in identifying their information needs and apply seeking behaviors so as to access the information from both online and traditional resources successfully and satisfying their information needs. The information poor people are lacking in their skills in getting their information needs be satisfied.

Information is very important to every aspect of today's information society or human being. The process of information acquiring, using and implementing information are known as information seeking behavior. In the case of academicians, researchers and students it is even more important because they all need right and update information for their research need. The use of information is so complex that there cannot be a single system to cope up with the task of effective retrieval without assessing their specific needs. This situation has paved the way to the concept of information search and the manner of determining the pattern of search has been considered as Information Seeking Pattern.

On the purpose and upon the basis of its usage information can be categorized into different categories. J. H. Shera (1972) has categorized information into different six categories as given:

- **Conceptual Information:** The idea, theories, hypotheses about the relationships exists among the variables in the area of a problem.
- **Empirical Information:** Experience, the data of research may be drawn from one's self or through communication from others. It may be laboratory generated or it may be a product of Literature Search.

- **Procedural Information:** The Methodology which enables the investigator to operate more effectively. Procedural information relates to the means by which the data of the investigation is obtained, manipulated and tested, it is certainly methodological, and from it has been derived the scientific attitude. The communication of procedural information from one discipline or field of investigation to another may illuminate vast shadows of human ignorance.
- **Stimulatory Information:** Man must be motivated and there are two sources of such motivation, himself and his environment. Stimulatory information that is transmitted by direct-communication the contagious enthusiasm of another individual – but whether directly or indirectly communicated. It is probably the most difficult of all forms of information to systemize. It is fortuitous by nature, it submits unwillingly to direction or compulsion.
- **Policy Information:** This is the focus of the decision making process. Collective activity necessities the definition, objective and purpose, the fixing of responsibility, the codification of rights and privileges, and the delineation of functions.
- **Directive Information:** Group activity cannot be processed effectively without co-ordination and it is through this directive information that this coordination is achieved.

The conceptual information relates to ideas, theories and hypothesis about the relationship which exists among the variables in the area of problem. Empirical information relates to data and experience of research which may be drawn from oneself or communication from others. Procedural information is the data of investigation which are obtained, manipulated and tested. It is essentially methodological and it is derived from scientific attitude. Stimulatory information is a type of information which is motivated by oneself or environmentally derived. That type of information which is focused on the decision making process is known as policy information whereas information which is used for coordination and for enabling effective group activity is grouped under directive information.

3.2. ATTRIBUTES OF INFORMATION

Our understanding of the basic nature of information is clouded by the fact that the word is used in a variety of different context as under:

- **Information as a commodity:** Information like any other commodity is meant for consumption. When information is used as a commodity, it often assumes economic value. Thus information is a commodity that can be traded and can, in fact, be bought and sold to make profit.
- **Information as energy:** Those who view information as energy regard it as a quantifiable physical entity. It can be said that the information is transmitted by, or embedded in, ordinary forms of energy.
- **Information as communication:** Information is often considered to be synonymous with communication. When one person is communicating with another, the person initiating the exchange of data is moving or transferring his or her understanding of the data (together with the actual data) to the other person (the receiver). When the data are received the person becomes informed. Being informed, therefore, is the result of communication, or information transfer.
- **Information as facts:** Information is often thought to be the same as fact. Fact is information based on real occurrences. When the term information is used in this way, it does not necessarily mean that there is any implied or actual use of the facts although one actually wonders about day to day facts (old or new), for some purpose. The fact may or may not be of immediate concern. Unless the facts are placed in context, it remains just a fact and nothing else.
- **Information as data:** Information is often thought to be the same as data. Data are the product of symbols that are organized according to established rules and conventions. A data may have meaning or may not.
- **Information as knowledge:** Information is often used interchangeably with knowledge. Knowledge implies a state of understanding beyond awareness. It represents an intellectual capability to extrapolate beyond facts and draw original conclusions. Knowledge must be deduced, not simply sensed. What we 'know' or think is often called 'information'.

3.3. INFORMATION SEEKING BEHAVIOR

Information seeking behavior is a broad term; it involves a set of actions that takes by individuals or groups to show their information need, seek information, check & select the information to fulfill their requirement or information needs.

Information seeking behavior is the application of attitudes through set of actions in order to achieve desired information need. When attitudes and actions are collaborated the performance emerges. Based on the level of performance, the satisfaction level of the acquired information is determined. A study of University College London (2008) for Joint Information Systems Committee, on information behavior of the researcher of the future in the Google Generation detailed six different characteristics of online information seeking behavior:

- Horizontal information seekers
- Navigation
- Viewers
- Squirreling behavior
- Diverse information seekers
- Checking information seekers.

Information Seeking Behavior is one of the important areas in user studies. The motives of users give raise to information needs and requirements. To quench the thrust for information users adopt numerous ways and means to access the various channels of communication of information. Information Seeking Behavior is the human behavior with respect to searching various sources, channels including use of that information. The process of searching information through various channels of communication is termed as Information Seeking Pattern. The terms Information Seeking Behavior and Information Seeking Pattern are synonymous terms.

- Information Seeking Behavior is mainly concerned with the type of information that the user needs.
- It is an activity of an individual in pursuit of information.
- It is closely related to the personal characteristics and traits of the users.
- It is an act of searching or finding or locating information needed by an individual, be a professional, academician, researcher, and consultant and so on.

The information seeking has been built on the three major factors such as social factors, system factors and information factors. All these three factors depend on the method of introducing, exploring, integrating, diffusing, and exploiting it, shown in figure-3.1.

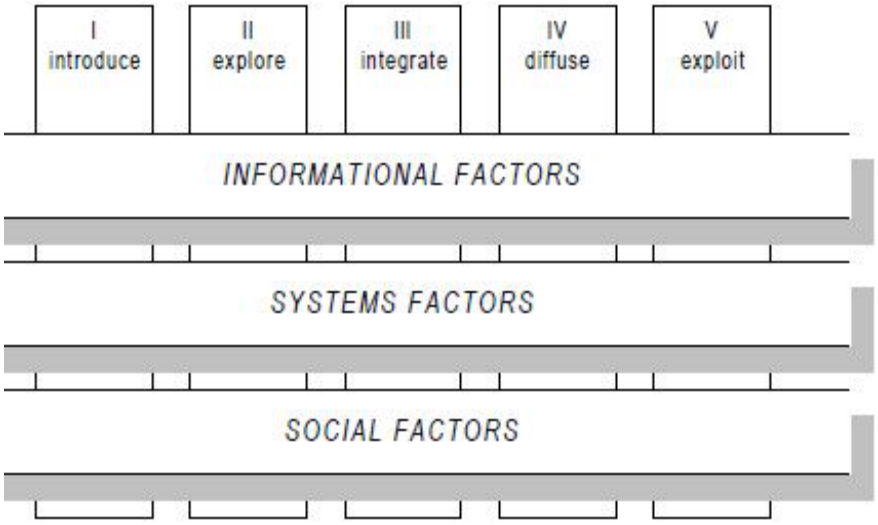

Figure-3.1: Digital Library Life Cycle

(Source: Ian Rowlands and David Bawden. 1999. Digital Libraries: A Conceptual Framework. Libri)

It refers the methods that are used by the people to retrieve or discover and gain access to information resources. (Wilson T D, 2000)**,** Information and documentation defines user study as an "Investigation of the needs and quality of the users of a library or a documentation service". Elsevier's Dictionary of library science. Information seeking behavior is a broad term, encompassing the ways individuals articulate their information need, seek, evaluate, select and use information. In other words, information –seeking behavior is a purposeful seeking for information as a consequence of a need to satisfy some goals. In the course of seeking, the individual may interact with people, or a manual information system, or with computer based information system.

Individuals' information gathering behavior is a function of the information discovered to be available, the ability to use information based on effort and the usefulness of information based on experience. Information seeking is the natural and necessary mechanism as human existence. Seeking means searching something he wants to utilize for solving the need. This is

the process of getting information from the resources with the help of the sources. In order to fulfill the required information the user actively undergoes the information seeking process (ISP). The attempt of the user in obtaining the needed information is described as the Information Seeking Behavior. (Wilson, P. 1977).

3.4. A BRIEF HISTORY OF INFORMATION SEEKING BEHAVIOR

The emergence of the concept of information seeking behavior can be understood by knowing the origin of User Studies, since the user studies cover users' characters, needs, and dependency and satisfaction level by nature. According to Wilson (1994) the term 'User studies' covers a wide range of research areas in Information Science and which can be expanded to include parts of Computer Science, Communication Studies and other fields. Its associated terms are information seeking behavior and information needs. These terms have diverse range of problem areas such as Bibliometrics, User Education, studies of Reading and Readership and Information Retrieval Design and Evaluation. At the initial stage, Ayres and McKinnie (1916) have conducted a library survey, which is the first trace of study in this direction. Later, the study of McDiarmid's (1940) 'Library survey' referred to various kinds of surveys. These library surveys were focusing on how people used libraries to satisfy their needs. The Conference of Royal Society of Information (1948) changed the path of the studies from library survey to user studies. Another Conference at international level was conducted by the National Academy of Sciences, Washington on Scientific Information (1959) focused on information needs of scientists and from there on a large number of studies on information seeking behavior of people belonging to a particular discipline were found to had been conducted.

In India, the user studies were highlighted by Ranganathan (1970) through his **"**Annotation on 'User's Survey'". Later, studies in this direction were carried out by Panwar and Vyas (1976).

This chapter describes models that are relevant to engineers' information behavior with the object of selecting the most suitable model for studying consulting engineers' information needs and information-seeking behavior. The models that have been developed to date by information behavior researchers are not necessarily applicable to all user groups. Research seems to indicate that various factors influence specific information needs and information seeking behavior that are often context-specific, such as, the users' work role. Some models comprehensively study users from information behavior, information-seeking and information

needs perspectives whereas other models only focus on aspects of information retrieval. Furthermore, a model intended for a study of information behavior should allow for a description and explanation of user behavior and should focus on the user. In this chapter some of the models that apply to information users in general and some models that have been tested on engineers are examined.

3.5. INFORMATION SEEKING BEHEVIOR APPROACHES

The term information seeking behavior has been used in the research literature about scientists and researchers since the 1950's. The current emphasis on user needs has prompted librarians to investigate the concept of information seeking behavior, drawing upon models from the disciplines of psychology, sociology, and communication theory.

It is important to examine information seeking models as what students actually do when searching for information may be very different from what librarians think the students do. Theoretical models of information seeking, including both those based on empirical research and reflection on experience, can assist librarians in creating a library and information skills curriculum which responds directly to the students' needs. Attempting to fit a curriculum to the students' processes is a better approach than to change the students' processes and strategies to fit the curriculum. This strategy, for example, has been used in the field of literacy. Researchers and teachers examined, both empirically and qualitatively, the processes and strategies that young children use when learning to read. These strategies and processes were used to create an early literacy curriculum (such as whole language combined with a phonics component) which responds directly to the needs of the learners.

Understanding the process of information seeking can help to answer questions such as: what should the library and information skills curriculum encompass; what specific skills and processes should be taught; what are the appropriate teaching methods; and what is the relationship of the library and information skills curriculum to the academic curriculum. Examining the strategies, processes, successes and failures that students use and experience when searching for information, can evolve into a library and information skills curriculum which guides the students towards information literacy.

It has been realized that information need is a composite concept of various different types of requirements and approaches to information. Melvin Voigt (1961) made a remarkable analysis of this composite nature. The findings of his study showed that the same person could

interact with the information system in different ways at different times depending upon his purpose in relation to his work, stage of his work, general interest, amount of information already available to him and so on. He identified three types of information requirements or approaches and later on other workers in the field added the fourth type. They are:

- **Current Approach:** In this approach, every worker has to keep himself abreast of current developments, up to a fair degree, not only in his specific field of work but also in the broader or fields of interest or areas, whose developments can substantially change the course of his present work. With such kind of requirement the worker interact with the information system in a general way – browsing through his favorite periodical, going through the abstract journals etc. the user with this approach requires constant interaction with the library/information system.
- **Everyday Approach:** This kind of approach stems the research workers' frequent need, in the course of his investigation, specific piece of information such as data, example. Chemical formula of a compound, a method etc. The nature of information sought in such a situation is very specific and a quick answer is usually of occurrence, as compound to other approaches.
- **Exhaustive Approach:** The exhaustive approach usually arises when work begins on a new investigation, and involves a check through all the relevant information on a given subject. It is called for less frequently than the current of everyday approaches, but is vitally important, and often urgent.
- **Catching – Up Approach:** A worker at times needs to have a brief but a complete of the recent developments of a related subject or a subject in which he was not very much interested or which did not come with this the area of his main interest. This is likely to be an area where he is not an expert. As a result of this he is not quite familiar with the subject. Hence, in such a situation, a device is required in the communication system which will help the user in quickly catching up with the subject.

Different approaches of users will have different kinds of implications on the designing of the information services. Users' needs are shaped by these approaches. Therefore, from the different approaches discussed above, it is clear that the understanding of the meaning and implications of user needs and their information seeking behavior is very important in all human activities. It is also clear that knowing the requirements of users for designing and services are very important. There are many devices and means, which can help the librarian to know about his users, and it is possible to obtain information regarding users' information requirement by conducting user studies.

3.6. INFORMATION SEEKING BEHAVIOR: MODELS

Most of the information seeking behavior models is of variety: they are statements that attempt to describe an information-seeking activity, the causes and consequences of that activity, or the relationships among stages in information-seeking behavior. A popular model during the 1980's is presented. This model illustrates the relationships between the concepts of user, need, uses and user behavior. It is adapted from Wilson's (1981) figure of Interrelationships among areas in the field of user studies and Krikelas' (1983) model of Information seeking behavior.

The model suggests that the user perceives a need in the context of the user's environment. That is, in a given environment or event (e.g. university course) the user will perceive an information need (research a paper). The perceived need will lead the user to search for information, making demands upon a variety of information sources. These information sources include information systems (university libraries and public libraries); human resources (experts, professors, colleagues); and other resources (personal library, media). Information seeking behavior may lead to either a success or a failure. If successful, information is located which will be used. This may result in the satisfaction or non-satisfaction of the original perceived need. Satisfaction occurs when the located information has been analyzed and satisfies the original need. Non-satisfaction occurs when the information does not satisfy the original need. With non-satisfaction, the information seeking process may be repeated until satisfaction occurs. A failure to find information may result in the process of information seeking being continued. Krikelas (1983) stated that: information seeking begins when someone perceives that the current state of knowledge is less than that needed to deal with some issue (or problem). The process ends when that perception no longer exists. That is, the information seeking process ends when the perceived need has been satisfied.

Each of the steps that one uses while going through the information seeking behavior process, as outline in the model may be referred to as strategies. Kuhlthau (1992) defines a strategy as "a tactic used to seek information or to work through a stage of the search process" (p. 40). That is, the entire search process is composed of strategies. A strategy may be asking a friend or professor for information (human resources), visiting the university library (information systems), or using one's personal library (other resources). Some information seeking behavior may require only one strategy such as using the university library. When all the needed

information is found, which results in satisfaction of the user's information need, the search process is ended. Some information seeking behavior may require many strategies with the user calling upon a variety of information sources because the information need is not thoroughly satisfied.

This model does not define the complexity of the research process. Information seeking is recursive, but the model suggests that it is linear; an information seeker moves from one stage to the next. Although the model does imply that the information found is processed, the aspects of analysis, synthesis and evaluation are not of prime important. It simply suggests that once the information need is satisfied by finding information, the search is over. It is also apparent that the model does not allow for the original need to be re-defined in light of information found. Rather, information must fit the original need otherwise it is discarded (resulting in dissatisfaction). The model does not allow for growth and learning on the user's part as she engages in the information seeking process. The model described is very similar to traditional library instruction as it focuses solely on skills related to sources: location, accessing and using sources. This model isolates library-dependent skills from other skills, such as critical thinking and analysis that are required in order to use information effectively.

3.6.1. CheukWai -Yi's (1998) Information-Seeking and Using Process Model

CheukWai- Yi's information-seeking and using (ISU) process model is based on Dervin's Sense-making approach. The model was tested on different professional user groups. CheukWai-Yi developed the ISU process model to illustrate the dynamic and diverse information seeking behavior exhibited by each "individual-in-situation". The model states that "human information-seeking and using behavior" create the situations that prompt the information need. The ISU Process model is made up of the following crucially different situations and information -seeking aspects that form the framework for the identification of information behavior associated with each ISU situation. The seven situations are**:** task initiating; focus forming; ideas assuming; ideas confirming; ideas rejecting; ideas finalizing; and the passing on of ideas. The information-seeking aspects are: use and choice of information sources, information relevance judgment criteria, information organization and information presentation strategies, feelings, and definition of information. CheukWai-Yi finds in his theory a relationship between the above mentioned seven situations and information-seeking aspects. The model establishes that people move between the seven ISU situations in multidirectional paths.

CheukWai-Yi contends that this makes the process of human information seeking and use systematic and predictable. CheukWai-Yi also determined that although "people-belonging-to-the-same professional-group" use similar information sources and channels but they do not have the same information needs.

3.6.2. Leckie's Model of Information Seeking of Professionals

The Leckie's model (1996) concentrates on professionals such as engineers, doctors and lawyers. This model features six factors connected by arrows flowing down from the top. When five factors are unidirectional one factor is bidirectional. According to this model the factor 'work role' enables 'tasks' to perform. The performance of the tasks creates information need. The model shows information seeking behavior as a bidirectional arrow labeled as 'information is sought'. The factor termed as 'outcomes' is the end result which connects the factors 'source of information'. 'Awareness of information' and 'information is sought' through feedback arrows.

3.6.3. Ellis's (1994) model of information-seeking behavior

Ellis' model of information-seeking behavior was tested on engineers. Ellis first described his model of information-seeking behavior in 1984 and has since then developed the model in information-seeking studies of various groups of researchers, including engineers (Ellis 2005:138-139). Ellis (in Ellis & Haugan 1997:385; Ellis 2005:140; Ingwersen & Järvelin 2005:63) derived eight generic characteristics of the information-seeking patterns of social scientists. Ellis later extended this work to physicists, chemists and engineers. Figure 3.2 is a stage process version of Ellis' model.

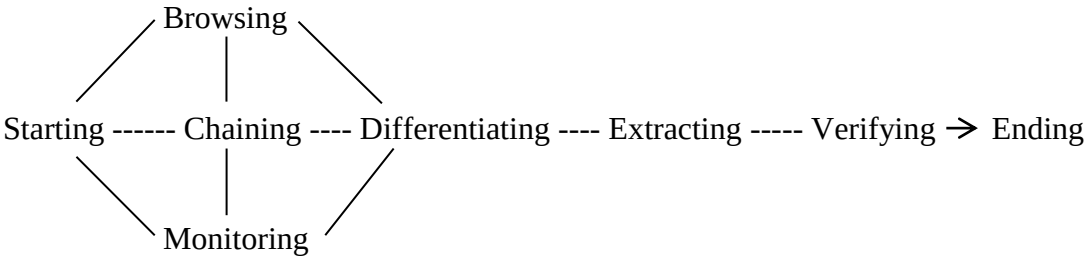

Figure-3.2: A stage process version of Ellis' (1994) behavioral framework

(Source: Wilson, T.D, 1999. Journal of Documentation)

3.6.4. Kuhlthau's Information Search Process

Kuhlthau's information search process (ISP) model in 1991 focuses on two aspects: affective and cognitive during the process of information searching. This ISP of Kuhlthau is a six-stage process of information seeking behaviour in library and information science. Kuhlthau identified the following stages in the information seeking process: (1) task initiation: uncertainty; (2) topic selection: confusion, sometimes anxiety; (3) pre focus exploration: confusion, frustration, sometimes threat and doubt; (4) focus formation: optimism, confidence of ability to complete task; (5) information collection: realization of extensive work to be done, direction, confidence; (6) presentation: relief, sometimes satisfaction and dissatisfaction.

Kuhlthau characterized the first stage**, initiation** as the stage when a person becomes aware that information will be needed to "complete an assignment". This stage of the information seeking process is filled with feelings of apprehension and uncertainty. In the next stage, **selection** where a person has chosen an idea, topic, or problem to proceed. At this point, the person is now less uncertain, and feels a sense of optimism and a readiness to start the information search process. The third stage, the **exploration process**, is when students or information seekers become confused when they encounter "inconsistent or incompatible" information. It is at this point that information seekers may become discouraged, express feelings of doubt and plan of abandoning their search process. Kuhlthau considers this stage as the most difficult stage. The fourth stages namely, focus **formulation**, which is considered as the key point, states that a focused perspective is formed, and uncertainty gradually decreases, and clarity is achieved. The information seeker starts to evaluate the gathering information. At this point, a focused perspective begins to form and there is not as much confusion and uncertainty as in earlier stages Formulation is considered to be the most important stage of the process. The information seeker will here formulate a personalized construction of the topic from the general information gathered in the exploration phase. The fifth stage, **collection** where information seeker gather the information which is relevant to the topic. At this point, the information seeker understands about the direction; he or she must have confidences. Consequently his/her uncertainty diminishes and becomes interested and deeply involved in the search process. At this point, confidence grows in the search process. The sixth stage, **presentation** is when the individual has completed the information search and information seekers prepare to present or use their findings that were found through the process. They experience relief and a sense of satisfaction if the search process is successful or disappointed if they feel that the search was a

failure. Kuhlthau states that these stages of the ISP encompass three aspects - “the affective" i.e. feelings, the cognitive, i.e. thoughts, the physical, i.e. actions.

Initiation	→	**Uncertainty of getting information**
Selection	→	**Start the information search process**
Exploration Process	→	**Inconsistent information**
Focus Formulation	→	**Uncertainty decrease**
Collection	→	**Confidence grows and uncertainty diminishes**
Presentation	→	**Completed the search process, i.e closure of searching**

Figure-3.3: Kuhlthau’s six stages Information Search Process

(Source: Kundu, Dipak Kumar, 2017. International Journal of Library and Information Studies)

3.6.5. Johnson’s Model

There are seven factors under three headings given in the Johnson’s model (1987). The fundamental process flows from left to right. The four factors under the heading antecedents are grouped under two sub headings which are termed as background factor and personal relevance. The background factor includes the factors of demographics and personal experience and the personal relevance factor includes salience and beliefs. The second heading Information carrier factors include characteristics and Utilities of the information channels selected and used by the seekers. The last heading is information seeking actions.

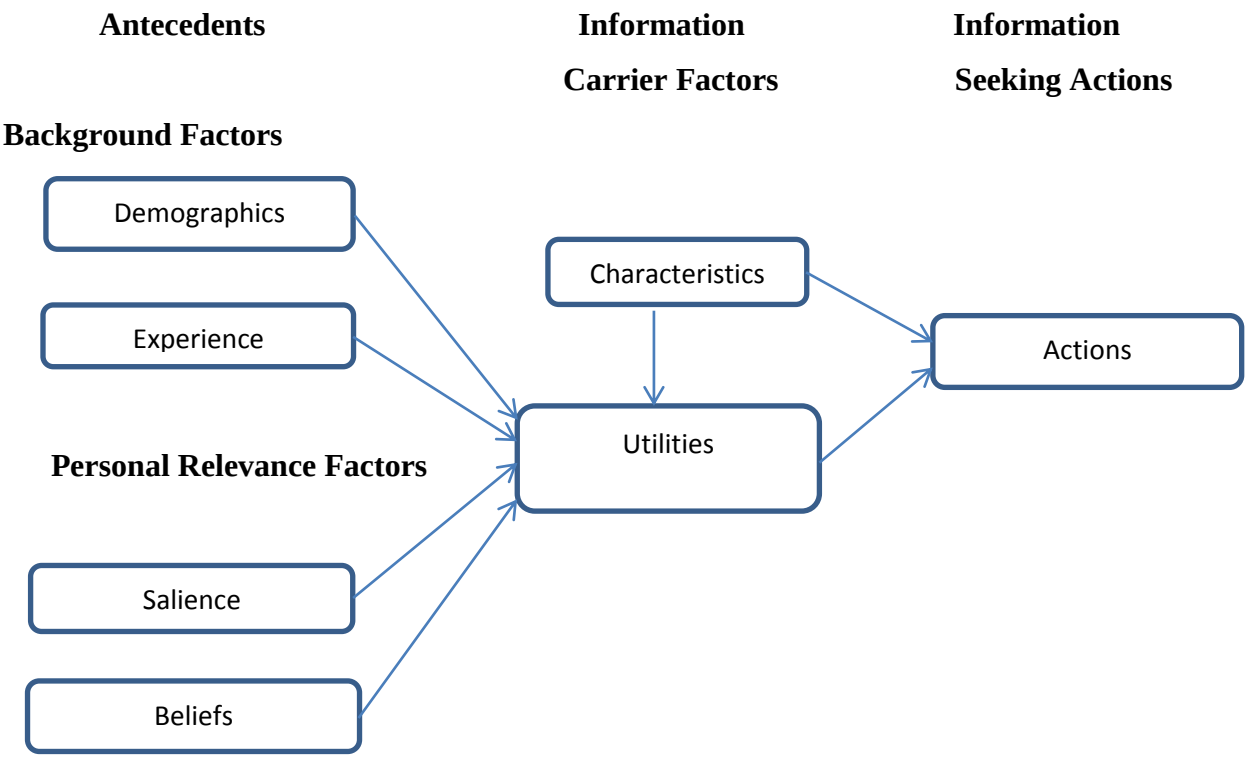

Figure-3.4: Johnsons Model (1987)

(Source: Hemantha Kumar G.H, 2017, Indian Journal of Library Science and Information Technology)

3.6.6. Dervin's Model (1983)

Dervin's sense-making theory has developed over a number of years, and cannot be seen simply as a model of information-seeking behavior. She indicates this theory as a set of assumptions, a theoretic perspective, a methodological approach, a set of research methods, and a practice' designed to cope with information perceived as a human tool designed for making sense of a reality assumed to be both chaotic and orderly. However, sense-making is implemented in terms of four constituent elements - a situation in which information problems arise; a gap, which identifies the difference between the contextual situation and the desired situation an outcome, that is, the consequences of the sense-making process, and a bridge, that is, some means of closing the gap between situation and outcome. To bridge this gap, individuals seek information to make new sense and use this information to help them in everyday life. The outcome represents the use of information to complete a task. This makes the sense-making experience a holistic experience Situation Gap. Dervin presents these elements in terms of a triangle factors: situation, gap/bridge, and outcome, which is represented by figure-3.5.

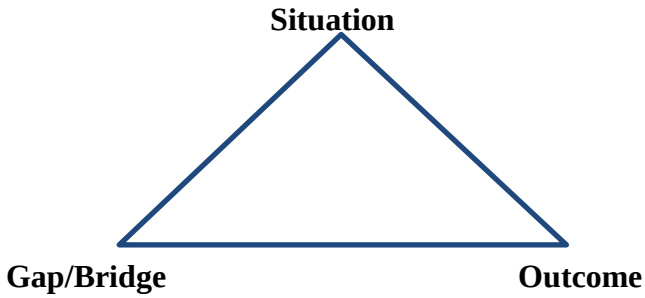

Figure-3.5: ***Dervin's 'sense-making' triangle***

However, it may be preferable to use the bridge metaphor more directly and present the model in figure-3.6 as below. The central activities of sense-making are information-seeking, processing, creating and using. By using the Sense-making approach to study users' information behavior, researchers are able to discover people's strategies, expectations, attitudes, and anxieties within their lives and work situations (Solomon 1997).

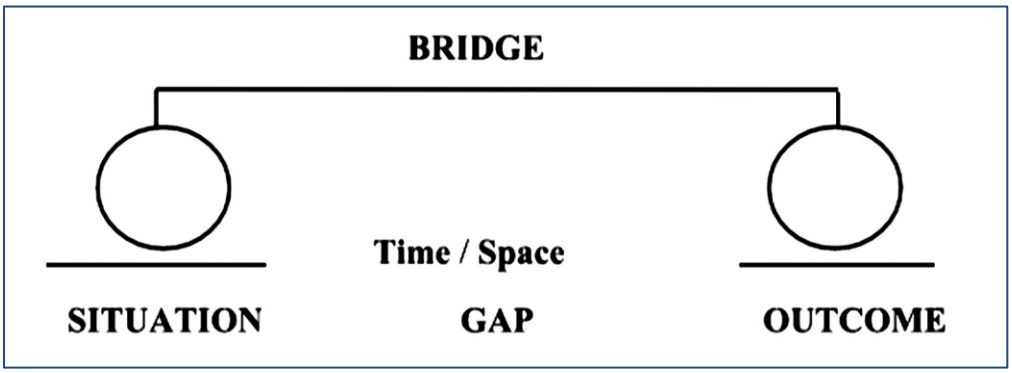

Figure-3.6*: *Dervin's sense-making model re-drawn

(Source: Kundu, Dipak Kumar, 2017, International Journal of Library and Information Studies)

Sense-making provides a theoretic perspective on information needs, but it is also a methodological approach that could be used to study information usage behavior.

3.6.7. Wilson's (1981) Model of Information Behavior

The aim of Wilson's 1981 model shown in figure-3.7 is to outline the various areas covered by what he proposed as 'information-seeking behavior' as an alternative to 'information needs'.

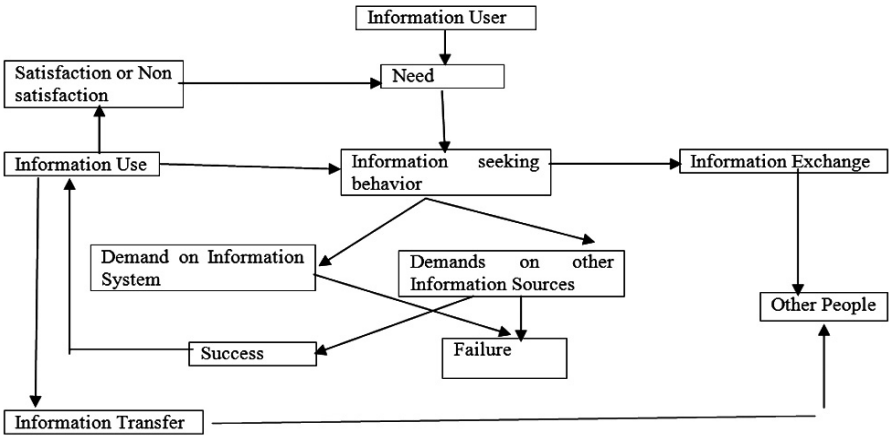

Figure-3.7*: *Wilson's information behavior model

Wilson suggests that information-seeking behavior arises due to the need perceived by an information user in different stages or sequences. In order to satisfy that need, user makes demands upon formal or informal information sources or services. These demands for information result in success or failure to find relevant information. If the result becomes successful, the individual then makes use of the information found and may either fully or partially satisfy the perceived need or indeed. The model also highlights that part of the information-seeking behavior may involve other people through information exchange and that information perceived as useful may be passed to other people, as well as being used or instead of being used by the person himself or herself.

Wilson's (1996) Model of Information Behavior

Wilson made another model which is revision to his 1981 model of information behavior. In this model shown in figure-3.8, various cycles of information activities occur, arise from the information need to the phase when information is being used (information processing and use). The primary structure of Wilson's 1996 model is based on his first one. Here the 'intervening variables' that fall under the third group in the picture show how the information seeking barriers evolve during the needs of information. These are psychological, demographic, role-related or interpersonal, environmental and source characteristics. The 1996 model now also identifies 'information seeking behavior' (the fifth group of concepts in the figure), namely passive attention, passive search, active search, and on-going search.

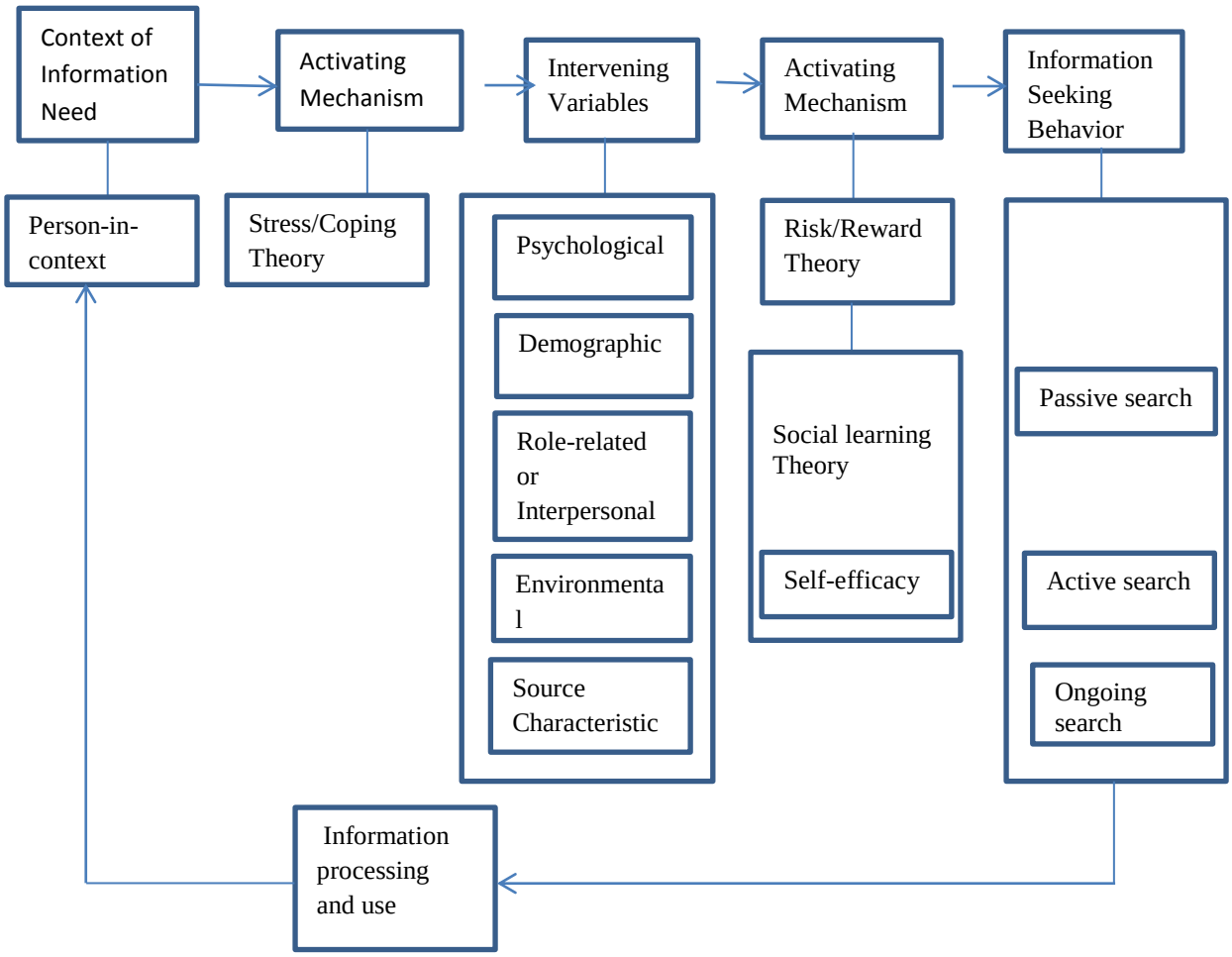

Figure-3.8: Wilson's (1996) model of information behavior

(Source: Kundu, Dipak Kumar, 2017, International Journal of Library & Information Studies)

The main principle in this revised model is that if information needs are to be satisfied, 'information processing and use' becomes an essential part of the feedback loop shown at the bottom of the model. The 1996 model also presents four relevant criteria as information seeking behavior to explain user' behavior. In the second and fourth group of concepts in figure-3.8 these mechanisms are represented as and the stress/coping, risk/reward, social learning theory and 'self-efficacy'. The activating mechanisms are psychological factors which are explained by these different theories and which prompt the user to proceed with the information seeking process. Thus, Wilson identified characteristics of a number of human behavior models in his model. In this manner, the model draws attention to the interrelated nature of information behaviour theory, whether the theory is drawn from other disciplines or from the research traditions of Information Science. Wilson also incorporated Ellis' "behavioral characteristics" of

information seeking. These characteristics describe information-seeking activities such as “active search” and “ongoing search” while Erdelez’s.

3.7. FACTORS AFFECTING INFORMATION SEEKING BEHAVIOR

Line (1969) defined the factors that affected information requirement of users namely age, experience, background, qualifications, seniority, solitary or team work, persistence, thoroughness, motivation, willingness to accept the help from others, awareness of sources, media of communication and storage, etc. An individual adopt different ways in order to satisfy an information need, and decides on certain course of action and it includes:

- Access to the source.
- Money matters the most which has to be considered
- Time involved is also an important factor
- The source whether it offers the answers to their problem
- Whether they will understand what the source provided as answer

There are other factors also affecting the information seeking behavior such as social, political, geographical, educational etc.

- **Social factors**: a desire for information on such topics like information on fashion, music which may be openly available and looked upon in certain societies while in some societies it may be looked behind closed doors.
- **Political factors**: The dictatorship political system may define the information on defense, freedom of speech and expression as forbidden to a particular group while non-availability of such information may motivate a person to resort to underground means.
- **Geographical factors**: The geographical location of an individual also determines the means adopted by a person for searching information.
- **Educational factors:** The educated and uneducated may seek information differently.

(http://shodhganga.inflibnet.ac.in/bitstream/10603/15812/10/10_chapter%205.pdf)

3.8. INFORMATION USE AND USER NEEDS

As information is an important and valuable resource, it ought to have certain qualities, namely (i) accessibility (ii) comprehensiveness (iii) precision (iv) compatibility (v) timeliness (vi) clarity (vii) flexibility (viii) verifiability, and (ix) quantifiable. The information use and user needs both are directly concerned with users. The users are the ultimate recipient of information in the communication cycle. A user may belong to a user group with identifiable interests and environment. The individual as an user may differ with regard to:

- Attitudes, Believes, Values;
- Goals;
- Capabilities;
- Communication Attitudes;
- Experience and Habit; and
- Cultural Background

The view point of users towards information varies according to the intended use. Although the user in particular regular environment may have common view points and often shares the same priorities in the value of information. The dimension/ extent of use of information are subject to priorities and intended use of the user group. There may be differences in the attitude towards the use of information. Another dimension of the information use is the purpose for which it is being used i.e. (research, planning, or problem solving). The information priorities of a user is the function of intended use at a given time and not dependent on the users discipline. Depending on the role of a user the priorities shift accordingly. For example, a person may be a researcher, today, a planner next day, an information expert another day.

User Needs: Due to complexity of users need and interpretation of the concept of users need and requirements, unanimously accepted opinion about information needs of users in different to device. However, the objectives of the institutions and kind of individuals' needs of the users, for assessing the information needs of the users. User's study is carried out with the following objectives:

- To judge the limitations of library system and services.
- To exploit the resource at the least expenses of among time and energy.

- To enhance to quality of acquisition and collection.

3.9. USER STUDY

It is only in recent years that systematic studies of user community and the information behavior of various groups have been started. Before that library professional neglected one of the most important components of an information system, namely, the user.

Most of the earlier studies of information needs were based on indirect methods, like citation, counting of recent documents, library issue records, reference records, etc. Later, professionals found that what they required was much more than what these types of studies could reveal. They required a complete picture of the functioning of the entire system of communication and its components. This resulted in the use of more direct methods of studies in information use and information seeking behavior of users. User studies have now been well accepted and performed by various direct methods. There is considerable accumulation of literature on user studies and more and more is being generated, as can be judge from the reviews appearing on the subject. The establishment of the Centre for Research on User Studies (CRUS) is an evidence of the increasing emphasis on user studies.

User Study is the means for systematic examination of the characteristics and behavior of the users of the systems and services. The user study is directly linked with the effectiveness (performance) of library and information services as they aim at satisfaction of user needs. User studies imply a willingness to relate product or system design to the perceived needs of those for whom the product or system design is intended. The user study is similar to market research survey in order to correlate product with the demand and satisfaction.

The term user study is mainly concerned with studying information processing activities of users. It essentially implies the study of the use of the demand or need of information. The use study means a sort of research activity on the part of librarian which involves psychological and sociological factors in finding the readers or research scholars' choices and varieties of interest. The information needs refer to as assessment or a study on for a sort of relevance or information to a given user and his area of concern and interest and reception interest, likes and dislikes.

Menzel (1966) has categorized the user studies broadly into three categories as under:

- Behavior studies: Studies which are carried out to find the pattern of overall interaction of the user community with the communication system without reference to any specific information receiving event are called information behavior studies.
- Use studies: Studies which are conducted to find out the use of any communication medium such as primary periodical, secondary periodical and other sources are called use studies.
- Information flow studies: The studies which are conducted to find the pattern of flow of information in the communication system is the information flow studies.

The user studies have not been restricted to actual users alone. Studies have also been made of non-users, and such non-users may be those who are unable to use information due to mental, physical and sociological reasons; or those professionals like doctors, dentists, solicitors, teachers and social workers who may often be un-inclined or unable to visit information centers due to professional demands. User studies have also, therefore, to identify such groups who can be potential users and point out ways and means to react them. User studies are excellent tools for estimating information requirements of a specific group of users. These studies often designed to identify and to analyze how various persons or groups use libraries.

Thus user studies are often investigated as attempts to understand, justify, explain, or expand library usage and consequently to gain more knowledge about the process of communication in so far as libraries and their clientele are concerned.

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4.1. INTRODUCTION

Information is important for all kinds of developments; it has become a resource, a product, a need and a basic material for decision making process. But, everybody is facing problem due to information explosion, so people get confused about the information need, information access and information sources. The information need, access and sources vary from person to person according to their ability. Libraries play a vital role in the process of information seeking. Due to resource sharing between the libraries with electronic consortia, the expectation and behavior of library users is also changing day by day. Indeed, for many users of the library, access to networked information resources, rather than physical access, is the preferred method of use in this present scenario. Thus the information seeking behavior is used here to include all activities comparing information seeking, information gathering, retrieving and communication activities performed in the library.

Information is most important for teaching, research and development. The rapid increase in the amount of published information and the effects of this abundance of data leads to rapid growth for information. As the amount of available data grows, the problem of managing the information becomes more difficult, which can lead to information overload. Most of the individuals gain information by means of observation experience and experiments. Studies on information need perhaps one of the most effective methods of understanding the user information requirements. Today libraries are surrounded by networked data that is connected to Internet-based services to make desired information sources accessible to the academic community – students, scholars, staff, and the faculty alike. This study aims to make library users aware of the collection and services of the library. The present study also will project the effectiveness of sources and services of college libraries of National Institute of Mizoram. The study highlights the adequacy of the collection and services with other various needs of the college library users. The study also examines the effective channels through which information is accessed. The study focuses on the skill of using printed or electronic sources available in the library.

4.2. DATA ANALYSIS

Analysis of data is significant to establish sense out of the collected data. Structured questionnaire were distributed among the selected sample to retrieve data which reflects the

information seeking behavior of the students of NIT Mizoram under study. The collected data are further analyzed using suitable statistical methods to land on the framed objectives.

A total of 200 questionnaires were distributed to the students of NIT-Mizoram out of which 160 filled questionnaires were received which constitutes 80% out of the total quantum of questionnaires distributed.

4.2.1. Age wise analysis of responses

Table-4.2.1: Age wise distribution of respondents

Age	No. of respondents	Percentage
17	25	16%
18	32	20%
19	28	17%
20	24	15%
21	17	11%
Above 22	34	21%
Total	**160**	**100%**

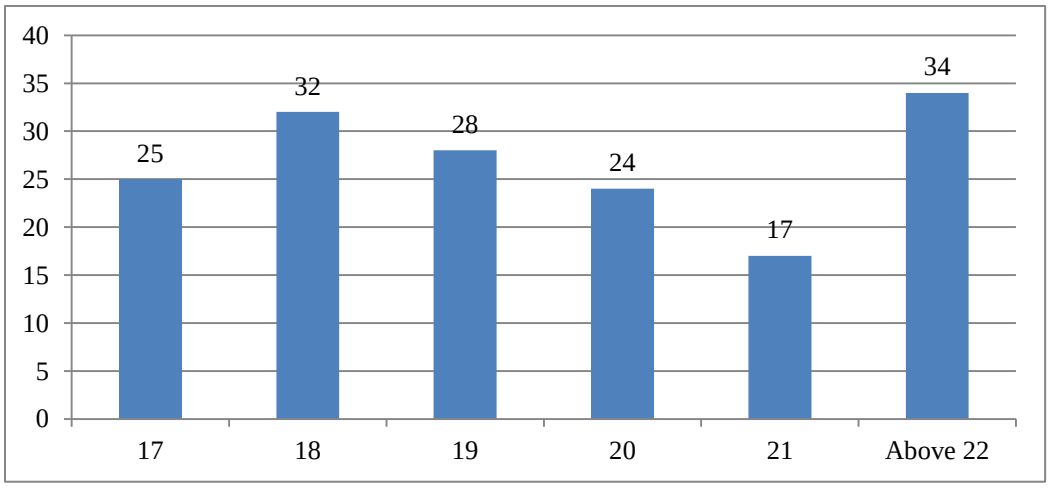

Figure-4.2-A: Analysis by age wise response

Table-4.2.1 and Figure-4.2-A depicts the age group of respondents which is supported by figure-4.3-A. Analysis shows that 21% respondents belong to the age group of 22 above, followed by 18(20%), age 19(17%), age 17(16%), age 20(15%), age 21(11%).

4.2.2. Gender wise Analysis

Table-4.2.2: Gender wise analysis of respondents

Gender	No. of respondents	Percentage
Male	112	70%
Female	48	30%
Total	**160**	**100%**

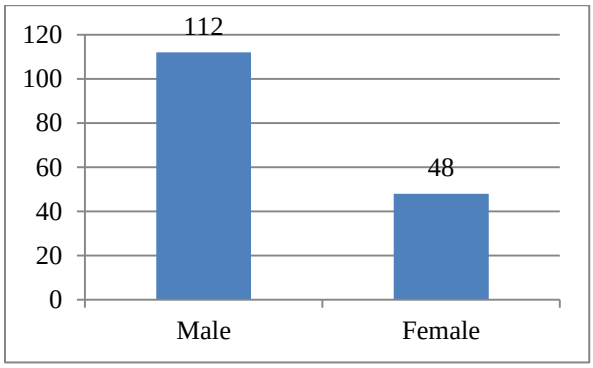

Figure-4.2-B: Analysis by gender wise response

Table-4.2.2 and Figure-4.2-B shows gender wise analysis of respondents, and it is found that majority students of NIT Mizoram are male because out of 160 respondents 112(70%) respondents are male and 48(30%) respondents are female.

4.2.3. Department wise Response

Table-4.2.3: Department wise analysis by respondents

Sl. No	Department	No. of respondents	Percentage
1.	Civil Engineering	28	18%
2.	Electrical and Electronic Engineering	40	25%
3.	Computer Science and Engineering	27	17%
4.	Electronic and Communication Engineering	31	19%
5.	Mechanical Engineering	34	21%
	Total	**160**	**100%**

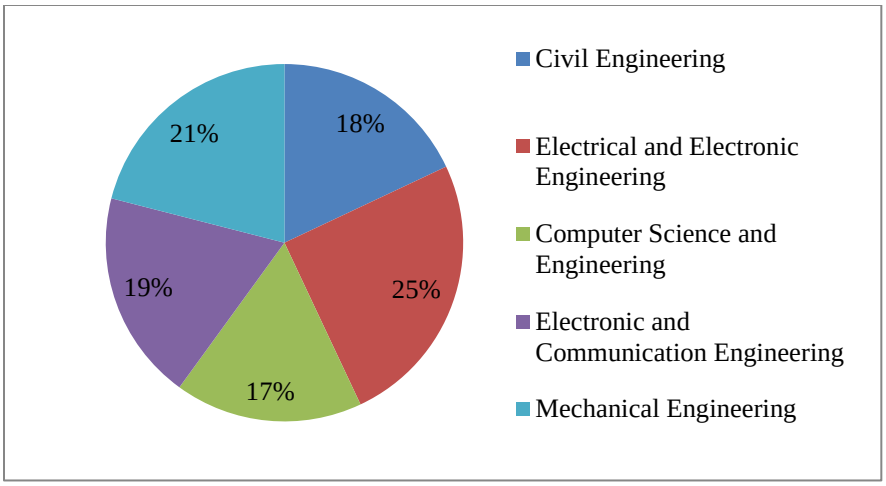

Figure-4.2-C: Analysis by department wise response

A total of 200 questionnaires are distributed evenly among the five departments of NIT-Mizoram out of which 160 responses were received back. Table-4.2.3 shows that 40(25%) of the respondents belong to Electrical and Electronic Engineering, followed by Mechanical Engineering 34(21%) respondents, Electronic & Communication Engineering contributes 31(19%) respondents, Civil Engineering have 28(18%) respondents and Computer Science & Engineering 27(17%) respondents and Figure-4.2-C depicts the same.

4.2.4. Regularity in visiting Library

Table-4.2.4: Regularity in visiting Library by respondents

Visiting	No. of respondents	Percentage
Yes	94	59%
No	66	41%
Total	**160**	**100%**

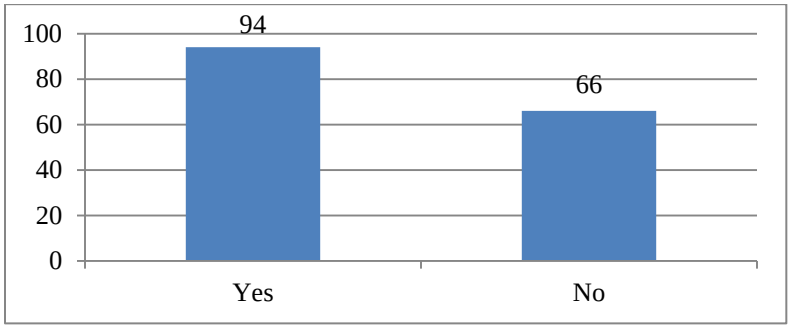

Figure-4.2.-D: Analysis of regularity in visiting Library

As shown in Table-4.2.4 and Figure-4.2-D majority of the students of NIT Mizoram pay a regular visit to the library, 94(59%) respondents tick 'Yes' option and 66(41%) respondents tick 'No' option, which means from the overall respondents lesser students are irregular in visiting the library.

4.2.5. Purpose of seeking information by respondents

Table-4.2.5: Analysis of purpose of seeking information

***(Note:** Respondents are allowed to choose more than one options)*

Purpose	No. of respondents (N=160)	Percentage
For preparing notes	75	47%
For writing assignments	31	19%
For making presentations	22	14%
Keep up with latest development in the field	33	21%
Evolving innovative ideas and techniques	43	27%

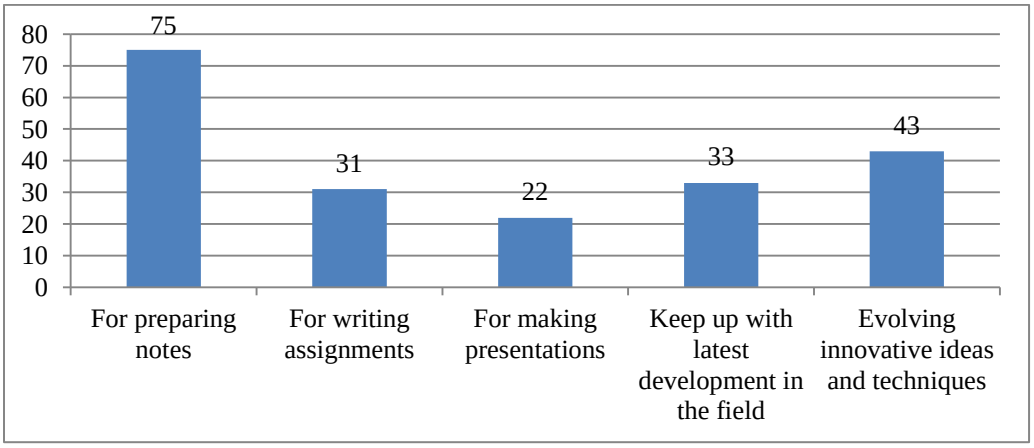

Figure-4.2-E: Purpose of seeking information by respondents

In Table-4.2.5 and Figure-4.2-E it is shown that majority of the respondents i.e. 75(47%) seek information for preparing notes, followed by 43(27%) respondents who seek information for evolving innovative ideas and techniques, 33(21%) respondents who seek information to keep up with latest development in the field, 31(19%) respondents who seek information for writing assignments and 22(14%) respondents who seek information for making presentations. Every respondent are given the liberty to choose multiple options given in the questionnaire.

4.2.6. Levels of dependency of library by respondents

Table-4.2.6: Levels of dependency

(Note: Respondents have been allowed to choose more than one options if they are finding it appropriate)

Source	Continuously dependent	Frequently dependent	Occasionally dependent	Not dependent
Library	34(21.25%)	61(38.12%)	45(28.12%)	20(12.5%)
Faculty	52(32.5%)	48(30%)	38(23.75%)	22(13.75%)
Personal/Friends	70(43.75%)	28(17.5%)	37(23.12%)	25(15.62%)
Internet	81(50.62%)	34(21.25%)	23(14.37%)	22(13.75%)
Others, please specify	4(2.5%)			

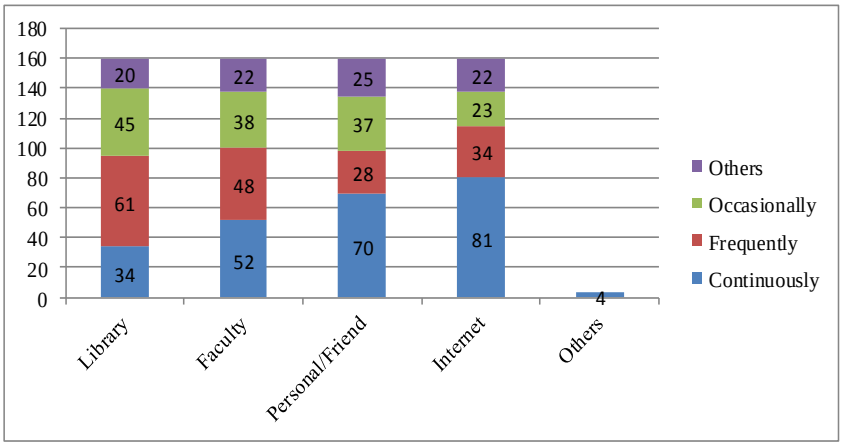

Figure-4.2-F: Levels of dependency

As shown in Table-4.2.6 and Figure-4.2-F from 160 respondents, levels of dependency on library are: 34(21%) continuously depend on library, 61(38%) frequently depend on library, 45(28%) occasionally depend and 20(13%) are not depending on the library. From 160 respondents 52(32%) respondents depend continuously to faculties, 48(30%) depend frequently to faculties, 38(24%) depend occasionally and 22(14%) are not depending to their faculties. From 160 respondents 70(44%) continuously depend to themselves /friends, 28(17%) depend frequently to themselves/friends, 37(23%) occasionally depend to themselves/friends and 25(16%) are not depending to themselves/friends. From 160 respondents 81(51%) continuously depend to internet, 34(21%) frequently depend to internet, 23(14%) occasionally depend to internet and 22(14%) are not depending to internet. 4(2.5%) depend on their seniors and gaming zone.

4.2.7. Frequency of library visit by respondents

Table-4.2.7: Frequency of library visit

Frequency	No. of respondents	Percentage
Daily	41	26%
Weekly	77	48%
Monthly	23	14%
Rarely	19	12%
Total	**160**	**100%**

Table-4.2.8: Frequency of library visit by Male & Female respondents

Frequency	Male	Female
Daily	30(19%)	8(5%)
Weekly	58(36%)	22(14%)
Monthly	14(9%)	10(6%)
Rarely	10(6%)	8(5%)

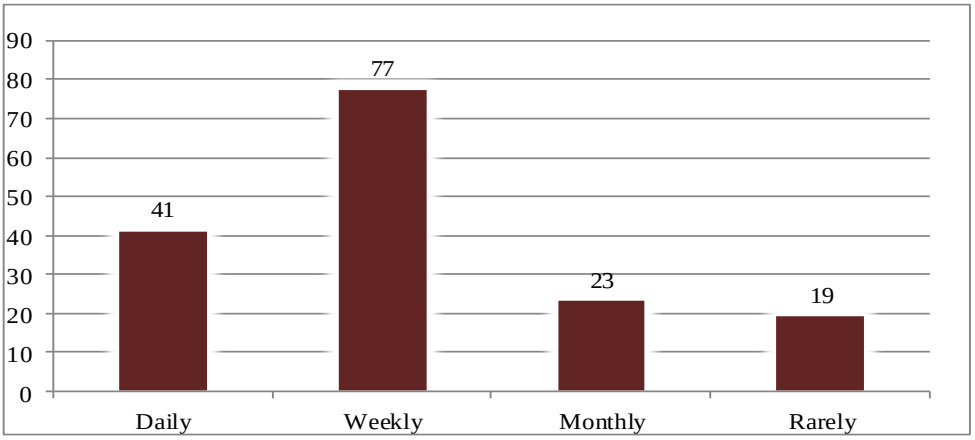

Figure-4.2-G: Frequency of library visit

Table-4.2.7 and Figure-4.2-G shows how frequently the students of NIT Mizoram pay a visit to the library. Majority respondents 77(48%) visit the library weekly, 41(26%) respondents visit the library daily, 23(14%) respondents visit the library monthly and 19(12%) respondents rarely visit the library. As shown in Table-4.2.8 30(19%) male visit library daily, while only 8(5%) female visit library daily. 58(36%) male visit library weekly, while 22(14%) female visit library weekly. 14(9%) male visit library monthly, and 10(6%) female visit library monthly. 10(6%) male visit library rarely, and 8(5%) female visit library rarely.

4.2.9. Preferred mode of Access by respondents

Table-4.2.9: Analysis of preferred mode of access

Mode of accessing	No. of respondents	Percentage
Print Mode	75	47%
Digital/Online Mode	85	53%
Total	**160**	**100%**

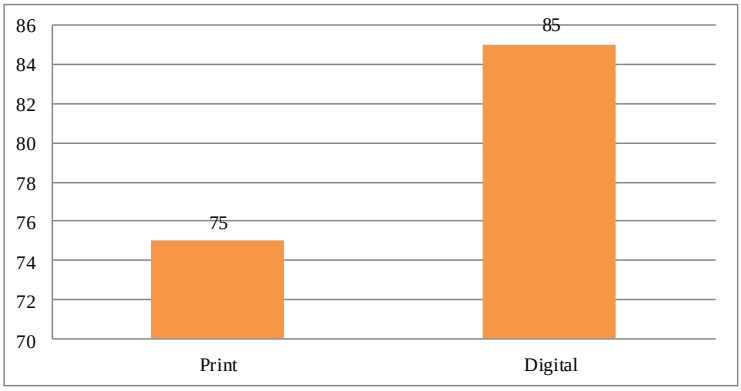

Figure-4.2-H: Preferred mode of access

Table-4.2.9 and Figure-4.2-H shows the preferred mode of access over others in seeking information. Majority respondents 85(53%) preferred digital mode of access, and 75(47%) respondents preferred print mode of access.

4.2.10. Language barrier in information seeking by respondents

Table-4.2.10: Analysis of language barrier in information seeking

Language barrier	No. of respondents	Percentage
Yes	46	29%
No	114	71%
Total	**160**	**100%**

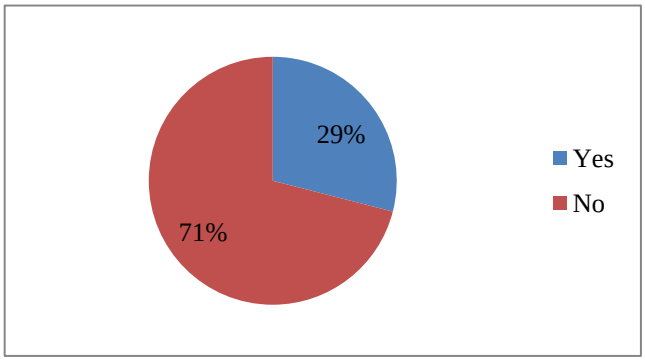

Figure-4.2-I: Language barrier in seeking information

Table-4.2.10 and Figure-4.2-I shows how the respondents feel language as a barrier in seeking information. Majority respondents i.e. 114(71%) opted that language is not a barrier in seeking information while 46(29%) opted that language is a barrier while seeking information.

4.2.11. Respondent's library visiting behavior

Table-4.2.11: Analysis of visiting behavior of library

(Note: Respondents have been allowed to choose more than one options if they are finding it appropriate)

Visiting behavior	No. of respondents (N=160)	Percentage
Habit	65	41%
Motivation from faculty	37	23%
Awareness created by library	36	23%
Library atmosphere	52	33%

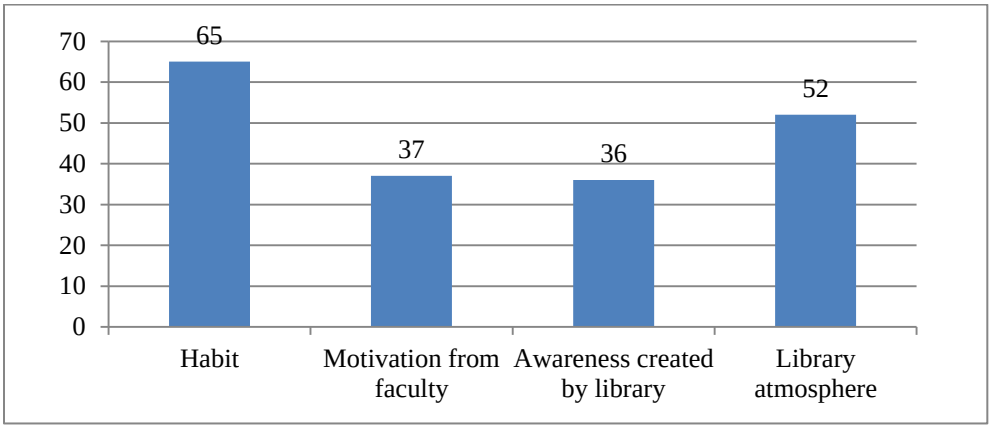

Figure-4.2-J: Visiting behavior of library

Table-4.2.11 and Figure-4.2-J, that majority of the respondents (55) visits the library by habit followed by 52 respondents who visit the library because of library atmosphere, 37 respondents who visit the library through motivation given by the faculty members and 36 respondents visit library by getting awareness created by library.

4.2.12. Purpose of library visit by respondents

Table-4.2.12: Purpose of library visit

(Note: Respondents have been allowed to choose more than one options)

Purpose	No of respondents (N=160)	Percentage
To read books	83	52%
To borrow books	94	59%
To read journals/periodicals	28	18%
To access e-resources	27	17%

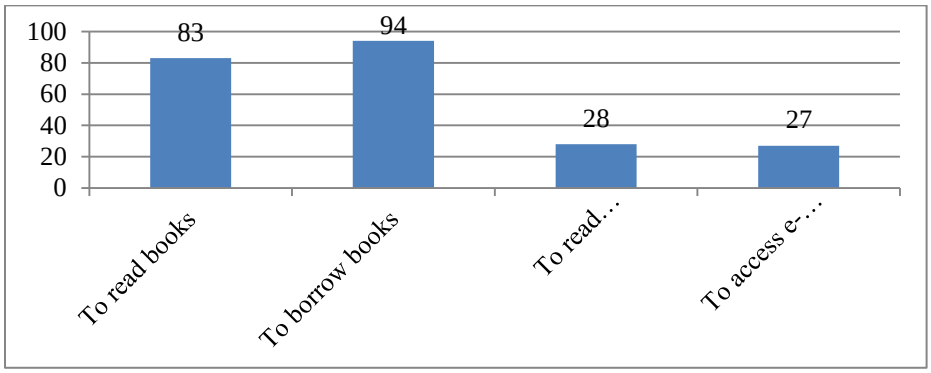

Figure-4.2-K: Analysis of purpose of library visit

Table-4.2.12 and Figure-4.2-K shows the purposes of library visit by the respondents. 93 respondents visit the library to borrow books. 83 respondents visit the library to read books, 28 respondents visit the library to read journals/periodicals, and 27 respondents visit the library to access e-resources.

4.2.13. Purposes of library visit

Table-4.2.13: Purposes of library visit

Purpose	Daily	Weekly	Monthly	Rarely
For preparing notes	21(13.12%)	69(43.12%)	24(15%)	46(28.75%)
For writing assignments	13(8.12%)	43(26.87%)	38(23.75%)	66(41.25%)
For making presentations	14(8.75%)	26(16.25%)	38(23.75%)	82(51.25%)
Question bank	30(18.75%)	38(23.75%)	29(18.12%)	63(39.37%)
General knowledge	33(20.62%)	56(35%)	21(13.12%)	50(31.25%)
Keep up with latest development in the field	28(17.5%)	43(26.87%)	27(16.87%)	62(38.75%)
Evolving innovative ideas and techniques	30(18.75%)	41(25.62%)	26(16.25%)	63(39.37%)

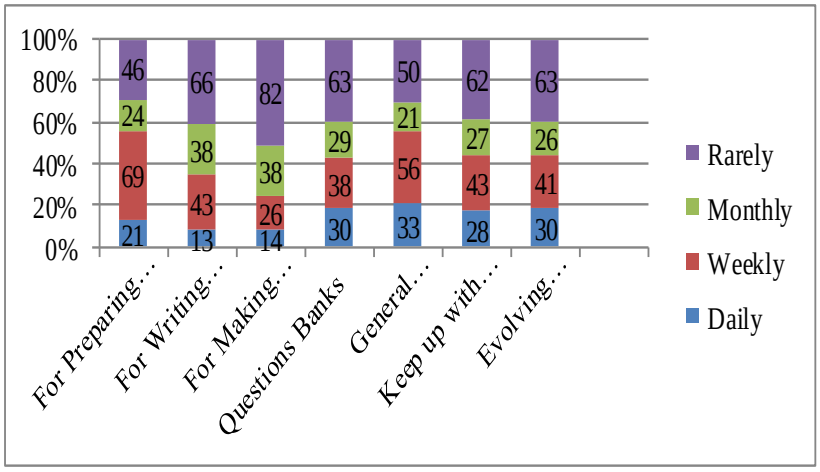

Figure-4.2-L: Analysis of purposes of library visit

Table-4.2.13 and Figure-4.2-L represent the various purposes of library visit by the respondents. 21(13%) visit library daily for preparing notes, 69(43%) visit library weekly for preparing notes, 24(15%) visit library monthly for preparing notes and 46(29%) visit library rarely for preparing notes. 13(8%) visit library daily for writing assignments, 43(27%) visit library weekly for writing assignments, 38(24%) visit library monthly for writing assignments and 66(41%) rarely visit library for writing assignments. 14(9%) visit library daily for making presentations. 26(16%) visit library weekly for making presentations, 38(24%) visit library monthly for making presentations and 82(51%) rarely visit library for making presentations. 30(19%) visit library daily for checking out question bank, 38(24%) visit library weekly for checking out question bank, 29(18%) visit library monthly for checking out question bank and 63(39%) rarely visit library for checking out question bank. 33(21%) visit library daily for further general knowledge, 56(35%) visit library weekly for further general knowledge, 21(13%) visit library monthly for further general knowledge and 50(31%) rarely visit library for further general knowledge. 28(17%) visit library daily to keep up with latest development in the field, 43(27%) visit library weekly to keep up with latest development in the field, 27(17%) visit library monthly to keep up with latest development in the field and 62(39%) rarely visit library to keep up with latest development in the field. 30(19%) visit library daily for evolving innovative ideas and techniques, 41(26%) visit library weekly for evolving innovative ideas and techniques, 26(16%) visit library monthly for evolving innovative ideas and techniques and 63(39%) rarely visit library for evolving innovative ideas and techniques.

4.2.14. Amount of time spent in the library by respondents

Table-4.2.14: Amount of time spent in the library

Sources of information	Less than 1hr	1-2hrs	2-3hrs	3hrs above	Total
Reading text books	113(70.62%)	27(16.87%)	20(12.5%)	Nil	**160(100%)**
Reading reference resources	130(81.25%)	20(12.5%)	10(6.25%)	Nil	**160(100%)**
Reading newspapers	146(91.25%)	14(8.75%)	Nil	Nil	**160(100%)**
Collecting information from back volumes	124(77.5%)	24(15%)	12(7.5%)	Nil	**160(100%)**
Accessing online resources	128(80%)	18(11.25%)	13(8.12%)	1(0.62%)	**160(100%)**

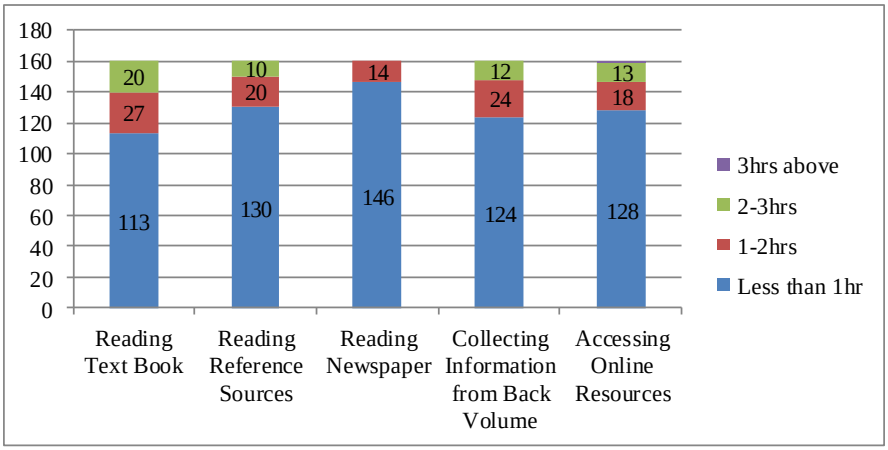

Figure-4.2-M: Analysis of time spent in the library

Table-4.2.14 and Figure-4.2-M clearly shows the amount of time spent in the library. 113(71%) respondents spend less than 1hr to read text books in the library. 27(17%) respondents spend 1-2hrs to read text books in the library. 20(12%) respondents spend 2-3hrs to read text books in the library. 130(81%) respondents spend less than 1hr to read reference resources in the library. 20(13%) respondents spend 1-2hrs to read reference resources in the library. 10(6%) respondents spend 2-3hrs to read reference resources in the library. 146(91%) majority respondents spend less than 1hr to read newspaper in the library. 14(9%) respondents spend 1-2hrs to read newspaper in the library. 124(78%) respondents spends less than 1hr to collect information from back volumes in the library. 24(15%) respondents spend 1-2hrs to collect information from back volumes in the library. 12(7%) respondents spend 2-3hrs to collect information from back volumes in the library. 128(80%) respondents spend less than 1hr to access online resources in the library. 18(11%) respondents spend 1-2hrs to access online

resources in the library. 13(8%) respondents spend 2-3hrs to access online resources in the library. 1(1%) respondent spend more than 3hrs to access online resources in the library.

4.2.15. Satisfaction level on the arrangement and retrieval of information by respondents

Table-4.2.15: Satisfaction level on the arrangement and retrieval of information

Resource	Highly satisfied	Satisfied	Fairly satisfied	Not satisfied	Total
Books	32(20%)	77(48.12%)	33(20.62%)	18(11.25)	**160(100%)**
Periodicals	12(7.5%)	49(30.62%)	41(25.62%)	58(36.25%)	**160(100%)**
Reference resource	27(16.87%)	48(30%)	42(26.25%)	43(26.87%)	**160(100%)**
Question bank	20(12.5%)	39(24.37%)	42(26.25%)	59(36.87%)	**160(100%)**
Back volumes	12(7.5%)	50(31.25%)	34(21.25%)	64(40%)	**160(100%)**
Online resource	20(12.5%)	40(25%)	26(16.25%)	74(46.25%)	**160(100%)**

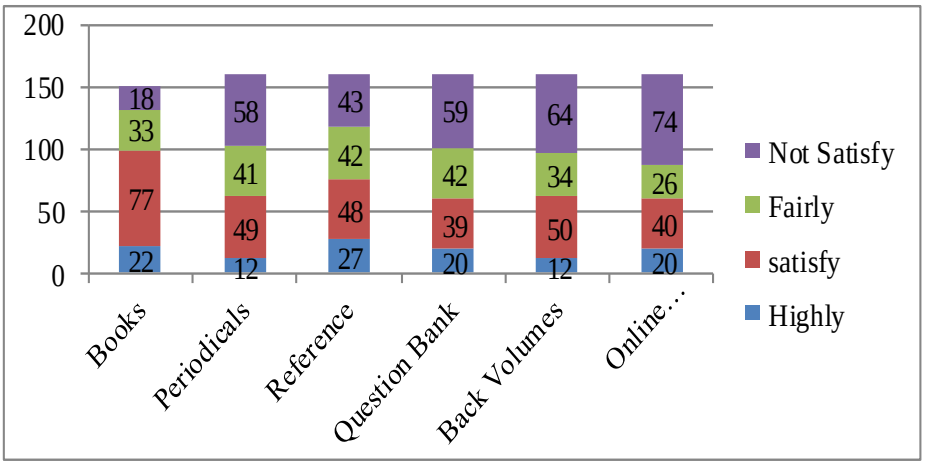

Figure-4.2-N: Analysis of satisfaction level on the arrangement and retrieval of information

Tabe-4.2.15 and Figure-4.2-N shows the satisfaction level on the arrangements and retrieval of information from the above resources. 77(48%) respondents are highly satisfied to the arrangement and retrieval of information of books. 33(21%) respondents is fairly satisfied to the arrangement and retrieval of information of books. 32(20%) respondents are satisfied to the arrangement and retrieval of information of books. 18(11%) are not satisfied to the arrangement and retrieval of information of books. 58(36%) respondents are not satisfied to the arrangement and retrieval of information of periodicals. 49(31%) respondents are satisfied to the arrangement and retrieval of information of periodicals. 41(26%) respondents are fairly satisfied to the arrangement and retrieval of information of periodicals. 12(7%) respondents are highly satisfied to the arrangement and retrieval of information of periodicals. 48(30%) respondents are satisfied

to the arrangement and retrieval of information of reference resources. 43(27%) respondents are not satisfied to the arrangement and retrieval of information of reference resources. 42(26%) are fairly satisfied to the arrangement and retrieval of information of reference resources. 27(17%) are highly satisfied to the arrangement and retrieval of information of reference resources. 59(37%) respondents are not satisfied to the arrangement and retrieval of information of question bank. 42(26%) respondents are fairly satisfied to the arrangement and retrieval of information of question bank. 39(24%) respondents are satisfied to the arrangement and retrieval of information of question bank. 20(13%) respondents are highly satisfied to the arrangement and retrieval of information of question bank. 64(40%) respondents are not satisfied to the arrangement and retrieval of information of back volumes. 50(31%) respondents are satisfied to the arrangement and retrieval of information of back volumes. 34(21%) respondents are fairly satisfied to the arrangement and retrieval of information of back volumes. 12(8%) respondents are highly satisfied to the arrangement and retrieval of information of back volumes. 74(46%) respondents are not satisfied to the arrangement and retrieval of information of online resources. 40(25%) respondents are satisfied to the arrangement and retrieval of information of online resources. 26(16%) respondents are fairly satisfied to the arrangement and retrieval of information of online resources. 20(13%) respondents are highly satisfied to the arrangement and retrieval of information of online resources.

4.2.16. Sources of information prefer to keep update with current developments in the field of study

Table-4.2.16: Sources of information prefer to keep update with current developments in the field of study

Source	Highly preferred	Preferred	Fairly preferred	Not preferred	Total
Books	74(46.25%)	59(36.87%)	14(8.75%)	13(8.12%)	**160(100%)**
Journals/Magazine	38(23.75%)	58(36.25%)	39(24.37%)	25(15.62%)	**160(100%)**
Reference resource	38(23.75%)	67(41.87%)	26(16.25%)	29(18.12%)	**160(100%)**
Current awareness service	39(24.37%)	50(31.25%)	38(23.75%)	33(20.62%)	**160(100%)**
Online resource	63(39.37%)	42(26.25%)	23(14.37%)	32(20%)	**160(100%)**
Newspapers	46(28.75%)	35(21.87%)	35(21.87%)	44(27.5%)	**160(100%)**

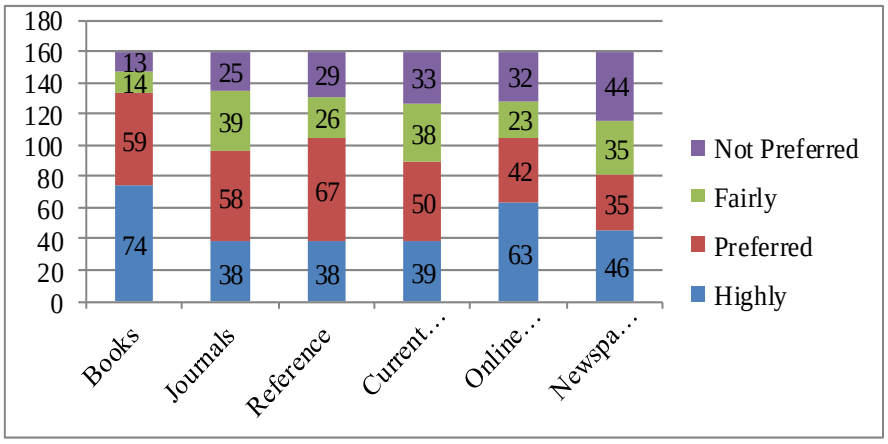

Figure-4.2-O: Analysis of sources of information prefer to keep update with current developments in the field of study

Table-4.2.16 and Figure-4.2-O shows that 74(46%) respondents highly prefer to keep update with current developments in the field of study with books. 59(37%) %) respondents prefer to keep update with current developments in the field of study with books. 14(9%) %) respondents fairly prefer to keep update with current developments in the field of study with books. 13(8%) %) respondents not prefer to keep update with current developments in the field of study with books. 58(24%) %) respondents prefer to keep update with current developments in the field of study with journals/magazine. 39(24%) respondents fairly prefer to keep update with current developments in the field of study with journals/magazine. 38(24%) respondents highly prefer to keep update with current developments in the field of study with journals/magazine. 25(16%) respondents not prefer to keep update with current developments in the field of study with journals/magazine. 67(42%) respondents prefer to keep update with current developments in the field of study with reference resource. 38(24%) respondents highly prefer to keep update with current developments in the field of study with reference resource. 29(18%) respondents not prefer to keep update with current developments in the field of study with reference resource. 26(16%) respondents fairly prefer to keep update with current developments in the field of study with reference resource. 50(31%) respondents prefer to keep update with current developments in the field of study with current awareness service. 39(24%) respondents highly prefer to keep update with current developments in the field of study with current awareness service. 38(24%) respondents fairly prefer to keep update with current developments in the field of study with current awareness service. 33(21%) respondents not prefer to keep update with current developments in the field of study with current awareness

service. 63(40%) respondents highly prefer to keep update with current developments in the field of study with online resource. 42(21%) respondents prefer to keep update with current developments in the field of study with online resource. 32(20%) respondents not prefer to keep update with current developments in the field of study with online resource. 23(14%) respondents fairly prefer to keep update with current developments in the field of study with online resource. 46(29%) respondents highly prefer to keep update with current developments in the field of study with newspaper. 44(27%) respondents not prefer to keep update with current developments in the field of study with newspaper. 35(22%) respondents prefer to keep update with current developments in the field of study with newspaper. 35(22%) respondents fairly prefer to keep update with current developments in the field of study with newspaper.

4.2.17. View on library collection

Table-4.2.17: View on library collection by respondents

Source	Highly satisfied	Satisfied	Fairly satisfied	Not satisfied	Total
Books	40(25%)	60(37.5%)	35(21.87%)	25(15.62%)	**160(100%)**
Journals/Magazine	20(12.5%)	45(28.12%)	57(35.62%)	38(23.75%)	**160(100%)**
Reference resource	28(17.5%)	48(30%)	44(27.5%)	40(25%)	**160(100%)**
Current awareness service	16(10%)	41(25.62%)	52(32.5%)	51(31.87%)	**160(100%)**
Online resource	21(13.12%)	38(23.75%)	41(25.62%)	60(37.5%)	**160(100%)**
Newspapers	29(18.12%)	43(26.87%)	46(28.75%)	42(26.25%)	**160(100%)**

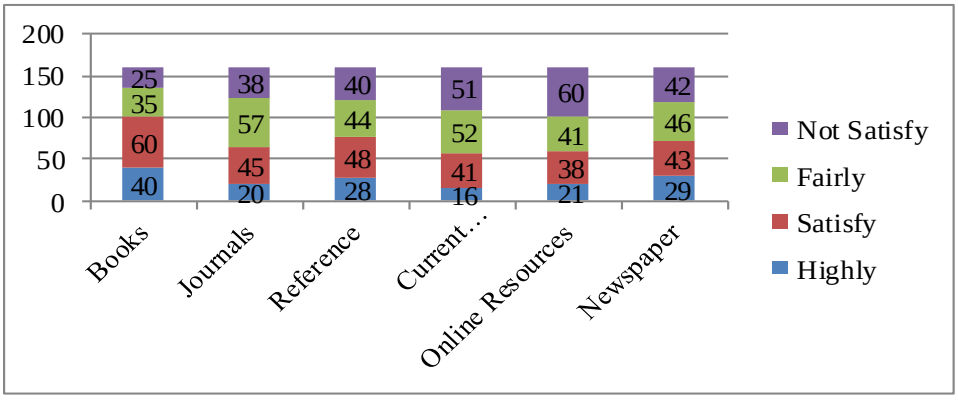

Figure-4.2-P: Analysis on view of library collection

Table-4.2.17 and Figure-4.2-P shows that 60(37%) respondents are satisfied to the collection of books by the library. 40(25%) respondents are highly satisfied to the collection of

books by the library. 35(22%) respondents are fairly satisfied to the collection of books by the library. 25(16%) respondents are not satisfied to the collection of books by the library. 57(36%) respondents are fairly satisfied to the collection of journals/magazine by the library. 45(28%) respondents are satisfied to the collection of journals/magazine by the library. 38(24%) respondents are not satisfied to the collection of journals/magazine by the library. 20(12%) respondents are highly satisfied to the collection of journals/magazine by the library. 48(30%) respondents are satisfied to the collection of reference resource by the library. 44(27%) respondents are fairly satisfied to the collection of reference resource by the library. 40(25%) respondents are not satisfied to the collection of reference resource by the library. 28(18%) respondents are highly satisfied to the collection of reference resource by the library. 52(32%) respondents are fairly satisfied to current awareness service provided by the library. 51(32%) respondents are not satisfied to current awareness service by the library. 41(26%) respondents are satisfied to current awareness service provided by the library. 16(10%) respondents are highly satisfied to current awareness service provided by the library. 60(37%) majority respondents are not satisfied to online resource provided by the library. 41(26%) respondents are fairly satisfied to online resource provided by the library. 38(24%) respondents are satisfied to online resource provided by the library. 21(13%) respondents are highly satisfied to online resource provided by the library. 46(29%) respondents are fairly satisfied to the collection of newspaper by the library. 43(27%) %) respondents are satisfied to the collection of newspaper by the library. 42(26%) %) respondents are not satisfied to the collection of newspaper by the library. 29(18%) %) respondents are highly satisfied to the collection of newspaper by the library.

4.2.18. Rate of services offered by the library

Table-4.2.18: Respondents rate of services offered by the library

Source	Excellent	Good	Fair	Needs improvement	Total
Circulation	27(16.87%)	60(37.5%)	38(23.75%)	35(21.87%)	**160(100%)**
Reference	28(17.5%)	42(26.25%)	38(23.75%)	52(32.5%)	**160(100%)**
Current awareness service	23(14.37%)	44(27.5%)	43(26.87%)	50(31.25%)	**160(100%)**
Photocopying	16(10%)	24(15%)	40(25%)	80(50%)	**160(100%)**

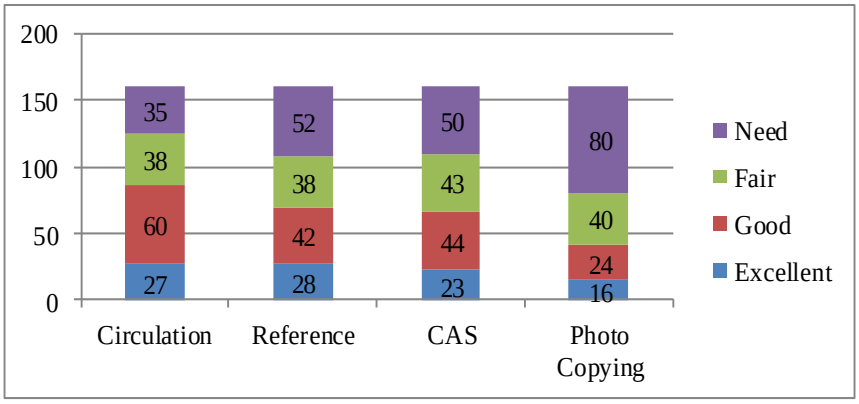

Figure-4.2-Q: Analysis of rate of services offered by the library

Table-4.2.18 and Figure-4.2-Q shows 60(37%) respondents rate circulation (issue/return) services is good. 38(24%) respondents rate circulation (issue/return) services is fair. 35(22%) respondents rate circulation (issue/return) services needs improvement. 27(17%) respondents rate circulation (issue/return) services is excellent. 52(33%) respondents rate reference services needs improvement. 42(26%) respondents rate reference services is good. 38(24%) respondents rate reference services is fair. 28(17%) respondents rate reference services is excellent. 50(31%) respondents rate current awareness services needs improvement. 44(28%) respondents rate current awareness services is good. 43(27%) respondents rate current awareness services is fair. 23(14%) respondents rate current awareness services is excellent. Majority 80(50%) respondents rate photocopying services needs improvement. 40(25%) %) respondents rate photo copying services is fair. 24(15%) %) respondents rate photo copying services is good. 16(10%) %) respondents rate photo copying services is excellent.

4.2.19. Online resource whether available

Table-4.2.19: Response whether online resource available

Availability	No. of respondents	Percentage
Yes	83	52%
No	77	48%
Total	**160**	**100%**

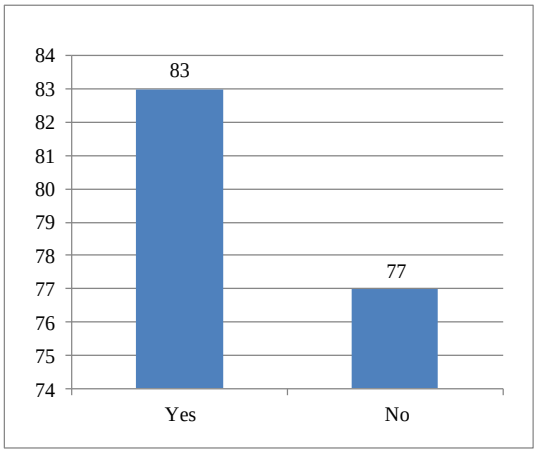

Figure-4.2-R: Analysis of whether online resource is available

Table-4.2.19 and Figure-4.2-R shows that online resources are available in NIT Mizoram library. 83(52%) respondents tick yes option, 77(48%) respondents tick no option.

4.2.20. Current information technology environment affect information seeking behavior

Table-4.2.20: Response of information technology environment affects information seeking behavior

Environmental factors	Yes	No	Total
Information overload	61(38.12%)	99(61.87%)	**160(100%)**
Changing of syllabus	66(41.25%)	94(58.75%)	**160(100%)**
Changing information and communication technology environment	79(49.37%)	81(50.62%)	**160(100%)**

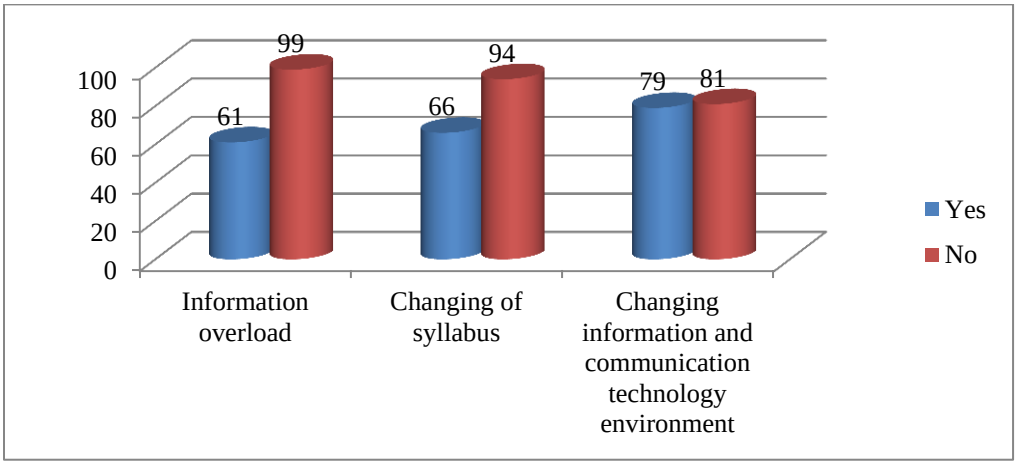

Figure-4.2-S: Analysis of information overload

Table-4.2.20 and Figure-4.2-S shows how current information technology environment affect information seeking behavior. 94(59%) respondents did not affect information seeking behavior by information overload. 61(38%) respondents affect information seeking behavior by information overload. 94(59%) respondents did not affect information seeking behavior by changing of syllabus. 66(41%) respondents affect information seeking behavior by changing of syllabus.81(51%) respondents did not affect information seeking behavior by changing of information and communication technology environment. 79(49%) %) respondents affect information seeking behavior by changing of information and communication technology environment.

4.2.21. Level of convenience in using Information and Communication Technology based facilities

Table-4.2.21: Level of convenience of ICT by respondents

Facilities	Highly convenient	Convenient	Slightly convenient	Inconvenient	Total
Computer	27(16.87%)	58(36.25%)	27(16.87%)	48(30%)	**160(100%)**
E-Journals	28(17.5%)	44(27.5%)	31(19.37%)	57(35.62%)	**160(100%)**
Internet	35(21.87%)	57(35.62%)	29(18.12%)	39(24.37%)	**160(100%)**
Intranet	22(13.75%)	42(26.25%)	38(23.75%)	58(36.25%)	**160(100%)**

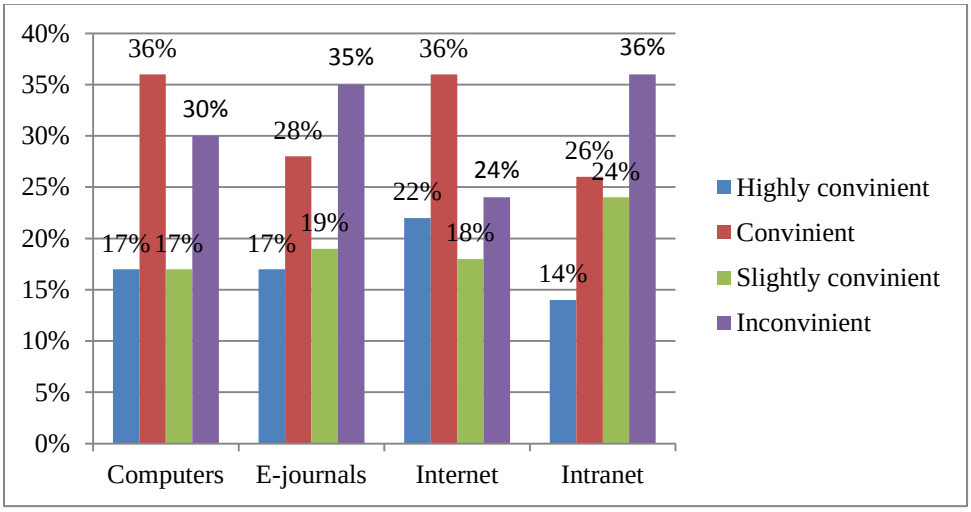

Figure-4.2-T: Analysis of level of convenience of ICT

Table-4.2.21 and Figure-4.2-T shows 58(36%) respondents are convenient in using computer. 48(30%) respondents are inconvenient in using computer. 27(17%) respondents are highly convenient in using computer. 27(17%) respondents are slightly in convenient using computer. 57(35%) respondents are inconvenient in accessing electronic journals. 44(28%) respondents are convenient in accessing electronic journals. 31(19%) respondents are slightly convenient in accessing electronic journals. 28(17%) respondents are highly convenient in accessing electronic journals. 57(36%) respondents are convenient in browsing Internet facility. 39(24%) respondents are inconvenient in browsing Internet facility. 35(22%) respondents are highly convenient in browsing Internet facility. 29(18%) respondents are slightly convenient in browsing Internet facility. 58(36%) respondents are inconvenient in using intranet. 42(26%) respondents are convenient in using intranet. 38(24%) respondents are slightly convenient in using intranet. 22(14%) respondents are highly convenient in using intranet.

4.2.22. Internet services most used to get information

Table-4.2.22: Internet services most used to get information by respondents

Service	Continuously	Frequently	Occasionally	Rarely	Total
Search engines	84(52.5%)	31(19.37%)	12(7.5%)	33(20.62%)	**160(100%)**
E-mail	34(21.25%)	48(30%)	30(18.75%)	48(30%)	**160(100%)**
Blogs	27(16.87%)	40(25%)	32(20%)	61(38.12%)	**160(100%)**
Messenger	37(23.12%)	39(24.37%)	27(16.87%)	57(35.62%)	**160(100%)**

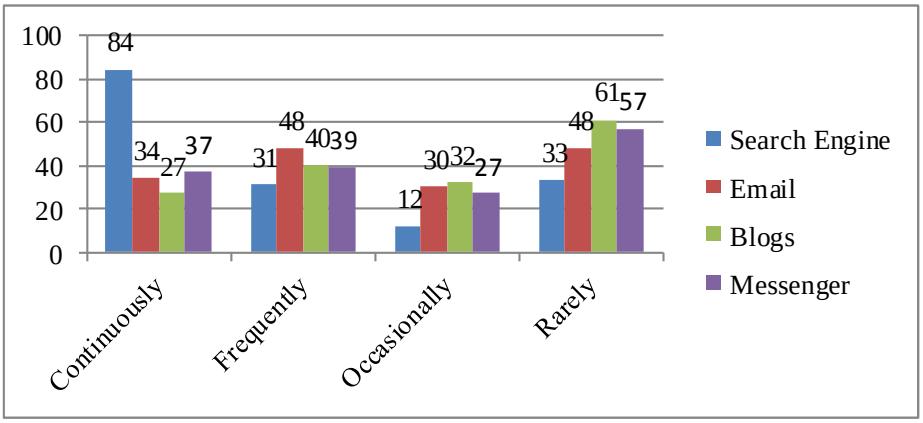

Figure-4.2-U: Analysis of Internet services most used to get information

Table-4.2.22 and Figure-4.2-U shows most Internet services used by the respondents. 84(53%) respondents continuously used search engine to get information. 33(20%) respondents rarely used search engine to get information. 31(19%) respondents frequently used search engine to get information. 12(8%) respondents occasionally used search engine to get information.

48(30%) respondents frequently used email to get information. 48(30%) respondents rarely used email to get information. 34(21%) respondents continuously used email to get information. 30(19%) occasionally used email to get information. 61(38%) respondents rarely used blogs to get information. 40(25%) respondents frequently used blogs to get information. 32(20%) respondents occasionally used blogs to get information. 27(17%) respondents continuously used blogs to get information. 57(36%) respondents rarely used messenger to get information. 39(24%) respondents frequently used messenger to get information. 37(23%) respondents continuously used messenger to get information. 27(17%) respondents occasionally used messenger to get information.

4.2.23. Relevant views affecting information seeking behavior

Table-4.2.23: Relevant views affecting information seeking behavior by respondents

Note: Respondents have been allowed to choose more than one option. Only 126 respondents have ticked only one view, rest 34 of them has marked more than one.

Views	No of Respondents (N=160)
Language is a barrier for information seeking behavior	54(33.75%)
Library staff do not show interest in helping the students	25(15.62%)
Lack of training to make use of library technology affects getting prompt information	46(28.75%)
Reprographic service needs to be improved	37(23.12%)
Collection of non-book materials(Journals/Online Resources) have to be increased	43(26.87%)
Availability of Back Volumes have to be familiarize among students	36(22.5%)
Non book material are infamous and need to be popularized among students	38(23.75%)

Table-4.2.23 depicts relevant views affecting information seeking behavior in the study. 54(34%) respondents says that language is a barrier for seeking information, followed by 46(29%) respondents states that lack of training to make use of library technology affects getting prompt information, 43(27%) respondents states that collection of non-book materials(Journals/Online Resources) have to be increased, 38(24%) respondents states that non book material are infamous and need to be popularized among students, 37(23%) respondents states that reprographic service needs to be improved, 36(23%) respondents states that

availability of Back Volumes have to be familiarize among students and 25(16%) respondents states that library staff do not show interest in helping the students.

4.2.24. Journals used on regular basis

Table-4.2.24: Journals used on regular basis by respondents

Journals	No. of respondents	Percentage
1-3	69	43%
4-6	32	20%
7-9	2	1%
None	57	36%
Total	**160**	**100%**

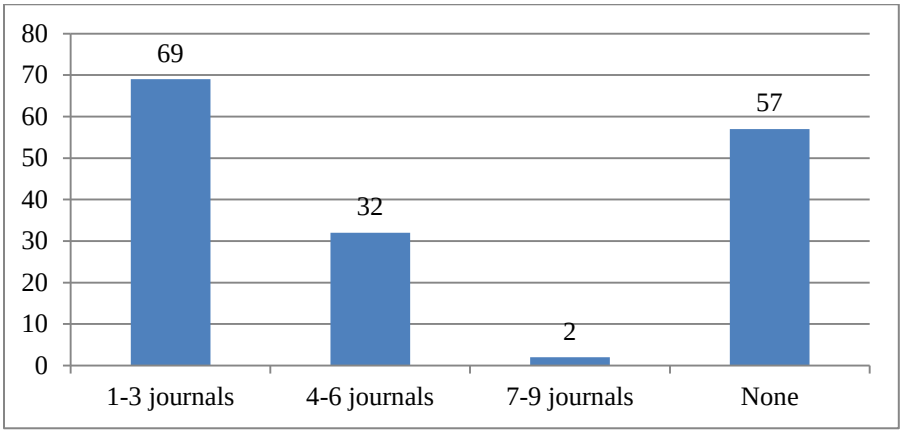

Figure-4.2-V: Analysis of journals used on regular basis

Table-4.2.24 and Figure-4.2-W shows how many journals are used by the respondents on regular basis. 69(43%) respondents used 1-3 journals both print and electronic version on regular basis. 57(36%) respondents does not used any journals both print and electronic version on regular basis. 32(20%) respondents used 4-6 journals both print and electronic version on regular basis. 2(1%) respondents used 7-9 journals both print and electronic version on regular basis.

4.3. FINDINGS

Information seeking behavior whether print or electronic version is important in every aspect of life, especially in the field of education. The students of National Institute of Technology (NIT) Mizoram are one of the best Engineering colleges in Mizoram. The students seek information in such a way, which outfits those best for modernizing their knowledge and form new ideas and methods. This study was held to find out what methods the students apply

during their information seeking process and their level of habit to the libraries and the consummation level of information requirements. To accomplish the objectives of the study, data was collected through questionnaire as a tool and after analysis the scholar inferred the following main findings:

- Among the respondents 16% are of age 17, 20% are of age 18, 17% are of age 19, 15% are of age 20, 11% are of age 21 and 21% are of age 22 and above. Majority respondents are more than 22 years.
- Total 200 questionnaires were distributed to the students of NIT Mizoram. 160(80%) response was received. Majority of the respondents (70%) are male and (30%) are female.
- Majority (59%) respondents regularly visit the library. While (41%) respondents are irregular visitor to the library for seeking general information.
- Most of the respondents (48%) visit the library weekly. 26% respondents visit the library daily. 14% respondents visit the library monthly, and 12% respondents rarely visit the library.
- Majority respondents prefer digital/online mode of access rather than print mode for seeking information. 53% respondents prefer digital/online mode of access, while 47% respondents prefer print mode of access.
- Mostly 38% respondents frequently depend on library, 28% respondents occasionally depend on library, 21% respondents continuously depend on library, and 13% respondents does not depend on library at all. 32% respondents continuously depend on their faculty, 30% respondents frequently depend on their faculty 24% respondents occasionally depends on their faculty, and 14% respondents does not depend on their faculty. 44% respondents continuously depend on themself and friends, 23% respondents occasionally depend on themself and friends, 17% respondents frequently depend on themself and friends, and 16% respondents does not depend on themself and friends. 51% respondents continuously depend on the internet, 21% respondents frequently depend on the internet, 14% respondents occasionally depend on the internet, and 14% respondents does not depend on the internet. And there are 3% respondents who depend on their seniors and friends.

- Majority respondents does not have language barrier for seeking information. 71% respondents say they do not have language barrier while seeking information, but 29% respondents say they have a language barrier while seeking information. Among them, 3% respondents mention how it affects their information seeking behavior. Reading in their own mother tongue is more effective rather than other language to gain knowledge. They are comfortable with Hindi language. Sometimes, find difficulties in getting pronunciation, since accent is different.
- Most of the respondents visiting behavior of library are driven by habit. 41% respondents visit the library as habit. 33% respondents visit the library because of library atmosphere. 23% respondents visit the library because they are motivated by faculties, and 23% respondents visit the library because awareness was created by the library.
- The main purpose of visiting library by the respondents is borrowing books. Majority respondents 59% visit library to borrow books. 52% respondents visit library to read books. 18% respondents visit library to read journals subscribed by the library, and 17% respondents visit library to access e-resources.
- Male 36% respondent says they visit the library weekly, while 14% female respondent says they visit the library weekly.
- The analysis shows male are more interested in learning Engineering courses rather female.

5.1. CONCLUSION

In today's advanced domain, information seeking behavior has become an important element for every individual in our everyday life; it is an essential part of our life. As we know those who are rich information are rich every aspect and those information poor are poor in every aspect. As we see in the previous chapters that information rich countries are ruling the world. So, for every individual, information is essential. The purpose of information seeking may be different, as ones interest varies from person to person. From chapter-4, we can clearly see that students of National Institute of Technology (NIT) Mizoram, their interest and information seeking behavior vary from one person to another.

The Scholar distributed questionnaire to the following five departments; Civil Engineering, Computer Science and Engineering, Electrical and Electronic Engineering, Electronics and Communication Engineering and Mechanical Engineering. As an Engineering student, there are some who know and prefer to browse online resources. In general they mostly browse to electronic journals like Springer, Scopus, Nature, British Medical Journal (BMJ) one of the world oldest weekly peer-reviewed journal, Journal of communication and Journal of Fluid Machines. Some of them are subscribed by the library and some are not subscribed by the library. There are serial publications which are generally browsed by the students; India Today, The Hindu, Times of India, Hindustan which are a national newspaper.

This study can be concluded that, the students of the National Institute of Technology (NIT) Mizoram prefer digital/online mode of access rather than print mode for seeking information. This shows that, as engineering students they make a good use of ICT for seeking information. Male respondent rate of frequency of library visit is higher than female.

5.2. SUGGESTIONS

During the study, the scholar obtained some suggestions from the students to develop upon the information seeking behavior among the students of NIT, Mizoram. Moreover, the scholar also placed below some of the valuable suggestions and remedial measures for the development of information seeking behavior.

- Book and journal collections must be improved to accomplish the students' needs.
- Room space provided in the library is small, so the students do not get enough space to read/consult library collections inside the library.

- Language is another main problem for some students, so staff needs to improve their communication skills.
- Provision of self-issue/return is required, since there are huge number of students in the Institute.
- Books issued once must be for a longer period, since six days is a short period of time for the user.
- Number of books allowed to borrow should be increased as per student.
- Online access provision is still not well-known among students; library should make more efforts to popularize it among users.
- Mathematic book collections are insufficient, so library must increase the collection.

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APPENDIX

QUESTIONNAIRE

SECTION A: General Information about the Respondent

Please tick the most appropriate box provided for the purpose.

A.1. Name *(Optional)* : _____

A.2. Age : _____ (Year)

A.3. Gender : ☐ Male ☐ Female

A.4. Department : _____

SECTION B: Information seeking behavior – General

B.1. Are you a regular visitor to the library

☐ Yes ☐ No

B.2. Mention your purpose of information seeking. (*Tick only one*)

For preparing notes	
For writing assignments	
For presentations	
Keep up with latest development in the field	
Evolving innovative ideas and techniques	

B.3. Mention your levels of Dependency

Source	Continuously Dependent	Frequently Dependent	Occasionally Dependent	Not Dependent
Library				
Faculty				
Personal				
Internet				
Others, please specify				

B.4. Frequency of your visit to the library

☐ Daily ☐ Weekly ☐ Monthly ☐ Rarely

B.5.Which of the following mode of access you prefer over others in seeking information?

☐ Print Mode ☐ Digital/Online

B.6. Do you feel language as a barrier in seeking your information?

☐ Yes ☐ No

If yes, Please mention how it affects your Information seeking?

SECTION C: <u>Information seeking behavior – Libraries</u>

C.1.Your visiting behavior to Library is driven by (*Tick only one*)

Habit	
Motivation from faculty	
Awareness created by library	
Library Atmosphere	

C.2. Purpose of your library visit

☐ To read books ☐ To read journals/periodicals

☐ To borrow books ☐ To access e-resources

C.3. How often you visit library for various purposes given below?

Purpose	Daily	Weekly	Monthly	Rarely	
For preparing notes					
For writing assignments					
For presentations					
Question Bank					
General knowledge					
Keep up with latest development in the field					
Evolving innovative ideas and techniques					
Others, please specify					

C.4. Mention the amount of time you spend in the library?

Sources of Information	**Up to 1hour**	**2 hours**	**3 hours**	**More than 3 hours**
Reading Text Books				
Reading Reference Resources				
Reading News Papers				
Collecting information from Back Volumes				
Online Resources				

C.5. Indicate your satisfaction level on the arrangements and retrieval of information from the following resource?

Resource	Highly Satisfied	Satisfied	Fairly Satisfied	Not Satisfied
Books				
Periodicals				
Reference Resource				
Question Bank				
Back Volumes				
Online Resource				

C.6. Which sources of information you prefer to keep update with current developments in your field of study?

Source	Highly Preferred	Preferred	Fairly Preferred	Not Preferred
Books				
Journals/Magazine				
Reference Resource				
Current Awareness Service				
Online Resource				
Newspapers				

C.7. Kindly give your view on your library Collection

Source	Highly Satisfied	Satisfied	Fairly Satisfied	Not Satisfied
Books				
Journals/Magazine				
Reference Resource				
Current Awareness Service				
Online Resource				
Newspapers				

C.8. Please rate the services offered by the library

Source	Excellent	Good	Fair	Needs Improvement
Circulation				
Reference Service				
Current Awareness Service				
Photo Copying Service				

SECTION D: <u>Information Seeking Behavior – ICT</u>

D.1. Mention whether online resource is available in your library

☐ Yes ☐ No

D.2. Do you think that current information technology environment affect your information seeking behavior?

Environmental Factors	Yes	No
Information Overload		
Changing of Syllabus		
Changing information & communication technology environment		

D.3. Mention your level of convenience in using following Information and Communication Technology (ICT) facilities of your Library?

Facilities	Highly Convenient	Convenient	Slightly Convenient	Inconvenient
Computers				
E-Journals				
Internet				
Intranet				

D.4.Which of the following internet services, you use most to get information?

Service	Continuously	Frequently	Occasionally	Rarely
Search engine				
E-mail				
Blogs				
Messenger				

D.5. Please tick any one of the following views you feel relevant, which affect Information Seeking Behavior

Views	Tick
Language is a barrier for seeking information	
Library staff do not show interest in helping the students	
Lack of training to make use of library technology affects getting prompt information	
Reprographic service needs to be improved	
Collection of non- book materials have to be increased	
Availability of Back Volumes have to be familiarize among Students	

D.6. How many journals do you use on a regular basis (Print and electronic version)

☐ 1-3 ☐ 4-6 ☐ 7-9 ☐ None

D.7. Give the name of three popular serials/journals which are generally browsed by you.

D.8. Please, feel free to comment anything regarding Information Seeking Behavior of library system etc.

Signature: _____

1. INTRODUCTION

Information is a valuable resource of today's information society; searching and using information are essential human activity. This process is known as information seeking and therefore it is becoming more fundamental and strategic for intelligent citizenship. Information is the backbone for any dynamic and efficient research activity and acts as oxygen for a nation's development. It is the fact that a country which is rich in information is rich in economic spheres. The countries which are information rich seem to be rich in all spheres and the countries that are information poor are found to be poor in every field. Now-a-days, the world is divided into two namely; information rich and information poor. Hence, information is being considered as a crucial economic factor. Information is the core of all decision makings, all development and growth. Information is a great phenomenon which has led to man's progress. It is a basic resource for any kind of activity.

Information can be described as an individual's way and manner of gathering and sourcing for information for personal use, personal updating and development. The term information is defined, understood and interpreted differently across a vast array of disciplines (Losee, 1997). It is stated that the term as concept originated from the Greek words typos, idea and morphé, evolving into the Latin word information. In its modern context the word 'information' generally means to instruct, to furnish with knowledge (Capurro, 1992). The Oxford English Dictionary describes it as knowledge communicated concerning some particular fact, subject or event (1989). Other definitions view information as a property of matter, any message, document, or information resource; any publicly available symbolic material; or any data (Smith, 1991), or as ideas, facts, imaginative works of the mind and data of value, potentially useful for decision making, question answering, etc.(Kaniki, 2001). Wilson in Case (2002) sees it as the purposive search for information in order to satisfy certain goals, while Johnson (1997) defines it as the purposive acquisition of information from selected information carriers. Case (2002) describes it as a conscious effort to acquire information in response to a need or gap in one's knowledge.

According to Moly (2014) the teaching and learning environment in higher education require information that support for knowledge development. Without information teaching and learning cannot flourish or survive. Teachers and students seek information for various

purposes. They make use of printed documents or e-documents to gather information. Researches reveal that with the emergence of web resources the information seeking behavior of students are changing rapidly all over the world. Information seeking behavior refers to those activities a person engages in when identifying his or her own need for information, searching for such information in any way and using or transferring of information. Information behavior is the totality of human behavior in relation to the sources and channels of information, including both active and passive information seeking and information use. Thus it includes face to face and online communication with others as well as the passive reception of information (Wilson, 2000). Information seeking is an integral component of life, which aim is to eliminate a continual dissonance between perceptions of how things are at this moment and how they should be. Information has been described as the fifth need of man ranking after air, water, food and shelter (Kemp, 1976).

Kuhlthau (1991) conceives information seeking as users' constructive effort to derive meaning from information in order to extend their state of knowledge on a particular issue or topic. This activity incorporates a series of encounters with information within a space of time, rather than a single reference incident. Fairer and Wessels (1990) refer to information seeking behavior as the way people search for and utilize information. Information seeking behavior is how people use information in their work environment. The need of information seeking behavior arises due to information need of the information seeker, who in order to satisfy it, makes demands upon formal or informal information sources or services, resulting in either success or failure.

2. SIGNIFICANCE AND SCOPE OF THE STUDY

Advances in Information and Communication Technology (ICT) have opened a wide range of availability for all those who are in need of information. Today in the age of information; the traditional libraries have been converted to digital ones, to reach wider geographical area. The appropriate application of attitude will enable the seeker not to be caught among the overflow of information, especially with irrelevant information. Information seeking behavior gains significance since it is a driving force to achieve excellence empirically and cognitively in academic, research and social needs. In academic environment, the majority of information is provided through libraries, classroom lecture notes, internet, media and friends. The libraries especially in engineering institutions play a

vital role in providing information related to academic, research and general aspects. For a library it is always necessary to learn about the information required by the users. Significance of the present study lies with the fact that, information quest among the academic community is crucial for teaching, learning and research and this is significant to students of NIT Mizoram. The study identifies the information need and information seeking process of the students.

The scope of the study is limited to the students of National Institute of Technology (NIT) Mizoram.

3. RESEARCH DESIGN

3.1. Statement of the Problem

The present study aims to analyze the information seeking behavior of the students of National Institute of Technology (NIT) Mizoram. The study traces out the information needs of the students, the strategies that the students apply during their information seeking process and their level of dependency at the libraries. The information seeking behaviors of the students determine the level of satisfaction of information needs that they perceived. The study is carried out in order to establish a good library system to serve students effectively and to make them eligible to make use of the library resources and qualified to face academic and societal challenges successfully.

4. OBJECTIVES OF THE STUDY

The objectives of the study are:

1. To evaluate the information seeking behavior by the students of NIT Mizoram
2. To identify the difficulties faced by the students while seeking information.
3. To recognize the purpose of information seeking and satisfaction level of the students.
4. To explore the use of information technology for seeking information.

5. RESEARCH METHODOLOGY

This study is carried out using a survey method. The research instrument adopted for the study is questionnaire. From the institution 200 students have been taken as the sample covered under the study. Random sampling technique is utilized for data collection of the study. For collection of primary data from the respondents a structured questionnaire is

framed with adequate questions. Total sample size is 200, selecting 40 students from each department; questionnaire is circulated containing 26 questions relating to the study.

Under the study, the primary data collected from the users is scrutinized, tabulated and analyzed for inference.

6. TENTATIVE CHAPTERIZATION

The present study comprises the following tentative chapters:

Chapter-1 of the study constitutes; introduction including significance and scope of the study, review of literature, research gap, research design comprising of statement of the problem, objectives of the study, research methodology and references.

Chapter-2 of the study constitute the growth and development of National Institute of Technology Mizoram, overview of NIT, a brief profile of the library comprising aims and objectives, course structure and grading system.

Chapter-3 of the study constitute attributes of information, description of information seeking behavior, a brief history of information seeking behavior, approaches, models, factors affecting information seeking behavior, information use and user needs, user study and references.

Chapter-4 of the study constitutes data analysis and findings with tables and figures. The data analysis includes the analysis by age wise analysis, gender wise analysis, and department wise analysis. Analysis of regularity in visiting the library, analysis of purpose of seeking information, analysis of levels of dependency, analysis of frequency of library visit, analysis of frequency of library visit by Male & Female respondents, analysis of preferred mode of access, analysis of visiting behavior of library, analysis of purpose of library visit, analysis of satisfaction level on the arrangement and retrieval of information, analysis of rate of services offered by the library, analysis of relevant views affecting information seeking behavior by respondents, analysis of journals used on regular basis and findings.

Chapter-5 of the study contains conclusion and suggestions.

7. FINDINGS

Information seeking behavior whether print or electronic version is important in every aspect of life, especially in the field of education. The students of National Institute of Technology (NIT) Mizoram are one of the best Engineering colleges in Mizoram. The students seek information in such a way, which outfits those best for modernizing their knowledge and form new ideas and methods. This study was held to find out what methods the students apply during their information seeking process and their level of habit to the libraries and the consummation level of information requirements. To accomplish the objectives of the study, data was collected through questionnaire as a tool and after analysis the scholar inferred the following main findings:

- Among the respondents 16% are of age 17, 20% are of age 18, 17% are of age 19, 15% are of age 20, 11% are of age 21 and 21% are of age 22 and above. Majority respondents are more than 22 years.
- Total 200 questionnaires were distributed to the students of NIT Mizoram. 160(80%) response was received. Majority of the respondents (70%) are male and (30%) are female.
- Majority (59%) respondents regularly visit the library. While (41%) respondents are irregular visitor to the library for seeking general information.
- Most of the respondents (48%) visit the library weekly. 26% respondents visit the library daily. 14% respondents visit the library monthly, and 12% respondents rarely visit the library.
- Majority respondents prefer digital/online mode of access rather than print mode for seeking information. 53% respondents prefer digital/online mode of access, while 47% respondents prefer print mode of access.
- Mostly 38% respondents frequently depend on library, 28% respondents occasionally depend on library, 21% respondents continuously depend on library, and 13% respondents does not depend on library at all. 32% respondents continuously depend on their faculty, 30% respondents frequently depend on their faculty 24% respondents occasionally depends on their faculty, and 14% respondents does not depend on their faculty. 44% respondents continuously depend on themself and friends, 23% respondents occasionally depend on themself and friends, 17% respondents frequently depend on themself and friends, and 16% respondents does not depend on themself

and friends. 51% respondents continuously depend on the internet, 21% respondents frequently depend on the internet, 14% respondents occasionally depend on the internet, and 14% respondents does not depend on the internet. And there are 3% respondents who depend on their seniors and friends.

- Majority respondents does not have language barrier for seeking information. 71% respondents say they do not have language barrier while seeking information, but 29% respondents say they have a language barrier while seeking information. Among them, 3% respondents mention how it affects their information seeking behavior. Reading in their own mother tongue is more effective rather than other language to gain knowledge. They are comfortable with Hindi language. Sometimes, find difficulties in getting pronunciation, since accent is different.
- Most of the respondents visiting behavior of library are driven by habit. 41% respondents visit the library as habit. 33% respondents visit the library because of library atmosphere. 23% respondents visit the library because they are motivated by faculties, and 23% respondents visit the library because awareness was created by the library.
- The main purpose of visiting library by the respondents is borrowing books. Majority respondents 59% visit library to borrow books. 52% respondents visit library to read books. 18% respondents visit library to read journals subscribed by the library, and 17% respondents visit library to access e-resources.
- Male 36% respondent says they visit the library weekly, while 14% female respondent says they visit the library weekly.
- The analysis shows male are more interested in learning Engineering courses rather female.

8. CONCLUSION

In today's advanced domain, information seeking behavior has become an important element for every individual in our everyday life; it is an essential part of our life. The current study highlights the information seeking behavior of the students of the National Institute of Technology Mizoram.

Objective: To evaluate the information seeking behavior by the students of NIT Mizoram

On the basis of findings it is observed that majority of the students visit the library regularly for seeking information, and prefer digital/online mode of access for seeking information.

Objective: To identify the difficulties faced by the students while seeking information

Most of the students does not have problem in language, but, some faced difficulties in communication while seeking information. Since the library does not have self-issue/return service some students do not have time to stand in queue, so, they left without issuing books and returning books at re right time.

Objective: To recognize the purpose of information seeking and satisfaction level of the students

The students mostly visit the library to borrow books, and there are few students who visit the library to access electronic resources. Some students visit the library for preparing notes, for writing assignments for making presentations, for updating their knowledge, and for evolving innovative ideas and techniques. Mostly, the students are satisfied with the arrangement and retrieval of information, while some students are not satisfied. They find mathematic book collections are insufficient, since this book is used by various departments in the institution.

Objective: To explore the use of ICT for seeking information

From the analysis we can see that online service is available in the institution but, it is not popular among all students to make use of it. Most of the students are convenient in using computer, while some are inconvenient. The most Internets used to get information by the students are search engines, E-mail, Blogs and Messenger.