Chapter -7

DATA ANALYSIS AND INTERPRETATION

7.0 INTRODUCTION

In the field of library and information science, there are various methods which make simpler the procedures or techniques like rearrangement, tabulation, graphs, and summarizations which are commonly used to make the data clear and easily understandable. Any study designed or intended to provide an empirical method needs the analytical part in order to explore the results in a more intricate manner. Therefore, the following discussion offers an analytical approach to the data collected and results found out from the survey. This chapter is dedicated to data analysis which deals with classification, tabulation, interpretation and generalization of the data collected systematically through the questionnaire prepared by the researcher. The term analysis refers to the computation of certain procedures along with searching for patterns of relationship or connection that exist amongst the data groups. In the process of analysis, relationship or differences supporting or conflicting with original or new hypothesis should be subjected to statistical test of significance to determine with what validity data can be said to indicate any conclusion." (Giles, 1994).The data for analysis were collected and analyzed as per the procedure described in the previous chapter.

In the present study, the data collected through two types of questionnaires and the results are analyzed and interpreted based on the data collection from the users and the librarians of institutes and centres on the following facets in two parts-

- **Part I**- Analysis of Responses Received from the Librarian/Library In -Charge
- **Part II**- Analysis of Responses Received from the Scientists

7.1 DATA ANALYSIS AND INTERPRETATION

7.1.1 Part I- Analysis of Responses Received from the Librarian/Library In- Charge

This part includes the data analysis and interpretation of data collected from the Librarians/Library In-charges of 12 ICAR institutes and regional centres of Northeast which were chosen to be the primary informants for this study.

7.1.1.1 Responses Received from the Libraries

Total 12 questionnaires were distributed to 6 regional centres and 6 institutes of ICAR and the researcher received back all total 12 numbers of questionnaires from the Librarian/Library In-charge of the respective institutes and centres. Therefore, the response rate is 100%.

7.1.1.2 Institution and Centre Wise Name and Establishment of the Libraries

Table 7.1 below shows the clear representation of institute and centre wise name of the libraries and their year of establishment.

Table 7.1 Institution and Centre Wise Name and Establishment of the Libraries

Sl. No.	Institutes/ Centres	Name of the Library	Year of Est.
1.	ICAR Research Complex for NEH Region, Umiam, Meghalaya	ICAR Library	1975
2.	ICAR, Agriculture Technology Application Research Institute, Umiam, Meghalaya	ATARI Library	1979
3.	National Research Centre on Pig, Guwahati, Assam	NRC Pig Library	2004
4.	National Research Centre on Mithun, Medziphema, Nagaland	NRC Mithun Library	1999
5.	National Research Centre on Yak, West Kemang, Arunachal Pradesh	NRC Yak Library	1989
6.	National Research Centre on Orchids, Pakyong, Sikkim Centre, Sikkim	NRC Orchid Library	1998
7.	ICAR Research Complex for NEH Region, Nagaland Centre, Jharnapani, Nagaland	ICAR Nagaland Centre Library	1979
8.	ICAR Research Complex for NEH Region, Arunachal Pradesh Centre, Basar, Arunachal Pradesh	ICAR A.P. Centre Library	1975
9.	ICAR Research Complex for NEH Region, *Manipur Centre, Lamphelpat, Imphal*	ICAR Manipur Centre Library	1978
10.	ICAR Research Complex for NEH Region, Sikkim Centre, Tadong, Gangtok	ICAR Sikkim Centre Library	1978
11.	ICAR Research Complex for NEH Region, Lembucherra, Tripura Centre, Tripura	ICAR Tripura Centre Library	1978
12.	ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram	ICAR Mizoram Centre Library	1978

Source: Computed from the survey Data

The table above shows that the 6 Institutes includes the library of ICAR Research Complex for NEH Region, Umiam, Meghalaya was started in the year **1975** by the name of **ICAR Library**,ICAR, Agriculture Technology Application Research Institute, Umiam, Meghalaya having its library as **ATARI Library** which was established in the year **1979**,National Research Centre on Pig, Guwahati, Assam have their library within their building with the name of **NRC Pig Library** which established in **2004**, National Research Centre on Mithun, Medziphema, Nagaland having library as the **NRC Mithun Library** which established in **1999**,National Research Centre on Yak, West Kemang, Arunachal Pradesh started their library as **NRC Yak Library** in the year **1989** and National Research Centre on Orchids, Pakyong, Sikkim Centre, Sikkim having library as a name of **NRC Orchid Library** which was recognized in **1998**. Whereas 6 Regional Centres includingICAR Research Complex for NEH Region, Nagaland Centre, Jharnapani, Nagaland started their library in **1979** as the name of **ICAR Nagaland centre Library,**ICAR Research Complex for NEH Region, Arunachal Pradesh Centre, Basar, Arunachal Pradesh started their library with full swing **1975** as **ICAR A.P. Centre Library,**ICAR Research Complex for NEH Region, *Manipur Centre, Lamphelpat, Imphal recognised their library in the year **1978** as the name of**ICAR Manipur Centre Library*, ICAR Research Complex for NEH Region, Sikkim Centre, Tadong, Gangtok started as ICAR Sikkim Centre Library in 1978, ICAR Research Complex for NEH Region, Lembucherra, Tripura Centre, Tripura established its library in the year **1978** with the name of **ICAR Tripura Centre Library** and ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram started its library as ICAR Mizoram Centre Library in the year **1978**.

7.1.1.3 Institution and Centre Wise Name and Qualification of the Librarian /Library In-Charge

Table 7.2 depicts the Institute and centre wise name of the library, Librarian/Library In-Charge and their qualifications.

Table 7.2 Institution and Centre Wise Name and Qualification of the Librarian /Library In-Charge

Sl. No.	Institutes/ Centres	Library	Name of the Librarian/Library In- Charge	Qualification
1.	ICAR Research Complex for NEH Region, Umiam, Meghalaya	ICAR Library	Gulab Prasad (Library in-charge)	B.Sc., B.Lib.Sc.
2.	ICAR, Agriculture Technology Application Research Institute, Umiam, Meghalaya	ATARI Library	Dr. A.K. Singha (Library in-charge)	Ph.D.
3.	National Research Centre on Pig, Guwahati, Assam	NRC Pig Library	Dr. S. Rajkhowa (Library in-charge)	Ph.D.
4.	National Research Centre on Mithun, Medziphema, Nagaland	NRC Mithun Library	Dr. Sabhyasachi Mukherjee (Library in-charge)	Ph.D.
5.	National Research Centre on Yak, West Kemang, Arunachal Pradesh	NRC Yak Library	Dr. D. Bhattacharjee (Library in-charge)	Ph.D.
6.	National Research Centre on Orchids, Pakyong, Sikkim Centre, Sikkim	NRC Orchid Library	Dr. Syamali Chakrabarti (Library in-charge)	Ph.D.

Table 7.2 (Continued)

Sl. No.	Institutes/ Centres	Library	Name of the Librarian/Library In- Charge	Qualification
7.	ICAR Research Complex for NEH Region, Nagaland Centre, Jharnapani, Nagaland	ICAR Nagaland Centre Library	Mrs. Ammongla (Library in-charge)	Not provided
8.	ICAR Research Complex for NEH Region, Arunachal Pradesh Centre, Basar, Arunachal Pradesh	ICAR A.P. Centre Library	Gerik Bagra (Library in-charge)	M.Sc. (Agri. Horticulture)
9.	ICAR Research Complex for NEH Region, *Manipur Centre, Lamphelpat, Imphal*	ICAR Manipur Centre Library	Smt. Th. Chandralekha Devi (Library in-charge)	B.Sc.
10.	ICAR Research Complex for NEH Region, Sikkim Centre, Tadong, Gangtok	ICAR Sikkim Centre Library	A. Mahapatra (Library in-charge)	Not provided
11.	ICAR Research Complex for NEH Region, Lembucherra, Tripura Centre, Tripura	ICAR Tripura Centre Library	Mrs. Kavita Mehrotra (Library in-charge)	M.Sc. (Life Science)
12.	ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram	ICAR Mizoram Centre Library	Dr. T. Boopadh (Library in-charge)	Ph.D. (Agri. Entomology)

Source: Computed from the survey Data

Table above shows the institute and centre wise librarian/ library in-charge of the selected institutes and centres of ICAR in Northeast India. It is clear from the survey that there were only library in- charge in all institutes and centres of ICAR. The library in-

charge was the scientists/senior scientists/ principle scientists of the respective institutes and centres. Majority of them were having the qualification of Ph.D. followed by M.Sc. and B.Sc. degree in the different fields of agriculture. Whereas only one library in-charge from the institute of ICAR Research Complex for NEH Region, Umiam, Meghalaya having the bachelor degree in Library and Information Science.

7.1.1.4 Institute and Centre Wise Funding Agency of the Libraries

Table 7.3 represents the main funding agency for the libraries of different institutes and centres.

Table 7.3 Institute and Centre Wise Funding Agency of the Libraries

Sl. No.	Institutes/ Centres	Library	Funding Agency
1.	ICAR Research Complex for NEH Region, Umiam, Meghalaya	ICAR Library	ICAR, New Delhi
2.	ICAR, Agriculture Technology Application Research Institute, Umiam, Meghalaya	ATARI Library	ICAR, New Delhi
3.	National Research Centre on Pig, Guwahati, Assam	NRC Pig Library	ICAR, New Delhi
4.	National Research Centre on Mithun, Medziphema, Nagaland	NRC Mithun Library	ICAR, New Delhi
5.	National Research Centre on Yak, West Kemang, Arunachal Pradesh	NRC Yak Library	ICAR, New Delhi
6.	National Research Centre on Orchids, Pakyong, Sikkim Centre, Sikkim	NRC Orchid Library	ICAR, New Delhi
7.	ICAR Research Complex for NEH Region, Nagaland Centre, Jharnapani, Nagaland	ICAR Nagaland Centre Library	ICAR, RC NEH Region, Umiam, Meghalaya

Table 7.3 (Continued)

Sl. No.	Institutes/ Centres	Library	Funding Agency
8.	ICAR Research Complex for NEH Region, Arunachal Pradesh Centre, Basar, Arunachal Pradesh	ICAR A.P. Centre Library	ICAR, RC NEH Region, Umiam, Meghalaya
9.	ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal	ICAR Manipur Centre Library	ICAR, RC NEH Region, Umiam, Meghalaya
10.	ICAR Research Complex for NEH Region, Sikkim Centre, Tadong, Gangtok	ICAR Sikkim Centre Library	ICAR, RC NEH Region, Umiam, Meghalaya
11.	ICAR Research Complex for NEH Region, Lembucherra, Tripura Centre, Tripura	ICAR Tripura Centre Library	ICAR, RC NEH Region, Umiam, Meghalaya
12.	ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram	ICAR Mizoram Centre Library	ICAR, RC NEH Region, Umiam, Meghalaya

Source: Computed from the survey Data

Table above shows that ICAR Institutes viz. ICAR Research Complex for NEH Region, Umiam, Meghalaya, ICAR, Agriculture Technology Application Research Institute, Umiam, Meghalaya, National Research Centre on Pig, Guwahati, Assam, National Research Centre on Mithun, Medziphema, Nagaland, National Research Centre on Yak, West Kemang, Arunachal Pradesh and National Research Centre on Orchids, Pakyong, Sikkim Centre, Sikkim obtain fund for their libraries mainly from **ICAR, New Delhi**. However, ICAR Centre viz. ICAR Research Complex for NEH Region, Nagaland Centre, Jharnapani, Nagaland,ICAR Research Complex for NEH Region, Arunachal Pradesh Centre, Basar, Arunachal Pradesh,ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal,ICAR Research Complex for NEH Region, Sikkim

Centre, Tadong, Gangtok,ICAR Research Complex for NEH Region, Lembucherra, Tripura Centre, Tripura and ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram acquire their library funds from **ICAR Research for NEH Region, Umiam, Meghalaya**.

7.1.1.5 Institute and Centre Wise Library Staff Strength

Table below shows the number of staff in each library in the institutes and centres of ICAR.

Table 7.4 Institute and Centre Wise Library Staff Strength

Sl. No.	Institute/ Centre	Total Staff Strength							Total	(%)
		L/ LI	DL	AL	IS/ IT (S)	LA/ ILA	LA	O		
1.	ICAR Research Complex for NEH Region, Umiam, Meghalaya	1	-	-	-	1	2	2	6	24%
2.	ICAR, Agriculture Technology Application Research Institute, Umiam, Meghalaya	1	-	-	-	-	-	-	1	4%
3.	National Research Centre on Pig, Guwahati, Assam	1	-	-	-	-	-	-	1	4%
4.	National Research Centre on Mithun, Medziphema, Nagaland	1	-	-	-	-	1	1	3	12%
5.	National Research Centre on Yak, West Kemang, Arunachal Pradesh	1	-	-	-	-	-	1	2	8%
6.	National Research Centre on Orchids, Pakyong, Sikkim Centre, Sikkim	1	-	-	-	-	-	1	2	8%

Table 7.4 (Continued)

Sl. No.	Institute/ Centre	Total Staff Strength							Total	(%)
		L/ LI	DL	AL	IS/ IT (S)	LA/ ILA	LA	O		
7.	ICAR Research Complex for NEH Region, Nagaland Centre, Jharnapani, Nagaland	1	-	-	-	-	-	-	1	4%
8.	ICAR Research Complex for NEH Region, Arunachal Pradesh Centre, Basar, Arunachal Pradesh	1	-	-	-	-	-	-	1	4%
9.	ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat, Imphal	1	-	-	-	-	-	1	2	8%
10.	ICAR Research Complex for NEH Region, Sikkim Centre, Tadong, Gangtok	1	-	-	-	-	1	-	2	8%
11.	ICAR Research Complex for NEH Region, Lembucherra, Tripura Centre, Tripura	1	-	-	-	-	1	-	2	8%
12.	ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram	1	-	-	-	-	-	1	2	8%

Source: Computed from the survey Data

Table 7.4 indicates the total staff strength in the libraries of respective institutes and centres of ICAR. In the above table **L/LI** represents the **Librarian/Library In-Charge**, **DL** represents **Deputy Librarian**, **AL** represents **Assistant Librarian**, **IS/ IT (S)** represents the **Information Scientist/ IT Specialist, LA/ILA** represents **Library Assistant and In-charge Library Assistant, LA** represents **Library Attendant** and **O** represents **other. Figure 7.1** shows the graphical representation of the same**.**

Therefore, it is observed that there is a very less number with total 25 number of staff strength in the library of the 12 institutes and centres of ICAR including 12 library in-charges, 7 other supporting staffs, 5 library attendant and only 1 library assistant.

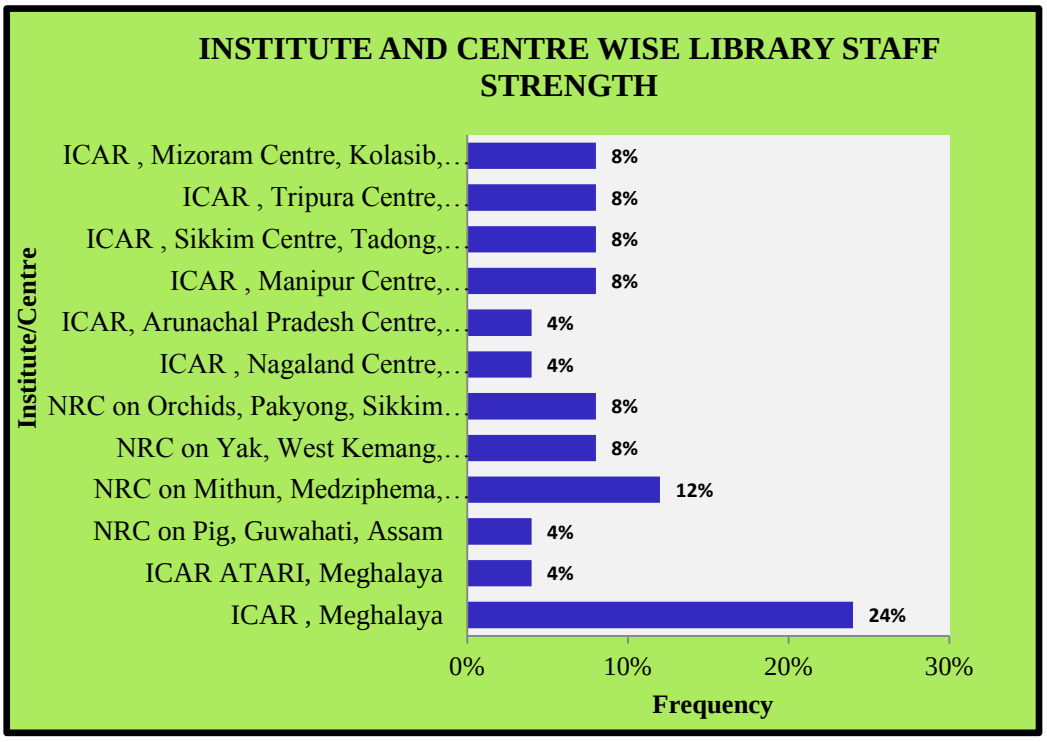

Figure7.1: Institute and Centre Wise Library Staff Strength

7.1.1.6 Institution and Centre Wise Library Collection

Table 7.5 shows the library collection of institutes and centres of ICAR

Table 7.5 Institution and Centre Wise Library Collection

Sl. No.	Institutes/ Centres	Types of Materials			
		Print		Electronic	
		Books	Journals	Books	Journals
1.	ICAR Research Complex for NEH Region, Umiam, Meghalaya	29,196	100	-	-
2.	ICAR, Agriculture Technology Application Research Institute, Umiam, Meghalaya	2,101	12	-	-
3.	National Research Centre on Pig, Guwahati, Assam	2,400	49	-	-
4.	National Research Centre on Mithun, Medziphema, Nagaland	1,745	15	-	-
5.	National Research Centre on Yak, West Kemang, Arunachal Pradesh	2,370	27	-	-
6.	National Research Centre on Orchids, Pakyong, Sikkim Centre, Sikkim	1,100	14	-	-
7.	ICAR Research Complex for NEH Region, Nagaland Centre, Jharnapani, Nagaland	3429	18	-	-
8.	ICAR Research Complex for NEH Region, Arunachal Pradesh Centre, Basar, Arunachal Pradesh	1275	35	-	-
9.	ICAR Research Complex for NEH Region, Manipur Centre, Lamphelpat Imphal	3,076	24	-	-

Table 7.5 (Continued)

Sl. No.	Institutes/ Centres	Types of Materials			
		Print		Electronic	
		Books	Journals	Books	Journals
10.	ICAR Research Complex for NEH Region, Sikkim Centre, Tadong, Gangtok	4,925	27	-	-
11.	ICAR Research Complex for NEH Region, Lembucherra, Tripura Centre, Tripura	2,425	20	-	-
12.	ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram	534	16	-	-

Source: Computed from the survey Data

Table above indicates the library collection of all institutes and centres including both books and journals in print and electronic format. From the survey, it is found that there were no electronic format of books and journals available in any one of the libraries of all surveyed ICAR institutes and centres.

Hence, it is clear that ICAR Research Complex for NEH Region, Umiam, Meghalaya is having the highest collections of book with 29,196 numbers of books in print format. Whereas, ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram is having the lowest collections of book of only 534 number of books in print format.

7.1.1.7 ICT Infrastructure of the Libraries

The ICT infrastructure of the library is one of the important approaches through which one can understand the standard of the library and the use of IT products and services in the library indicate the level of implementation of IT towards modernizing the library. The ICT infrastructure of the selected ICAR institutes and centres mainly comprises of use of computer peripherals which has been briefly discussed below:

In the institute of ICAR Research Complex for NEH Region, Umiam, Meghalaya library has three numbers of desktop, three numbers of UPS with capacity of 1.5 KVA, three numbers of printers and one of photocopier.

In National Research Centre on Yak, West Kemang, Arunachal Pradesh library has only one number of desktop computer, one UPS, one printer, one scanner and one photocopier.

In the Institute of National Research Centre on Pig, Guwahati, Assam library has twenty four numbers of computers with LAN Connectivity, one server (IBM, System), four numbers of UPS (5KVA), two printers, one projector and Internet connectivity with bandwidth (Wi-Fi, 1MBPS).

In National Research Centre on Mithun, Medziphema, Nagaland library has two desktop computers with LAN connection, one scanner, one UPS and one photocopier.

In National Research Centre on Orchids, Pakyong, Sikkim Centre library has three computers interlinked with LAN, one photocopier machine, one UPS, one printer and one scanner.

In the centre ICAR Research Complex for NEH Region, Nagaland Centre library has only one computer with internet connectivity, one UPS, one printer and one scanner.

In ICAR Research Complex for NEH Region, Sikkim Centre library has only one computer, one UPS and one printer with LAN connectivity.

In ICAR Research Complex for NEH Region, Lembucherra, Tripura Centre library has only one computer, one UPS and one printer with LAN connectivity.

In ICAR Research Complex for NEH Region, Manipur Centre libraryhas only one number of computer with one UPS.

However, it is found that the ICT infrastructure is nil in the institute of ICAR, Agriculture Technology Application Research Institute, Umiam, Meghalaya and the centres of both ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram and ICAR Research Complex for NEH Region, Arunachal Pradesh Centre, Basar, Arunachal Pradesh. Thus, statuses of libraries are not up to the mark as with the development of technology.

7.1.1.8 Status of Library Automation

The automation in the library became one of the important steps of the library professionals to keep pace with 21st technological era. Automation of the library helps the library users to keep themselves updated and advance in their field of work or activities. The simple availability of computers in a library is not sufficient, except the technologies centred on computer are put to use for library operations.

Though, from the survey it is observed that there is not a single library of the surveyed institute and centre which is automated. Therefore, the status of library automation is nil in every institute and centreand this reveals that institute and centre libraries are yet to computerise all the sections of the library which not only hampers the scientists research activities but also they face different types of difficulties while accessing information from the library related to their research or allied activities.

7.1.2 Part-II Analysis of Responses Received from the Scientists

This part includes the data analysis and interpretation of data collected from the Scientists of 12 ICAR institutes and regional centres of Northeast which were the main target population of the study chosen as information seekers they make use of services provided by their libraries. This part comprises of six sections which are as under-

- Section A: General Information
- Section B: Allied Specialization
- Section C: Library Visit and Usage Pattern of Library
- Section D: Information Seeking Behaviour
- Section E: Constraints faced by the scientists in using/searching information in libraries
- Section F: Suggestions/remedies which may help the scientists to use the library in an efficient way

7.1.2.1 Responses Received from the Respondents

Questionnaires were distributed among the scientists of twelve selected ICAR institutes and centres in the Northeast Region of India. Number of questionnaires distributed and the response received are shown in **Table 7.6**.

Table 7.6 Responses Received from the Respondents

Sl. No.	Questionnaire	Nos.	Percentage (%)
1.	Received	163	91.1%
2.	Not Received	16	9%
	Total Distributed	**179**	**100%**

Source: Computed from the survey Data

Out of 179 questionnaires distributed, 163 questionnaires were received back from the respondents. The response rate is 91.1 %. It shows that majority of the population has responded the questionnaire. Therefore, number of respondents i.e. **N=163**. **Figure 7.2** shows the graphical representation of the same.

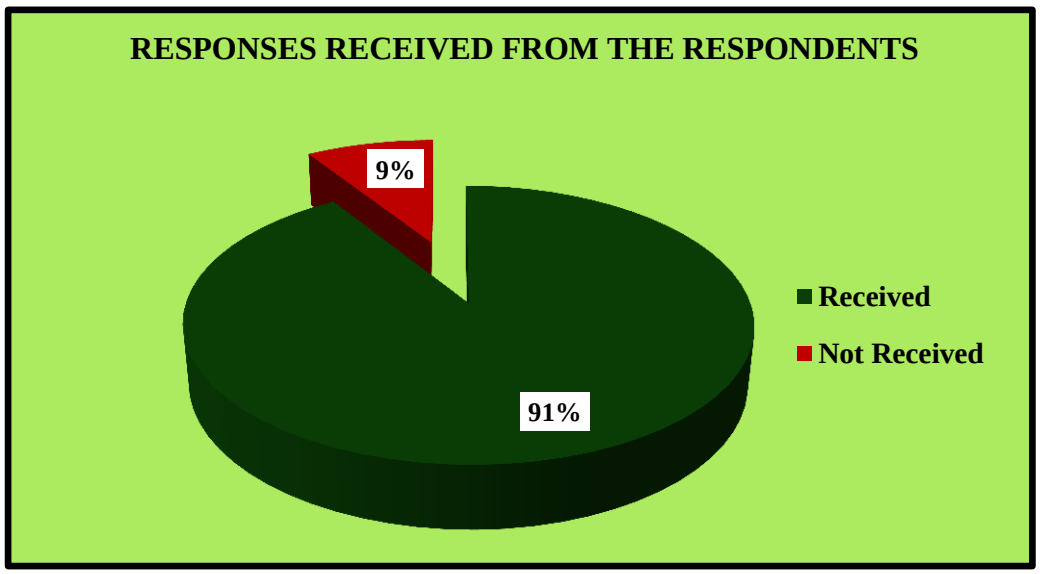

Figure 7.2 Responses Received from the Respondents

7.1.2.2 State Wise Distribution of Institutes and Centres

The following table shows the state wise distribution of institutes and centres selected under the study.

Table 7.7 State Wise Distribution of Institutes and Centres

Sl. No.	Name of the States where Data Collected	No. of Institutes and Centres	Percentage (%)
1.	Meghalaya	2	16.7
2.	Assam	1	8.3
3.	Nagaland	2	16.7
4.	Arunachal Pradesh	2	16.7
5.	Sikkim	2	16.7
6.	*Manipur*	1	8.3
7.	Tripura	1	8.3
8.	Mizoram	1	8.3
	Total	**12**	**100**

Source: Computed from the survey Data

Table 7.7 shows the state wise distribution of institutes and the centres wherethe questionnaires were distributed among the scientists in the institutions across eight states in North-Eastern Region. The states like Meghalaya, Nagaland, Arunachal Pradesh and Sikkim are having both institutes and centres in their respective states. While, in Assam, Manipur, Mizoram and Tripura are having only one institute or centre in each state. **Figure 7.3** shows the graphical representation of the same.

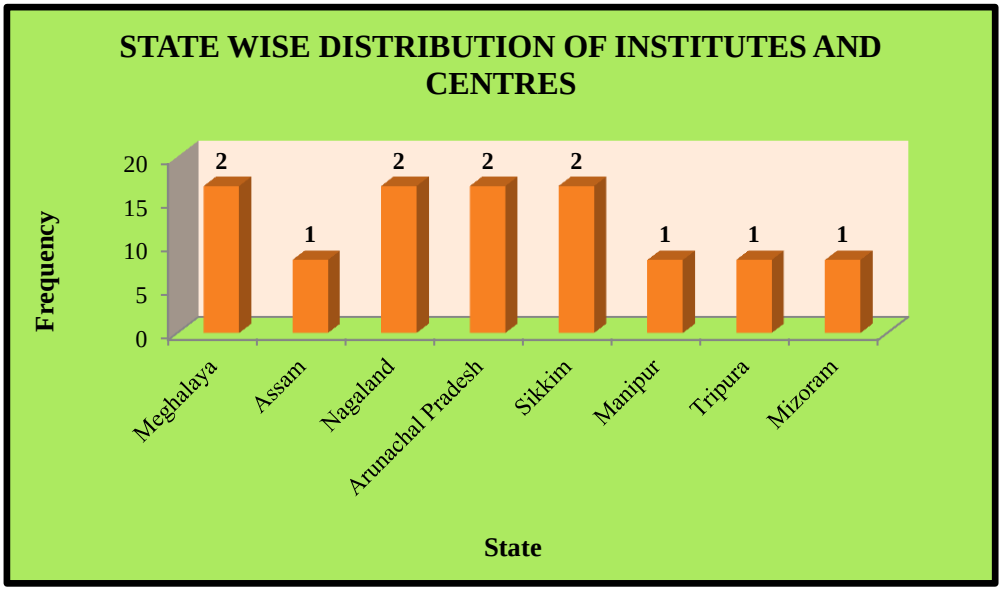

Figure 7.3 State Wise Distributionof Institutes and Centres

7.1.2.3 Institute and Centre Wise Distribution and Responses Received

The institute and centre wise distribution of questionnaires in the institutions and centres andthe responses received are shown in table below:

Table 7.8 Institute and Centre Wise Distribution and Responses Received (N= 163)

Sl. No.	Name of the Institutes and centres	Total No. of Questionnaire Distributed	Total No. of Responses Received (Frequency)	Percentage (%)
1.	ICAR Research Complex for NEH Region, Umiam, Meghalaya	65	63	96.9
2.	ICAR, Agriculture Technology Application Research Institute Zone III, Umiam, Meghalaya	5	4	80
3.	National Research Centre on Pig, Guwahati, Assam	14	13	92.9
4.	National Research Centre on Mithun, Medziphema, Nagaland	10	10	100
5.	National Research Centre on Yak, West Kemang, Arunachal Pradesh	14	13	92.9
6.	National Research Centre on Orchids, Pakyong, Sikkim Centre, Sikkim	10	10	100
7.	ICAR Research Complex for NEH Region, Nagaland Centre,Jharnapani, Nagaland	8	8	100
8.	ICAR Research Complex for NEH Region, Arunachal Pradesh Centre, Basar, Arunachal Pradesh	11	9	81.8
9.	ICAR Research Complex for NEH Region, *Manipur Centre, Lamphelpat, Imphal*	10	8	80
10.	ICAR Research Complex for NEH Region, Sikkim Centre, Tadong, Gangtok	9	8	88.9
11.	ICAR Research Complex for NEH Region, Lembucherra, Tripura Centre, Tripura	16	11	68.8
12.	ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram	7	6	85.7
	Total	**179**	**163**	**91.1**

Source: Computed from the survey Data

Table 7.8 shows the quantum of questionnaires distributed and the responses received. Out of 12 institutes and centres, there are 6 institutes and 6 centres covered in the study. 179 questionnaires were distributed among the scientists of 12 institutes and centres and 163 filled in questionnaires were received. From the table, it is observed thatthe researcher received 100% response received from National Research Centre on Mithun, Medziphema, Nagaland, National Research Centre on Orchids, Pakyong, Sikkim Centre, Sikkim and ICAR Research Complex for NEH Region, Nagaland Centre, Jharnapani, Nagaland. 96.9% response was received from ICAR Research Complex for NEH Region, Umiam, Meghalaya, followed by 92.8% response from National Research Centre on Pig, Guwahati, Assam and also from National Research Centre on Yak, West Kemang, Arunachal Pradesh. 88.9% response received from ICAR Research Complex for NEH Region, Sikkim Centre, Tadong, Gangtok, 85.7% from ICAR Research Complex for NEH Region, Mizoram Centre, Kolasib, Mizoram and 81.8% from ICAR Research Complex for NEH Region, Arunachal Pradesh Centre, Basar, Arunachal Pradesh, 80% responses receives from ICAR, Zonal Project Directorate – Zone III, Umiam, Meghalaya and ICAR Research Complex for NEH Region, *Manipur Centre, Lamphelpat, Imphal. Lastly 68.7% response received from*ICAR Research Complex for NEH Region, Lembucherra, Tripura Centre. **Figure 7.4** shows the graphical representation of the same.

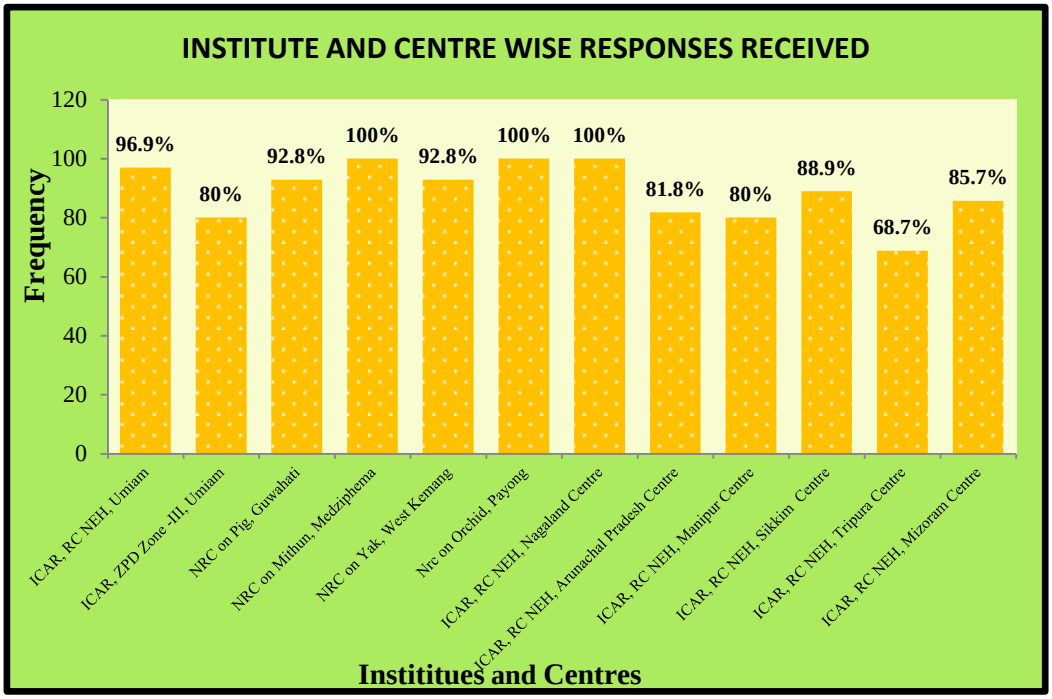

Figure 7.4: Institute and Centre Wise Responses Received

7.1.2.4 Section A: General Information

This section shows the general information which comprises of, age wise, sex wise and category wise responses of the respondents.

7.1.2.4.1 Age Wise Distribution of Respondents

The table below shows the age wise distribution and responses received from the respondents.

Table 7.9: Age Wise Distribution of Respondents (N=163)

Sl. No.	Age Group	Frequency	Percentage (%)
1.	Below 36	61	37.4
2.	36-45	48	29.4
3.	46-55	33	20.2
4.	Above 56	21	13.0
	Total	**163**	**100**

Source: Computed from the survey Data

Table 7.9 shows that 61 (37.4 %) respondents belong to the age group of below 36 years, which is followed by 48 (29.4 %) respondents, belong to the age group of 46-55 years, 33 (20.2 %) respondents belong to the age group of 36-45 years and lastly, 21 (13 %) respondents belong to age group of above 56 years. Thus, majority of the respondents belong to the age group below 36. **Figure 7.5** shows the graphical representation of the same.

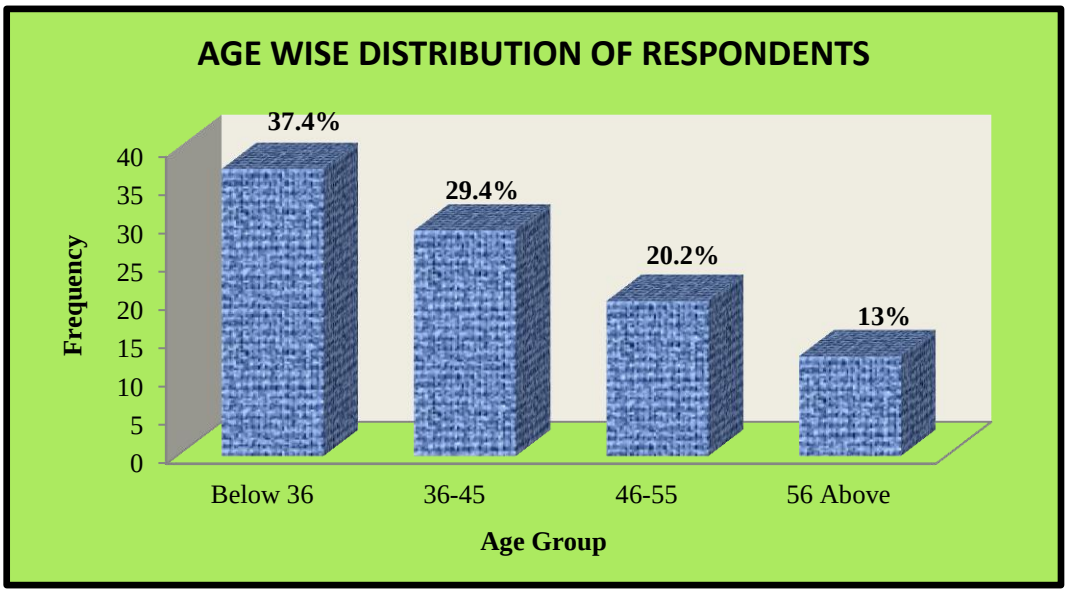

Figure 7.5: Age Wise Distribution of Respondent

7.1.2.4.2 Sex Wise Distribution of Respondents

Table below shows the sex wise distribution and responses received from the respondents.

Table 7.10: Sex Wise Distribution of Respondents (N=163)

Sl. No.	Sex	Frequency	Percentage (%)
1.	Male	136	83.4
2.	Female	27	16.6
	Total	**163**	**100**

Source: Computed from the survey Data

Table 7.10 represents the sex-wise distribution of respondents, which reveals that out of 163 respondents, the majority of them are male respondents 136 (83.4 %) and that of female respondents are 27 (16.6 %). **Figure 7.6** shows the graphical representation of the same.

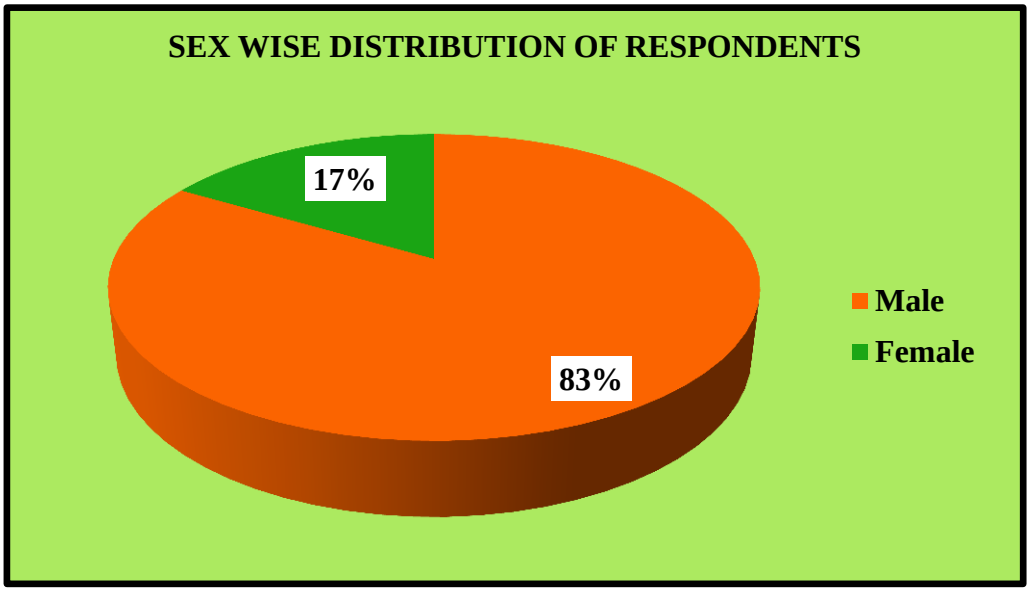

Figure 7.6: Sex Wise Distribution of Respondents

7.1.2.4.3 Category Wise Distribution of Respondents

Table below shows the category wise distribution and responses received from the respondents.

Table 7.11: Category Wise Distribution of Respondents (N=163)

Sl. No.	Category	Frequency	Percentage (%)
1.	Principle Scientist /Professor	38	23.3
2.	Senior Scientist /Associate Professor	51	31.3
3.	Scientist/Assistant Professor	74	45.4
	Total	**163**	**100**

Source: Computed from the survey data

Table 7.11 reveals that out of 163 respondents, 74 (45.4 %) of them belong to the category of Scientist/Assistant Professor which is followed by 51 (31.3 %) respondents belong to thecategory of Senior Scientist/ Associate Professor and 38 (23.3 %) respondents belong to the category of Principle Scientist/ Professor. Hence, the majority of respondents belong to the designation of Scientist. **Figure 7.7** shows the graphical representation of the same.

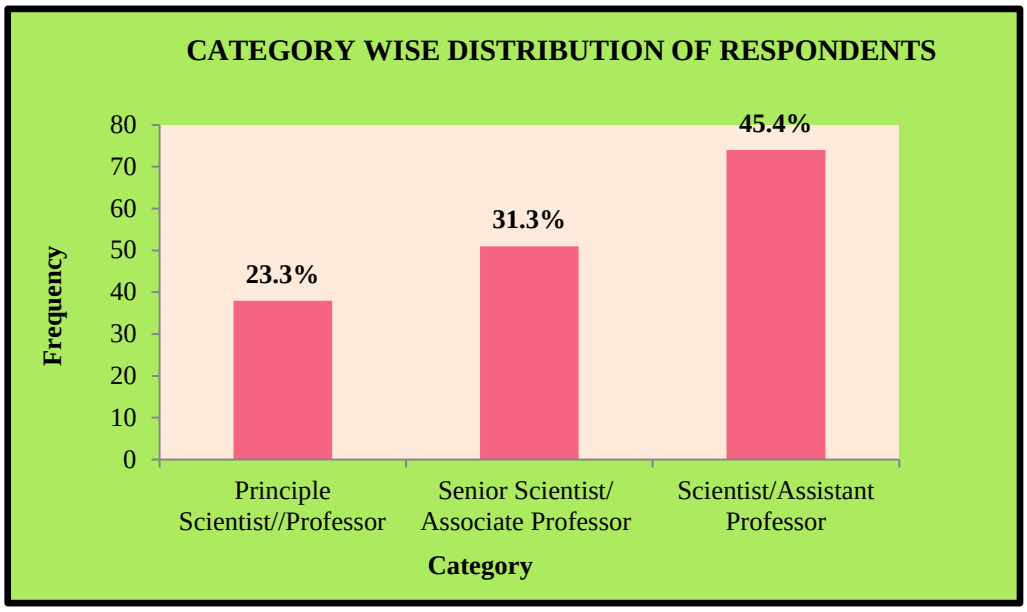

Figure 7.7: Category Wise Distribution of Respondents

7.1.2.5 Section B: Allied Specialization

This section shows the allied specialization which includes area of specialization, area of research work, and number of participations in seminar/workshops/summer institute by the respondents and types of works or activities performed by the scientists.

7.1.2.5.1 Areas of Specialization

Table below indicates the types of specialization in different areas of scientists.

Table 7.12: Areas of Specialization

Sl. No.	Area of Specialization
1.	Agricultural Economics
2.	Agricultural Extension
3.	Agricultural Meteorology
4.	Agricultural Process Engineering
5.	Agricultural Structures & Environmental Management
6.	Agroforestry
7.	Agronomy
8.	Animal Biotechnology
9.	Animal Genetics
10.	Animal Genetics and Breeding
11.	Animal Nutrition
12.	Animal Parasitology
13.	Animal Physiology
14.	Animal Reproduction
15.	Animal Reproduction and Gynaecology
16.	Aquaculture
17.	Cropping Sequence System & Nutrition Management
18.	Dairy Economics
19.	Diary Chemistry
20.	Diary Microbiology
21.	Ethano-Veterinary & Cardiology
22.	Fish & Fisheries
23.	Fish Genetics & Breeding
24.	Fish Health
25.	Fish Nutrition
26.	Fish Processing Technology
27.	Fisheries Resource Management
28.	Floriculture & Landscaping

Table 7.12 (Continued)

Sl. No.	Area of Specialization
29.	Food Technology
30.	Fruit Crops
31.	Fruit Science
32.	Genetics & Plant Breeding
33.	Home Science
34.	Livestock Production& Management
35.	Livestock Products & Technology
36.	Molecular Plant & Physiology
37.	Plant Breeding
38.	Plant Pathology
39.	Poultry Science
40.	Seed Science & Technology
41.	Soil Science
42.	Veterinary Extension
43.	Veterinary Medicine
44.	Veterinary Parasitology
45.	Veterinary Pathology
46.	Veterinary Pharmacology
47.	Veterinary Public Health

Source: Computed from the survey Data

Table 7.12 shows the different areas of specialization of scientists viz. Animal Nutrition, Animal Reproduction, Livestock Production & Technology etc. who were engaged in their respective research works or activities.

7.1.2.5.2 Participation of Scientists in Conference/Seminars/Workshop/ Summer Institutes

The table below shows the number of participations in Congress, Conferences, Seminars, Workshop and in Summer Institutes by the respondents.

Table 7.13 Participation in Conference/Seminars/Workshop/ Summer Institutes (N=163)

Sl. No.	Rank	Participation	Number	Percentage (%)
1.	I	Conferences	158	96.9
2.	II	Seminars	149	91.4
3.	III	Workshop	123	75.5
4.	IV	Congress	43	26.4
5.	V	Summer Institutes	32	19.6

Source: Computed from the survey Data

Table 7.13 indicates that most of the respondents with 158 (96.9 %) participated in 'conferences' as rank **one**, followed by 149 (91.4 %) respondents participated in 'seminars' as rank **two**, 123 (75.5 %) respondents attended in 'workshop' as rank **three**, 43 (26.4 %) respondents participated in 'congress' as rank **four** and very least number of respondents with only 32(19.6) number participated in 'Summer Institutes' as rank **five**. **Figure 7.8** shows the graphical representation of the same.

Therefore, the majority of the respondents participated in different conferences including both national and international level.

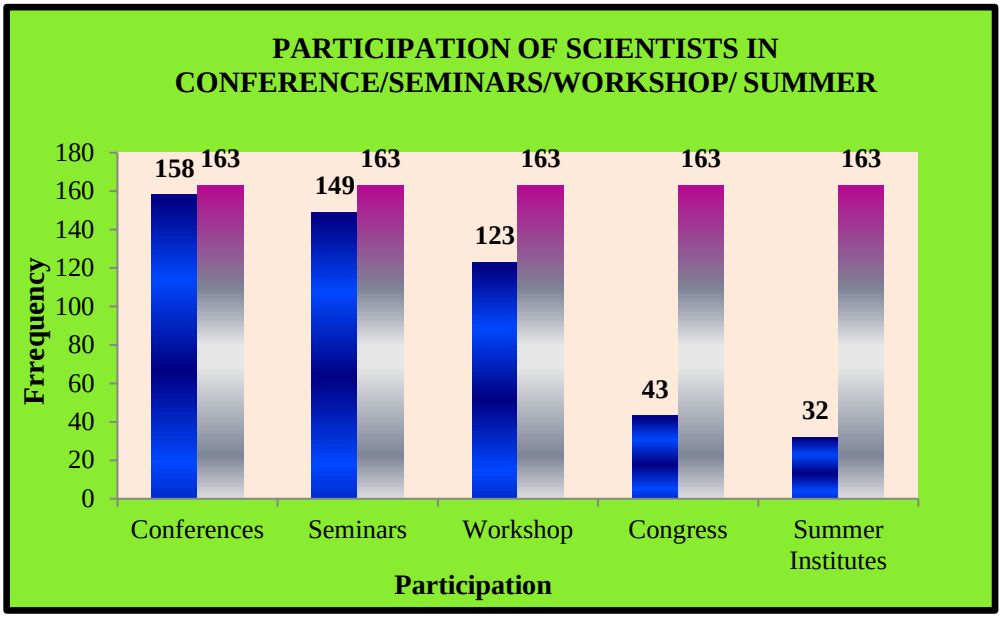

Figure 7.8: Participation in Conference/Seminars/Workshop/ Summer Institute

7.1.2.5.3 Category Wise Area of Activities of the Respondents

The table below shows thecategory wisearea of works or activities of the respondents.

Table 7.14 Category Wise Area of Activities of the Respondents (N=163)

Sl. No.	Work/ Activity	Scientists		Senior Scientists		Principle Scientists		Percentage	
		No.	(%)	No.	(%)	No.	(%)	No.	(%)
1.	Research Only	38	51.3	22	43.1	19	50.0	79	48.5
2.	Teaching only	0	0.0	0	0.0	0	0.0	0	0.0
3.	Both Research and Teaching	13	17.6	10	19.6	8	21.1	31	19.0
4.	Others	23	31.1	19	37.3	11	28.9	53	32.5
	Total	**74**	**100**	**51**	**100**	**38**	**100**	**163**	**100**

Source: Computed from the survey Data

Table 7.14 indicates thatthe respondents (scientists, senior scientist and principle scientists) with 79 (48.5 %) engaged in research activity only, 53 (32.5 %) respondents (scientists, senior scientists and principle scientists) engaged in other activities like

extension, demonstration ,technology dissemination ,training activities etc., 31 (19.0 %) respondents (scientists, senior scientists and principle scientists) engaged in both research and teaching activities and whereas not a single respondents(scientists, senior scientists and principle scientists) engaged only in the teaching activity. **Figure 7.9** shows the graphical representation of the same.

Thus, it is clear that majority of respondents engaged in research activities mainly and also engaged in other activities like demonstration, extension, training activities etc.

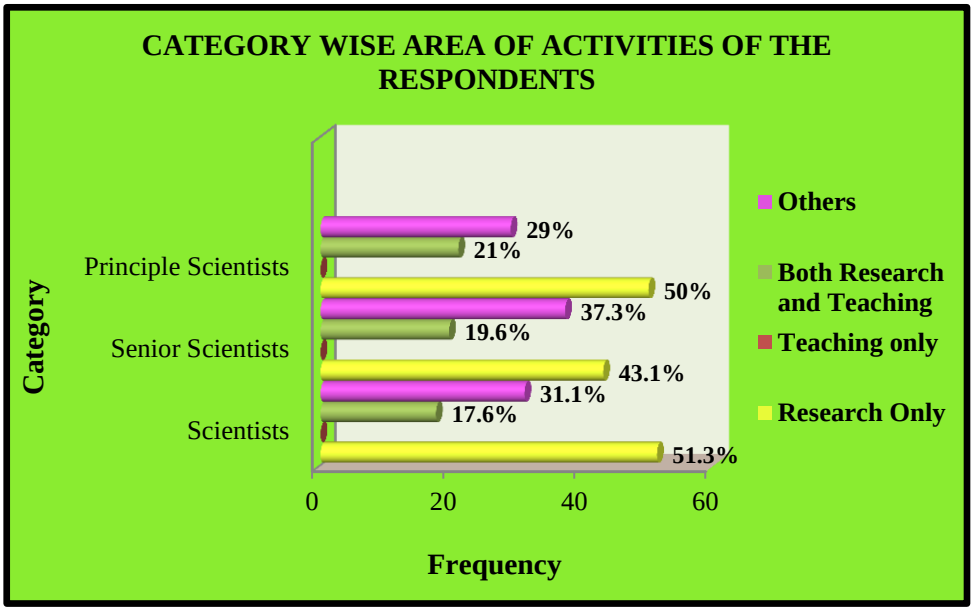

Figure 7.9: Category Wise Area of Activities of the Respondents

7.1.2.6 Section C: Library Visit and Usage Patternof Library

This section clears about the library visit pattern, purpose of library, type of document generally consulted by the respondents and also the type of information often required by the respondents.

7.1.2.6.1 Library Visit Pattern of the Respondents

The table below indicates the pattern of library visit of the respondents.

Table 7.15 Library Visit Pattern of the Respondents (N=163)

Sl. No.	Visit	Frequency	Percentage (%)
1.	Daily	12	7.4
2.	Once a week	25	15.3
3.	Once a month	67	41.1
4.	Rarely	56	34.4
5.	Never	3	1.8
	Total	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"How often do you visit your institutional and centre library?"*** Answers given by the respondents are indicated in the **Table 7.15** above shows that out of 163 respondents about 67 (41.1 %) respondents visits library once a month, which is followed by 56 (34.4 %) respondents used to visit the library rarely, 25 (15.3 %) respondents visits the library once a week, 12 (7.4 %) respondents whovisits library on daily basis, whereas 3(1.8%) respondents never used to visit the library. **Figure 7.10** shows the graphical representation of the same.

Hence, the majority of respondents used to visit library once a month.

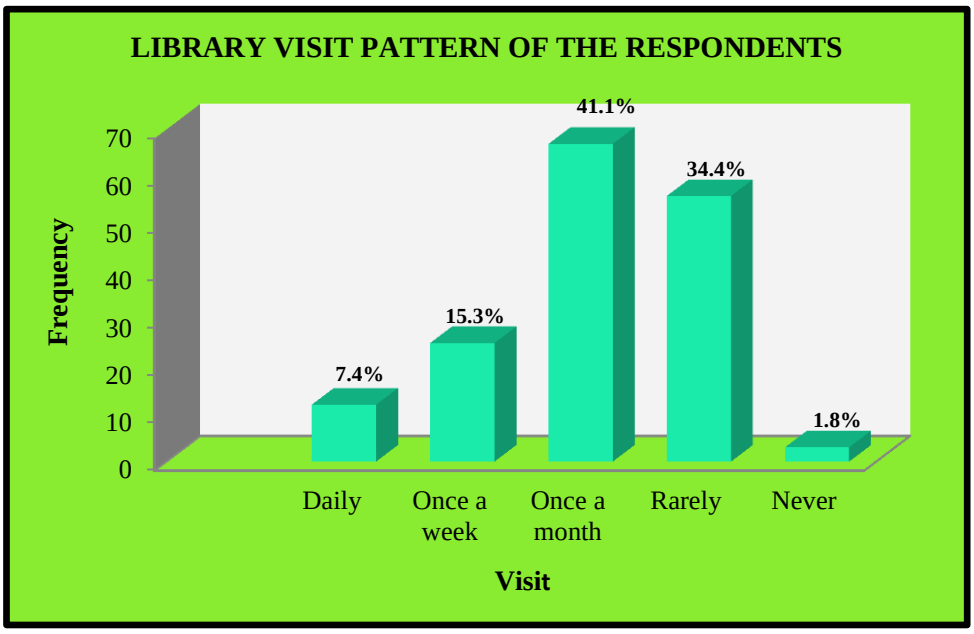

Figure 7.10 Library Visit Pattern of the Respondents

7.1.2.6.2 Purpose of Library Visit of the Respondents

The table below shows the different types of purposes for visiting the library by the respondents.

Table 7.16 Purpose of Library Visit of the Respondents (N=163)

Sl. No.	Rank	Purpose of Visit	Frequency	Percentage (%)
1.	I	Consultation of Reference Books	157	96.3
2.	II	Get Books Issued/Returned	149	91.4
3.	III	Newspaper/Magazines reading	79	48.5
4.	IV	Workshop, Seminars, Conference Proceedings	53	32.5
5.	V	Consult journals	47	28.8

Source: Computed from the survey Data

The respondents were asked ***"Please indicate your purpose of visit to the library?"*** Answers given by the respondents are indicated in the **Table 7.16** above reveals that 157 (96.3 %) respondents visit library for 'consulting reference books' as rank **one**,

followed by 149 (91.4 %) respondents used to visit library for 'getting books issued/returned' as rank **two**, 79 (48.5 %) respondents visits library for 'reading newspapers and magazines' as rank **three**, 53 (32.5 %) respondents visit the library for 'consulting workshopseminars and conference proceedings' as rank **four** and with 47 (28.8 %) respondents visit library for 'consulting journals' as rank **five**. **Figure 7.11** shows the graphical representation of the same.

Hence, the majority of respondents visit library mainly for consulting the reference books whereas, not a single respondent visits library for e-mail, internet access, for accessing e-journals/ databases, CD/ DVD databases, pre-prints/ reprints directly from author and for other purposes.

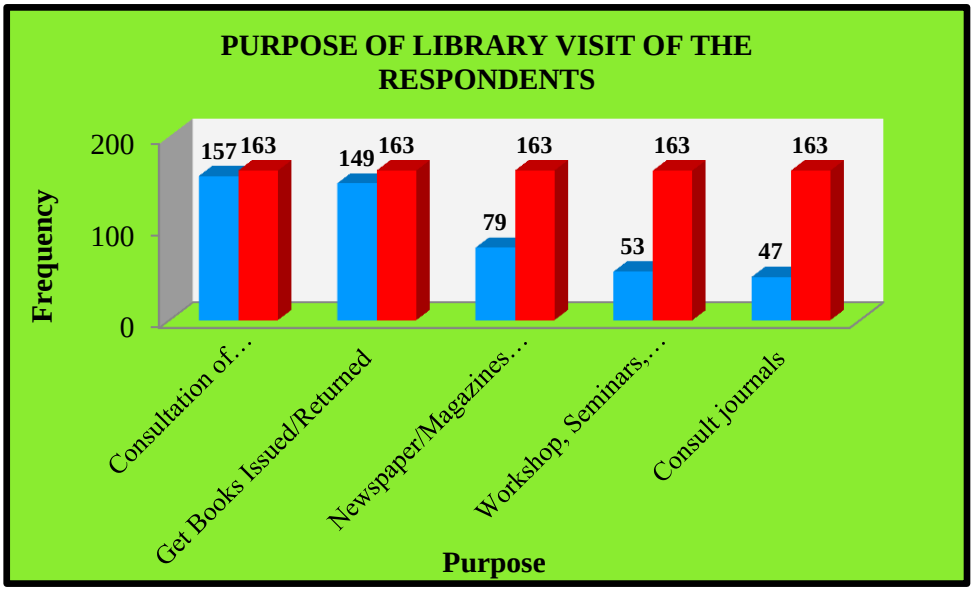

Figure 7.11 Purpose of Library Visit of the Respondents

7.1.2.6.3 Type of Document Generally Consulted by the Respondents

The following table indicates the types of document generally consulted by the respondents.

Table: 7.17 Type of Document Generally Consulted by the Respondents (N=163)

Sl. No.	Rank	Type of Document	Frequency	Percentage (%)
1.	I	Reference Books	158	96.9
2.	II	Text Books	136	83.4
3.	III	Research Reports	89	54.6
4.	IV	Scholarly Journals	73	44.7
5.	V	Newspapers/ Popular magazines	60	36.8
6.	VI	Govt. Reports	56	34.4

Source: Computed from the survey Data

The respondents were asked ***"Please indicate the type of document you generally consult in the library?"*** Answers given by the respondents are indicated in the **Table 7.17.** It shows that 158 (96.9 %) respondents generally consult 'reference books' in the library as rank **one**, followed by 136 (83.4 %) that consult 'text books'as rank **two**, 89 (54.6 %) consults 'research reports' as rank **three,** 73 (44.7 %) consults 'scholarly journals' as rank **four**, 60 (36.8 %) consults 'newspaper/ popular magazines' as rank **four** and 56 (34.4 %) consult 'govt. Reports'as rank **five**. **Figure 7.12** shows the graphical representation of the same.

Hence, majority of the respondents generally consults reference books in the library whereas, not a single respondent used to consult CD/DVD Databases, online resources or other resources in the library.

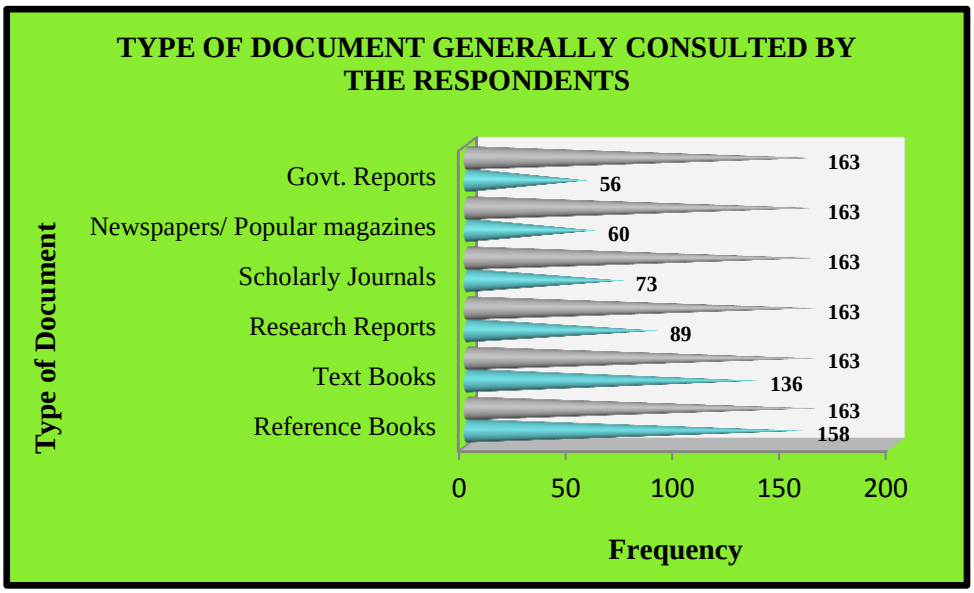

Figure 7.12: Type of Document Generally Consult by the Respondents

7.1.2.6.4 Type of Information Often Required by the Respondents

The table below shows the types of information often required by the respondents.

Table 7.18 Type of Information Often Required by the Respondents (N=163)

Sl. No.	Rank	Types of Information	Frequency	Percentage (%)
1.	I	Procedural Information	146	89.6
2.	II	Information for preparing a research project	139	85.3
3.	III	Information for writing a review article	129	79.1
4.	IV	Others	76	46.6

Source: Computed from the survey Data

The respondents were asked ***"What type of information do you often require?"*** Answers given by the respondents are indicated in the **Table 7.18.** It reveals that 146 (89.6 %) respondents required 'procedural information' as rank **one**, 139 (85.3 %)

respondents required ‘information for preparing a research project ‘as rank **two**, 129 (79.1 %) respondents required ‘information for writing a review article ‘as rank **two** and only 76 (46.6 %) respondents required ‘other’ types of information like information for preparing presentation, current information related to their subject of both India and abroad etc. as rank **four**. **Figure 7.13** shows the graphical representation of the same.

Thus, majority of respondents often require procedural information.

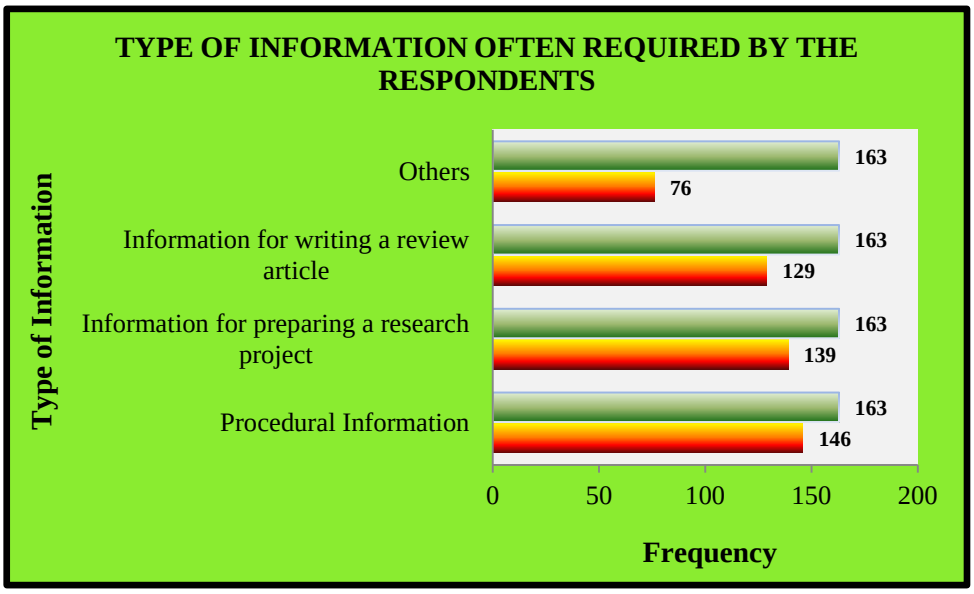

Figure 7.13 Information Often Require by the Respondents

7.1.2.7 Section D: Information Seeking Behaviour

This section shows about the information seeking behaviour of respondents including different types of information sources to meet their research and other needs, types of library resources they usually consult, how they keep themselves updated in the area of research, to know the adequacy of their library, how they obtain journal articles, to know the extent of dependency on the different types of sources, to know their dependency on the different mode of collection of information sources and different types of documents.

7.1.2.7.1 Preferences of Information Sources to meet Research/Teaching Needs

The table below preference given to the information sources which help to meet the research/teaching needs of the respondents.

Table 7.19: Preferences of Information Sources to meet Research/Teaching Needs (N=163)

Sl. No.	Rank	Types of Information Sources	Frequency	Percentage (%)
1.	I	Consult Indexing Journal	151	92.6
2.	II	Consult Review article in a periodical	142	87.1
3.	III	Discussion with experts in the field	139	85.3
4.	IV	Consult Bibliography	130	79.6
5.	V	Consult indexing and abstracting Journal	119	73
6.	VI	Discussion with colleagues within the organization	117	71.8
7.	VII	Discussion with colleagues elsewhere	94	57.7
8.	VIII	Discussion with supervisor	91	55.8
9.	IX	Visit Library/ Information Centre	79	48.5
10.	X	Consult Library Catalogue	52	31.9
11.	XI	Discussion with librarian/Reference staff of your library	25	153.3

Source: Computed from the survey Data

The respondents were asked ***"What are the different types of information sources you used to meet your research/teaching needs?"*** Answers given by the respondents are indicated in the **Table 7.19** reveals that with 151 (92.6 %) 'Consult Indexing Journal ranked' as rank **one**, followed by 142(87.1 %) 'Consult Review article in a periodical' as rank **two**, 139 (85.3 %) 'Discussion with experts in the field' ranked as **three**, 130 (79.6

%) 'Consult Bibliography' as rank **four**, 119 (73 %) 'Consult indexing and Abstracting Journal' ranked as **five**, 117 (71.8 %) 'Discussion with colleagues within the organisation' as rank **six**, 94 (57.7 %) 'Discussion with colleagues elsewhere' as rank **seven**, 91 (55.8 %) 'Discussion with supervisor' as rank **Eight**, 79 (48.5 %) 'Visit Library/ Information Centre' as rank **nine**, 52 (31.9 %) 'Consult Library Catalogue' as rank **ten** and with 25 (153.3 %) 'Discussion with librarian/Reference staff of your library' as rank **eleven**. **Figure 7.14** shows the graphical representation of the same.

Hence, it is observed that consultingindexing journal,consultingreview article in a periodical,discussion with experts in the field,consult bibliography and consulting indexing and abstracting journal were the important information sources to meet the needs of the respondents.Whereas, visiting Library/ Information Centre,consult Library catalogue and discussion with librarian/Reference staff of your library were given very least importance as information sources for meeting the research/teaching needs of the respondents.

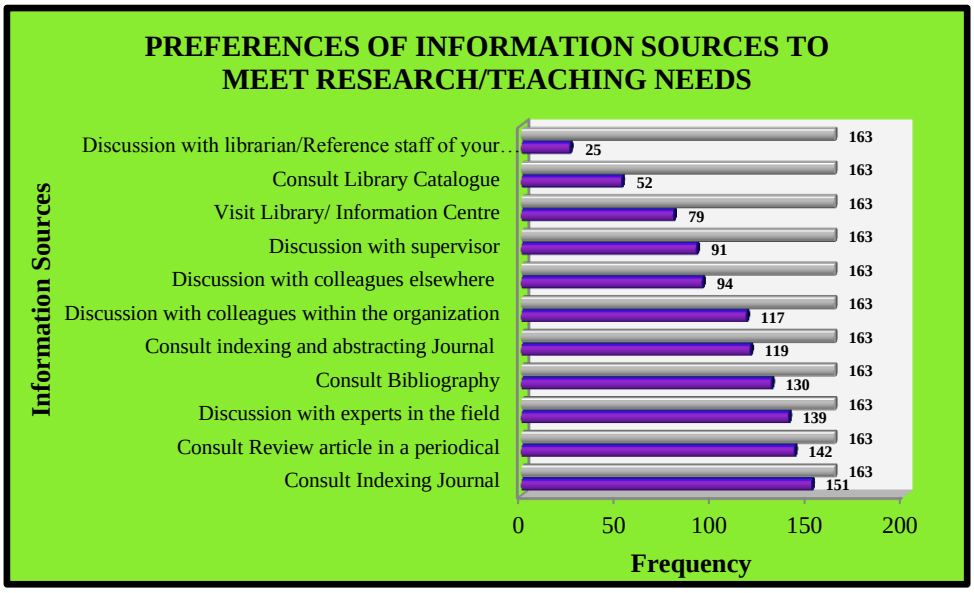

Figure 7.14: Preferences of Information Sources to meet Research/Teaching Needs

7.1.2.7.2 Types of Library Resources Consulted for Teaching Learning/ Researches

The following table shows the types of library resources usually consult by the respondents for their teaching/research activities.

Table 7.20: Types of Library Resources Consulted for Teaching Learning/ Researches (N=163)

Sl. No.	Rank	Types of Library Resources	Frequency	Percentage (%)
1.	I	Scholarly Journals	157	96.3
2.	II	Textbooks	132	81.0
3.	III	Research/Govt. Reports	121	74.2
4.	IV	Conference Proceedings	98	60.1
5.	V	Others	32	19.6
6.	VI	Monographs	24	14.7
7.	VII	Abstracts and Indexes	11	6.8

Source: Computed from the survey Data

The respondents were asked ***"Please indicate which library resources do you usually consult for your teaching/research activities?"*** Answers given by the respondents are directed in the **Table 7.20** which reveals that 157 (96.3 %) respondents usually consult 'Scholarly Journals' as rank **one**, followed by 132 (81 %) respondents consult'text books' as rank **two**, 121 (74.2 %) respondents consult 'Research/Govt. Reports' as rank **three**, 98 (60.1 %) respondents consult 'Conference Proceedings'as rank **four**, 32 (19.6 %) respondents consult'other resources' like newspaper, magazine, CD/DVD etc. as rank **five**, 24 (14.7 %) respondents consult'monographs' as rank **six** and with least of 11 (6.8 %) respondent consult 'Abstracting and Indexing sources' as rank **seven**. **Figure 7.15** shows the graphical representation of the same.

Therefore, it is perceived from the above that majority of the respondents usually consults scholarly journals, text books and research/govt. reports as the main sources from the library.

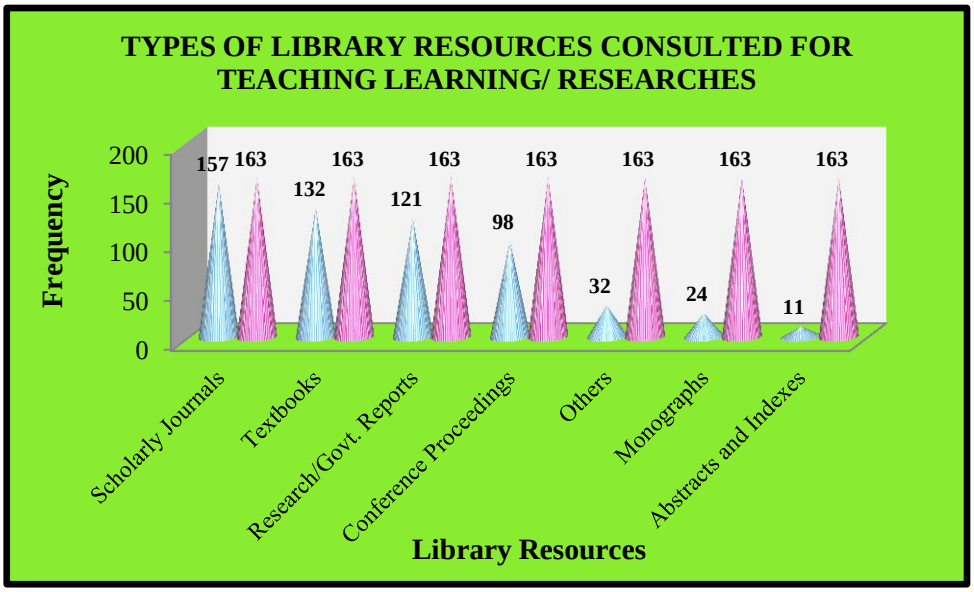

Figure 7.15: Types of Library Resources Consulted for Teaching Learning/ Researches

7.1.2.7.3 Patterns of Keeping Updated in the Area of Research

The table below mainly shows how the respondents keep themselves updated in the area of their research works.

Table 7.21 Patterns of Keeping Updated in the Area of Research (N=163)

Sl. No.	Rank	Sources	Frequency	Percentage (%)
1.	I	Searching Internet on given topics	159	97.6
2.	II	Scanning Current issues of Journals	143	87.7
3.	III	Attending Workshop/ Seminar	123	75.5
4.	IV	Workshop/ Seminar and Conference Proceedings	98	60.1
5.	V	Pre-prints/ reprints directly from author	69	42.3
6.	VI	Personnel Communication	54	33.1
7.	VII	Others	45	27.6
8.	VIII	Technical/ Research Report	28	17.2
9.	IX	Indexing/ Abstracting Periodicals	22	13.5
10.	X	Book, Monographs etc.	21	12.9
11.	XI	Yearbooks/annual review	14	8.6
12.	XII	Dissertation/Thesis	13	8.0
13.	XIII	Bibliographies/Library Catalogue	7	4.3

Source: Computed from the survey Data

The respondents were asked ***"How do you yourself updated in the area of your research?"*** Answers given by the respondents are directed in the **Table 7.21** reveals that 159 (97.6 %) respondents keep themselves updated in their research work by 'Searching Internet on given topics' as rank **one**, followed by 143 (87.7 %) respondents keep updated by 'Scanning Current issues of Journals' as rank **two**, 123 (75.5 %) respondents keep updated by'Attending Workshop/ Seminar' as rank **three**, 98 (60.1 %) respondents keep updated by 'Workshop/ Seminar and Conference Proceedings'as rank **four**, 69 (42.3 %) respondents keep updated by 'Pre-prints/ reprints directly from author' as rank **five**, 54 (33.1 %) respondents keep updated by 'Personnel Communication'as rank **six**, 45 (27.6 %)

respondents updated by 'other sources'as rank **seven,** 28 (17.2 %)respondents updated by 'Technical/ Research Report' as rank **eight,** and very least percentage with 22 (13.5 %) respondents by 'Indexing/ Abstracting Periodicals'as rank **nine**, 21 (12.9 %) respondents updated by 'Book, Monographs etc.'as rank **ten**, 14 (8.6 %) respondents by 'Yearbooks/annual review' as rank **eleven**, 13(8.0 %) respondents updated by 'Dissertation/Thesis'as rank **twelve** and with 7 (4.3 %) respondents updated by 'Bibliographies/Library Catalogue' as rank **thirteen**. **Figure 7.16** shows the graphical representation of the same.

Hence, it is clear that majority of respondents keep updated themselves in the area of their research work by Searching Internet on given topics followed by Scanning Current issues of Journals, Attending Workshop/ Seminar and Workshop/ Seminar and Conference Proceedings.

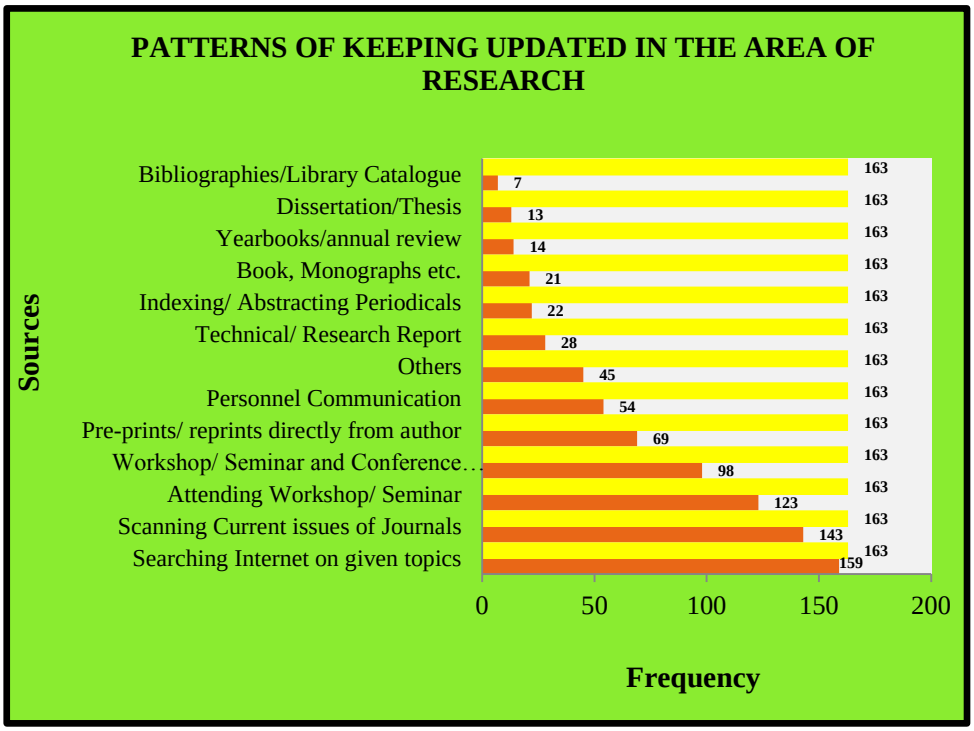

Figure 7.16: Patterns of Keeping Updated in the Area of Research

7.1.2.7.4 Adequacy of Library Resources

The table below shows the reading materials available in the library are adequate or not to satisfy the information seeking needs of the respondents.

Table 7.22: Adequacy of Library Resources (N=163)

Sl. No.	Adequacy	Frequency	Percentage (%)
1.	Adequate	11	6.7
2.	Partially Adequate	58	35.6
3.	Not Adequate to all	94	57.7
	Total	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"Do you find the reading materials available in your library are adequate to satisfy your information seeking needs?"*** Answers given by the respondents are directed in the **Table 7.22** shows that, a response rate as high as 94 (57.7 %) were of opinion that library collections in the Centre and Institute library is not adequate at all, 58 (35.6 %) respondents find library collectionswere partiallyadequate, whereas only 11 (6.7 %) respondents found library collections were adequate. **Figure 7.17** shows the graphical representation of the same.

Hence, the majority of respondents of the opinion that library collection in the Centre and Institute library is not adequate at all.

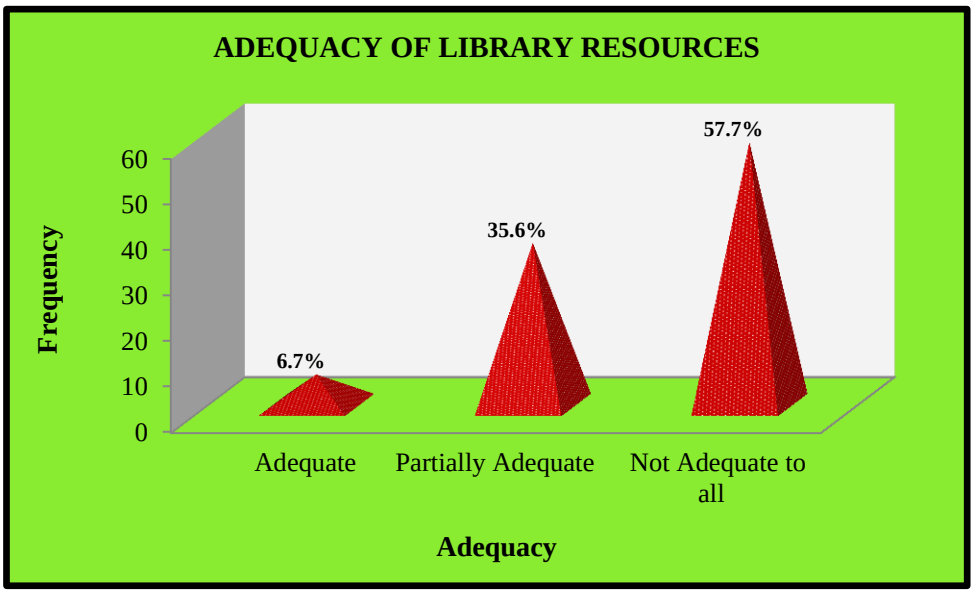

Figure 7.17 Adequacy of Library Resources

7.1.2.7.5 Pattern of Obtaining Journal Articles

The table below shows the different patterns of obtaining journals by the respondents.

Table 7.23: Pattern of Obtaining Journal Articles (N=163)

Sl. No.	Rank	Pattern	Frequency	Percentage (%)
1.	I	Subscribe Journals Personally	162	99.4
2.	II	Access and Downloading to Open Access Journals for full text	161	98.8
3.	III	Others	157	96.1
4.	IV	From J-Gate Custom Content Centre of INFLIBNET (JCCC)	55	33.7
5.	V	Under Document Delivery Service of INFLIBNET/ DELNET	42	25.8
6.	VI	Consult Journals in Library	36	22.1

Source: Computed from the survey Data

The respondents were asked ***"Please indicate how you obtain journal articles for Tyour research?"*** Answers given by the respondents are focussed in the **Table 7.23** which reveals that 162 (99.4 %) respondents obtain journal articles by 'Subscribing Journals Personally' as rank **one**, followed by 161 (98.8 %) respondents obtain journal articles by 'Access and Downloading to Open Access Journals for full text' as rank **two**, 157 (96.1 %) respondents obtain journal articles by 'other sources' as rank **three**, 55 (33.7 %) respondents obtain journal articles by from 'J-Gate Custom Content Centre of INFLIBNET (JCCC)' as rank **four**, 42 (25.8 %) respondents obtain journal articles by 'Under Document Delivery Service of INFLIBNET/ DELNET' as rank **five** and only 36 (22.1 %) 'Consult journals in library' for obtaining journal articles for their research as rank **six**. **Figure 7.18** shows the graphical representation of the same.

Therefore, majority of the respondents obtain journal articles by subscribingjournals personally, by access and downloading to open access journals for full text and also through other sources like JCCC@ CeRA, Research Gate website, PubMed, collecting through friends or colleagues were working inside and outside India etc.

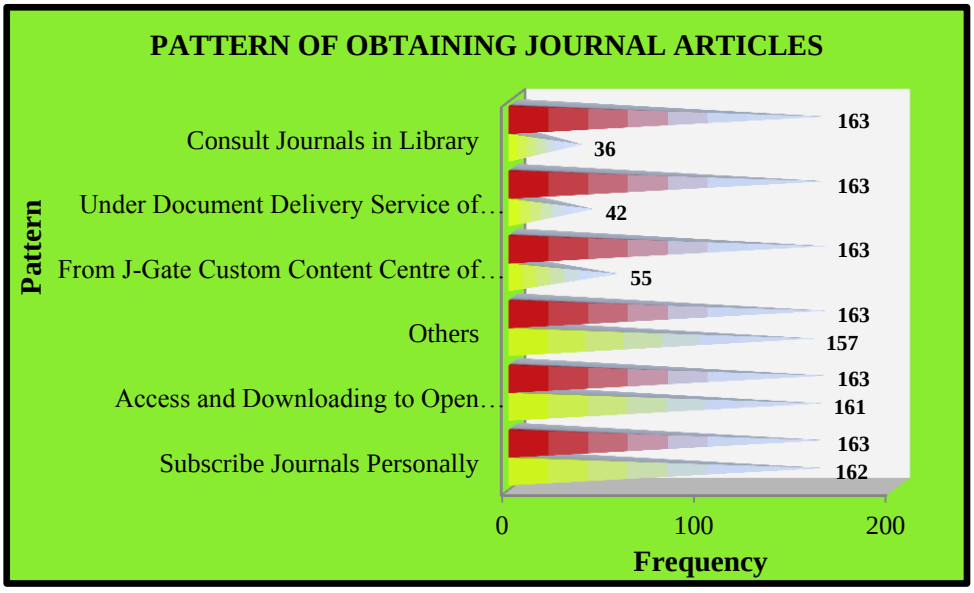

Figure 7.18: Pattern of Obtaining Journal Articles

7.1.2.6.6 Dependency on Different Types of Sources

The table below indicates the extent of dependency in different types of sources for accessing information.

Table 7.24: Dependency on Different Types of Sources (N=163)

Sl. No.	Sources	Great Extent		To Some Extent		Not At All		Total	
		No.	(%)	No.	(%)	No.	(%)	No.	(%)
1.	Library Collection	0	0.0	24	14.7	139	85.3	**163**	**100**
2.	Personal Collection	129	79.1	34	20.9	0	0.0	**163**	**100**
3.	Personal Collection of Colleagues	0	0.0	59	36.2	104	63.8	**163**	**100**
4.	Other	98	60.1	38	23.3	27	16.6	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"To what extent you depend on different information sources for accessing information?"*** Answers given by the respondents are focussed in the **Table 7.24** which reveals that as regard to the dependency on library collection, majority of the respondents said that they used *'not at all'* accounting for the response rate of 139 (85.3 %) while, only 24 (14.7 %) respondents depend on it *'to some extent'* for accessing information.

In case of personal collection the respondents reported that the majority of them depend on *'to great extent'* with 129 (79.1 %) whereas, 34 (29.4 %) respondents depends *'to some extent'* for accessing information for their research work.

As regard to the personal collection of colleagues majority of the respondents 104 (63.8 %) says that they depend *'not at all'* while, only 59 (36.2 %) respondents depend on *'to some extent'* for accessing the required information for their research activities.

Now, concerning to other sources like internet surfing, using searching tools etc. majority of the respondents depend on *'to great extent'* with 98 (60.1 %), with 38 (23.3 %) depend on *'to some extent'* and only with 27 (16.6 %) respondents depend *'not at all'* for accessing information for their research work. **Figure 7.19** shows the graphical representation of the same.

Therefore, it is clear from the above that most of the respondents depend on 'great extent' to the personal collections and other sources like internet or online sources.

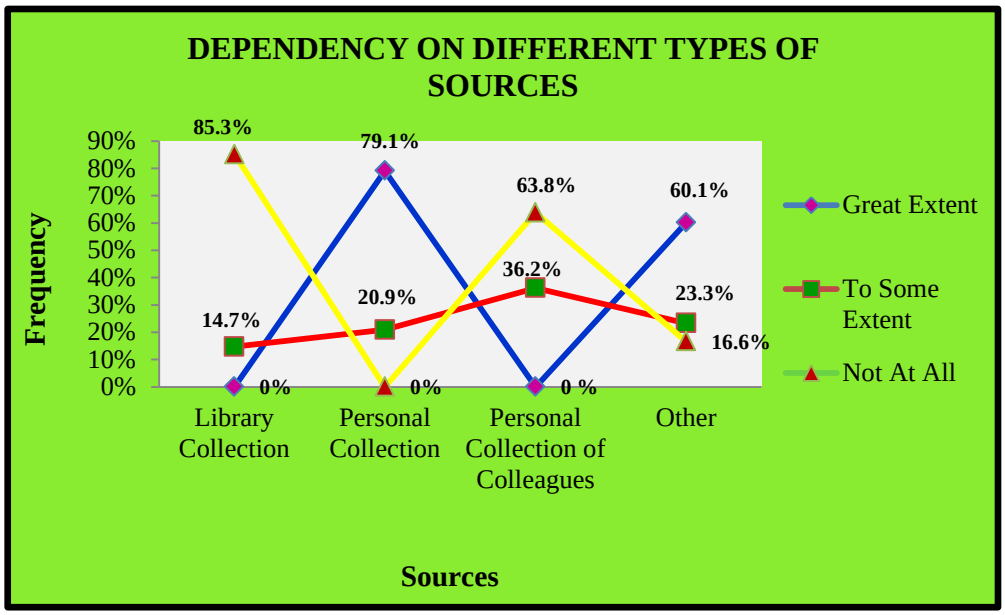

Figure 7.19: Dependency on Different Types of Sources

7.1.2.7.6 Dependency on the Mode of Collection for Accessing Information Sources for Research Work

The following table makes it clear about the respondents dependency on different mode for collecting information sources for their research works.

Table 7.25: Dependency on the Mode of Collection for Accessing Information Sources for Research Work (N=163)

Sl. No.	Mode of Collection	Great Extent		To Some Extent		Not At All		Total	
		No.	(%)	No.	(%)	No.	(%)	No.	(%)
1.	Own efforts	163	100	0	0.0	0.0	0.0	**163**	**100**
2.	Computerised Information source	124	76.1	39	23.9	0	0.0	**163**	**100**
3.	Supervisor	42	25.8	121	74.2	0	0.0	**163**	**100**
4.	Library staff	0	0.0	31	19.0	132	81	**163**	**100**
5.	Librarian	0	0.0	10	6.1	153	93.9	**163**	**100**
6.	Colleagues	96	58.9	67	41.1	0	0.0	**163**	**100**
7.	Full-time research Assistant	18	11.0	130	79.8	15	9.2	**163**	**100**
8.	Part- time research Assistant	0	0.0	22	13.5	141	86.5	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"To what extent do you depend on different mode of collection for accessing information sources for research work?"*** Answers given by the respondents are directed in the **Table 7.25** which reveals that as regard to the mode of collection like own efforts all the respondents say that they depend on *'to great extent'* for collecting their required information.

In case of computerized information sources the majority of respondents depend on *'to great extent'* i.e. 124 (76.1 %) while, only 39 (23.9 %) respondents depend on *'to some extent*' for collecting required information related to their research work.

In case of mode of collection like supervisor the respondents says that majority of them depend on *'to some extent'* i.e. with 121 (74.2 %), while only 42 (25.8 %) depend on *'to great extent'* for getting information allied to their research activities.

As regard to library staff most of the respondents replied that majority of them depend *'not at all'* i.e. with 132 (81 %), while only 31 (19 %) respondents depend on *'to some extent'* for accessing their required information.

In case of librarian also respondents says that majority of them depend *'not at all'* with 153 (93.9 %) while only 10 (6.1 %) respondents depend on *'to some extent'* for collecting their necessary information sources.

As concern to colleagues majority of the respondents replied that they depend on *'to great extent'* 96 (58.9 %), sometimes 67 (41.1 %) respondents depend on *'to some extent'* for collecting information for their research wok.

As regard to full-time research assistant the majority of respondents depend on 'to some extent' 130 (79.8 %), while very least i.e. 18 (11 %) respondents depend on '*to great extent'* for their information accessing.

Now concerning to part- time research assistant the majority of respondents says that they depend *''not at all'* i.e. with 141 (86.5 %) whereas, only with 22 (13.5 %) respondents depend on *'to some extent'* for collecting information for their research. **Figure 7.20** shows the graphical representation of the same.

Therefore, it is observed from the above that the most of the respondents depend on the mode of collection especially from their own efforts, from computerised information sources and from their colleagues for accessing the required information for their research works or related activities.

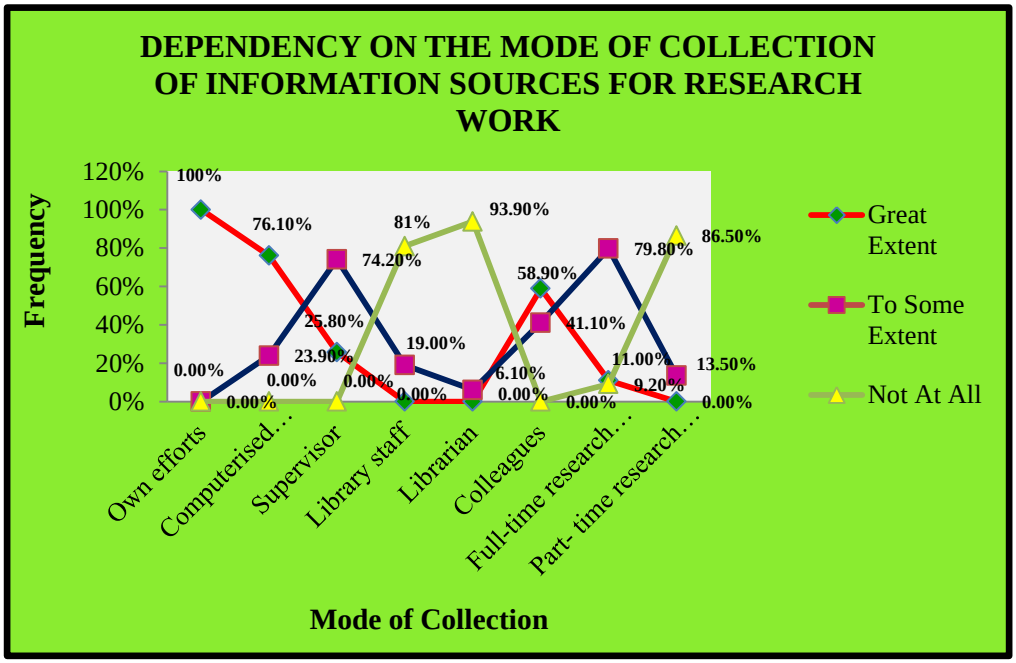

Figure 7.20: Dependency on the Mode of Collection of Information Sources for Research Work

7.1.2.7.8 Dependency on the Types of Sources for Research Work

The table below shows the extent of dependency on the types of resources for research work.

Table 7.26: Dependency on the Types of Sources for Research Work (N=163)

Sl. No.	Sources	Great Extent		To Some Extent		Not At All		Total	
		No.	(%)	No.	(%)	No.	(%)	No.	(%)
1.	Primary Sources	162	99.4	1	0.6	0	0.0	**163**	**100**
2.	Secondary Sources	66	40.5	97	59.5	0	0.0	**163**	**100**
3.	Tertiary Sources	0	0.0	89	54.6	74	45.4	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"To what extent do you depend on different types of resources for your research work?"*** Answers given by the respondents are directed in the **Table 7.26** which reveals that as regard to primary sources the majority of respondents depend on *'to great extent' i.e.* with 162 (99.4 %) whereas 1 (0.6 %) respondents depend on *'to some extent'* for research work.

In case secondary sources most of the respondents i.e. with 97 (59.5 %) depend on *'to some extent'* while only 66 (40.5 %) respondents depend on *'to great extent'* for research activities.

As concern to tertiary sources most of the respondents i.e. with 89 (54.6 %) depend on *'to some extent'*whileonly 74 (45.4 %) respondents depend on *'not at all'* for research work. **Figure 7.21** shows the graphical representation of the same.

Therefore, it is clear that most of the respondents depend mainly on primary and secondary sources for their research and allied works.

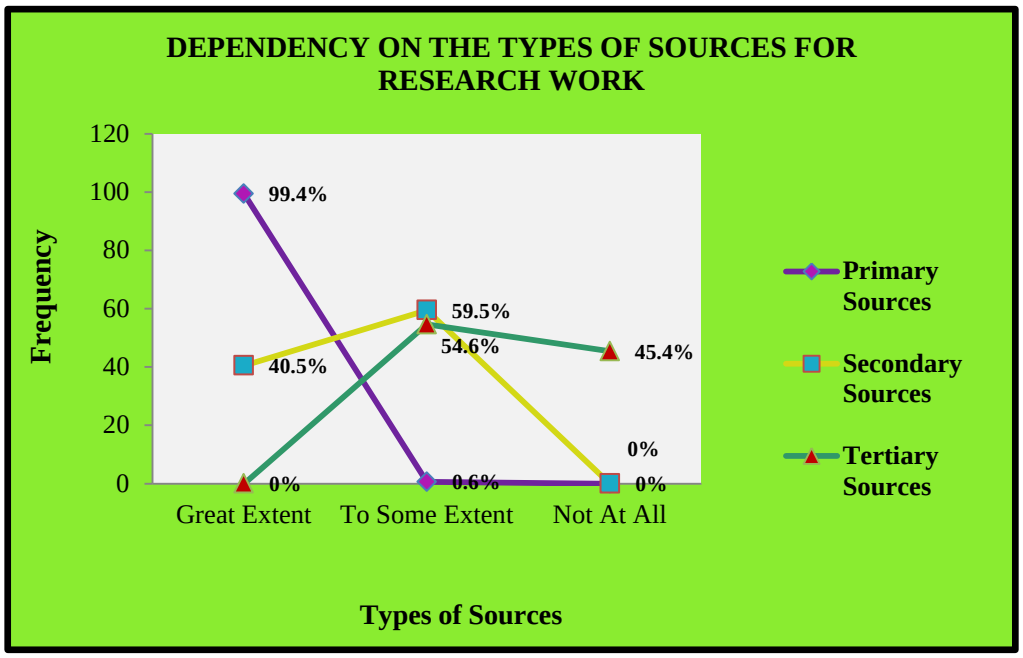

Figure 7.21: Dependency on the Types of Sources for Research Work

7.1.2.8 SECTION E: Constraints Faced by the Scientists in Using/Searching Information in Libraries

This section specifies the constraints faced by the scientists in using/searching information in libraries which includes types of difficulties that come across in accessing information, time problem of looking information sources in the library, problem of searching information because of lack of library automation, problems of finding/locating suitable sources of interest and problems of getting resources from the library.

7.1.2.8.1 Difficulties that Come Across in Accessing Information

The following table shows the different types of difficulties faced by the respondents while accessing information.

Table 7.27: Difficulties that Come Across in Accessing Information (N=163)

Sl. No.	Rank	Details	Frequency	Percentage (%)
1.	I	Lack of reading material	156	95.7
2.	II	Lack of access to all information	138	84.7
3.	III	Lack of Time	63	38.7
4.	IV	Other	56	34.4
5.	V	Lack of knowledge of information sources	25	15.3
6.	VI	Lack of knowledge in use of library services	13	8.0
		Total	**451**	**100**

Source: Computed from the survey Data

The respondents were asked ***"To what extent do you depend on different types of resources for your research work?"*** Answers given by the respondents are directed in the **Table 7.27** which reveals that 156 (95.7 %) respondents were facing problem like 'lack of reading materials' in the library as rank **one**, followed by 138 (84.7 %) respondents who found 'lack of access to all information' as rank **two**, 63 (38.7 %) respondents were facing 'time problem' as rank **three**, 56 (34.4 %) respondents facing 'other problems' like misplacement of reading sources, non-cooperation from the staff, Non-availability of adequate reading materials etc. as rank **four**, 25 (15.3 %) respondents were facing problem like 'lack of knowledge of information sources' as rank **five** and 13 (8.0 %) respondents facing problems like 'lack of knowledge in use of library services' as rank **six**. **Figure 7.22** shows the graphical representation of the same.

Therefore, it is observed that most of respondents replied that they were facing problems in the library like lack of reading materials and lack of access to all information and to some extent they were facing time problem also.

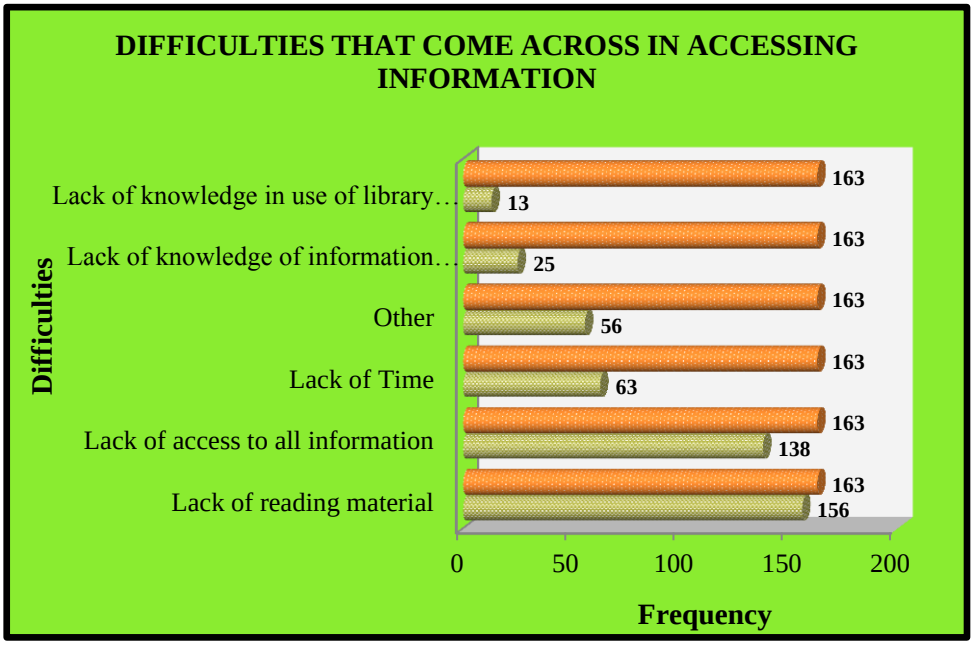

Figure 7.22: Difficulties that Come Across in Accessing Information

7.1.2.8.2 Time Problems of Looking Information Sources in the Library

The table below focuses mainly on time problem for looking information sources in the library.

Table 7.28: Time Problems of Looking Information Sources in the Library

(N=163)

Sl. No.	Details	Frequency	Percentage (%)
1.	Extremely Difficult	73	44.8
2.	Considerable Problem	61	37.4
3.	Little Problem	23	14.1
4.	No Problem	6	3.7
	Total	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"Do you have time problem in reading or looking for information in the library?"*** Answers given by the respondents are presented in the **Table 7.28** which reveals that 73 (44.8 %) respondents find time problem which is

extremely difficult for looking information sources in the library, 61 (37.4 %) respondents have considerable problem, 23 (14.1 %) respondents have little problem and only 6 (3.7 %) respondents were having no problem. **Figure 7.23** shows the graphical representation of the same.

Thus, it clearly indicated from the above that majority of the respondents saygetting time is extremely difficult to them for looking required information sources in the library.

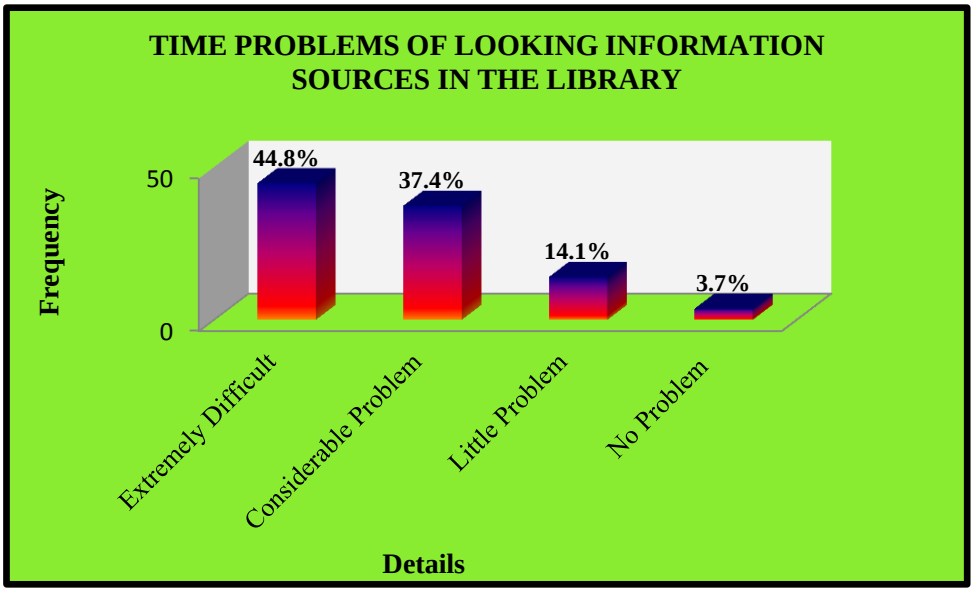

Figure 7.23: Time Problems of Looking Information Sources in the Library

7.1.2.8.3 Problem of Searching Information Because of Lack of Library Automation

The table below indicates how the respondents face problem in searching information because of lack of automation in the library.

Table 7.29: Problem of Searching Information Because of Lack of Library Automation (N=163)

Sl. No.	Details	Frequency	Percentage (%)
1.	Extremely Difficult	95	58.3
2.	Considerable Problem	68	41.7
3.	Little Problem	0	0.0
4.	No Problem	0	0.0
	Total	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"Do you face any problem while searching information because of lack of library automation?"*** Answers given by the respondents are directed in the **Table 7.29** which reveals that 95 (58.3 %) respondents found it extremely difficult, 68 (41.7 %) respondents say they have considerable problem. **Figure 7.24** shows the graphical representation of the same.

Therefore, it is clear that most of respondents responded that they found extremely difficult while searching information because of lack of automation in the library.

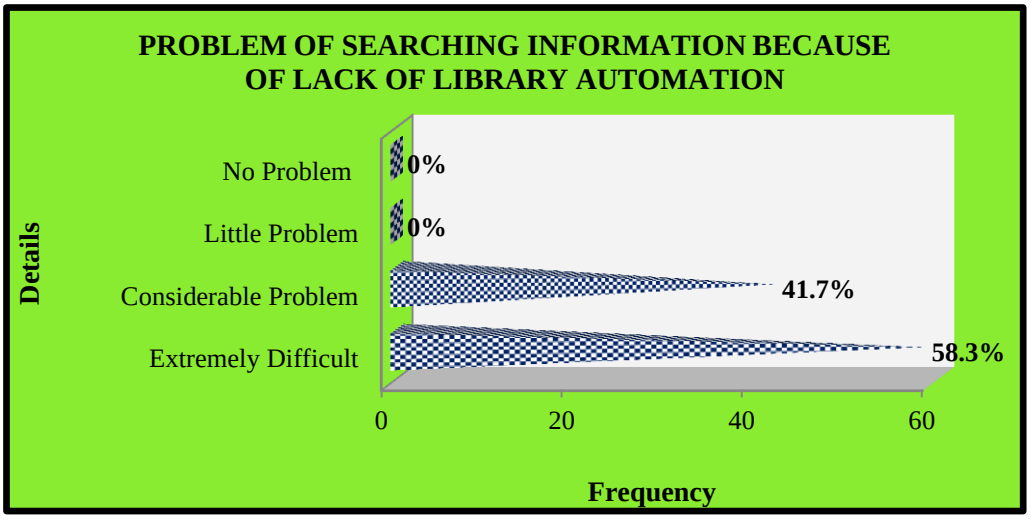

Figure 7.24: Problem of Searching Information Because of Lack of Library Automation

7.1.2.8.4 Problems of Finding/Locating Suitable Sources of Interest

The table shows the problems of finding or locating suitable sources of interest by the respondents from the library.

Table 7.30: Problems of Finding/Locating Suitable Sources of Interest (N=163)

Sl. No.	Details	Frequency	Percentage (%)
1.	Extremely Difficult	73	44.8
2.	Considerable Problem	58	35.6
3.	Little Problem	32	19.6
4.	No Problem	0	0.0
	Total	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"Do you face any problem in finding /locating suitable sources of your interest?"*** Answers given by the respondents are presented in the **Table 7.30** which reveals that 73 (44.8 %) respondents found it extremely difficult, 58 (35.6 %) respondents have considerable problem and 32 (19.6 %) respondents says they have little problem. **Figure 7.25** shows the graphical representation of the same.

Finding or locating suitable information sources is one of the important activities of information intermediaries and knowing the users response help them to develop the better systems approach to information retrieval and dissemination. Thus, it is observed from the above table that most of the respondents say that they found extremely difficult in finding or locating information in the library.

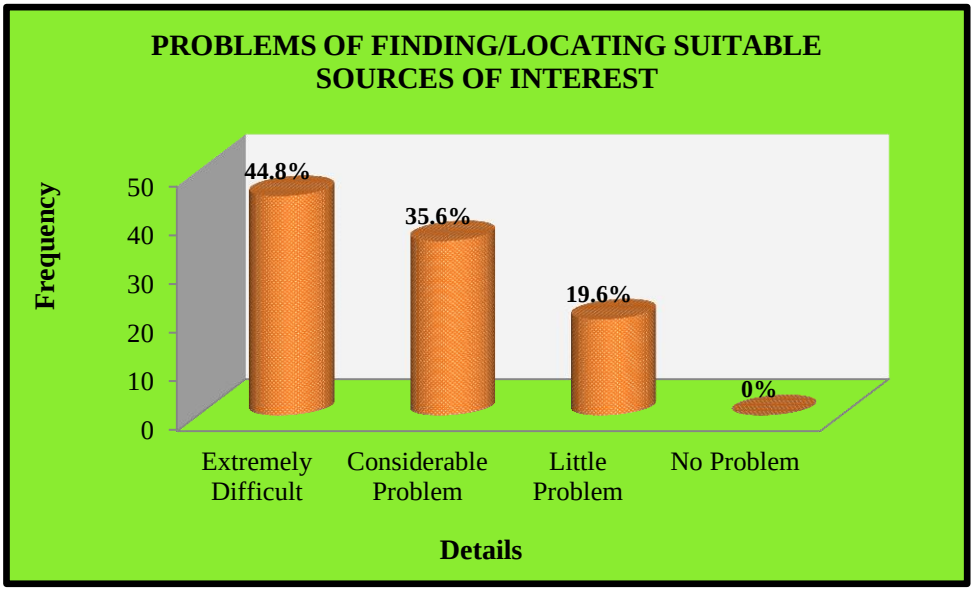

Figure 7.25: Problems of Finding/Locating Suitable Sources of Interest

7.1.2.9 Section F: Suggestions/Remedies which may help the Scientists to Use the Library in an Efficient Way

This section clearly specifies the suggestions or remedies which may help the scientists to use the library in an efficient way which includes ideal timing of the library, ways or techniques the scientists should follow while referring the library, the ideal numbers of books to be issued to the users, the scientists were asked should reference materials be issued to the users and lastly some suggestion for the better and efficient use of the library.

7.1.2.9.1 Ideal Timing of the Library

The table below shows the ideal timing of the library which mostly preferred by the respondents.

Table 7.31: Ideal Timing of the Library (N=163)

Sl. No.	Timing	Frequency	Percentage (%)
1.	Office Time	65	39.9
2.	9-12 (Prior to Office Time)	38	23.3
3.	16- 18 (After Office Time)	46	28.2
4.	Every	14	8.6
	Total	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"What should be the ideal timing of your library?"*** Answers given by the respondents are tabulated in the **Table 7.31** which reveals that 65 (39.9 %) respondents say that the ideal timing should be in the office time, followed by 46 (28.2 %) respondents who preferred the ideal timing should be in the 16- 18 (After Office Time), 38 (23.3 %) respondents preferred the timing in between 9-12 (Prior to Office Time) and 14 (8.6 %) respondents say the library should be open at all time. . **Figure 7.26** shows the graphical representation of the same.

Thus, it is clear that the most of the respondents preferred the ideal timing of the library should be in office time which is most favourable to them.

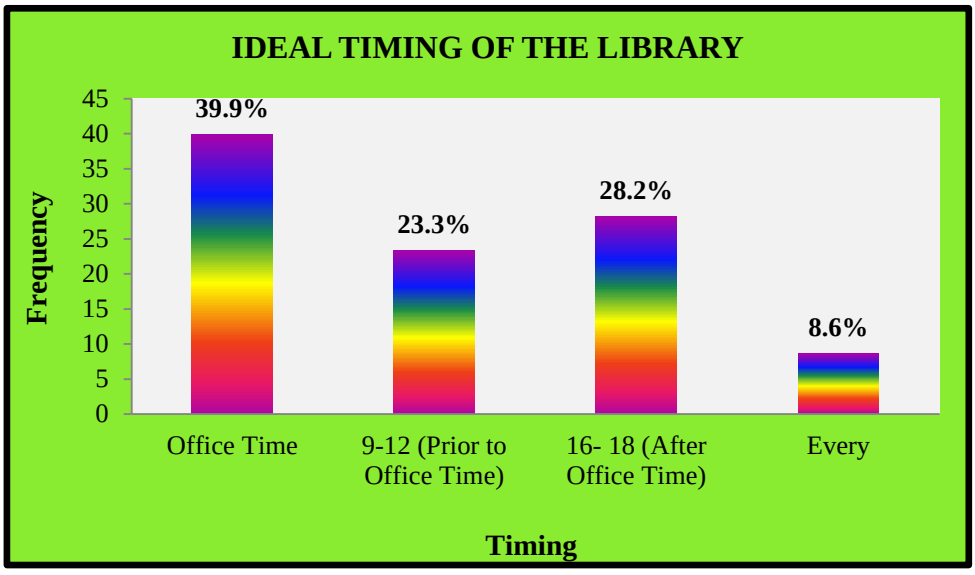

Figure 7.26: Ideal Timing of the Library

7.1.2.9.2 Ideal Number of Books to be Issued to the Users

The following table indicates the ideal number of books to be issued to the respondents.

Table 7.32: Ideal Number of Books to be Issued to the Users

(N=163)

Sl. No.	No. of Books	Frequency	Percentage (%)
1.	1	0	0.0
2.	2	8	4.9
3.	3	23	14.1
4.	4	69	42.3
5.	5	41	25.2
6.	6	18	11.0
7.	7	4	2.5
8.	8	0	0.0
	Total	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"Please mention the ideal number of books to be issued to the users?"*** Answers given by the respondents are directed in the **Table 7.32** which reveals that 69 (42.3 %) respondents say that the ideal number of books to be issued should be '4' books, 41 (25.2 %) respondents have opinion of '5' books, 23 (14.1 %) respondents say '3' books, 18 (11 %) respondents say '6'books, 8 (4.9 %) respondents say only '2' books and only 4 (2.5 %) respondents say '7' books. **Figure 7.27** shows the graphical representation of the same.

Therefore, the majority of respondents expressed the ideal number of books issued should be 4 books.

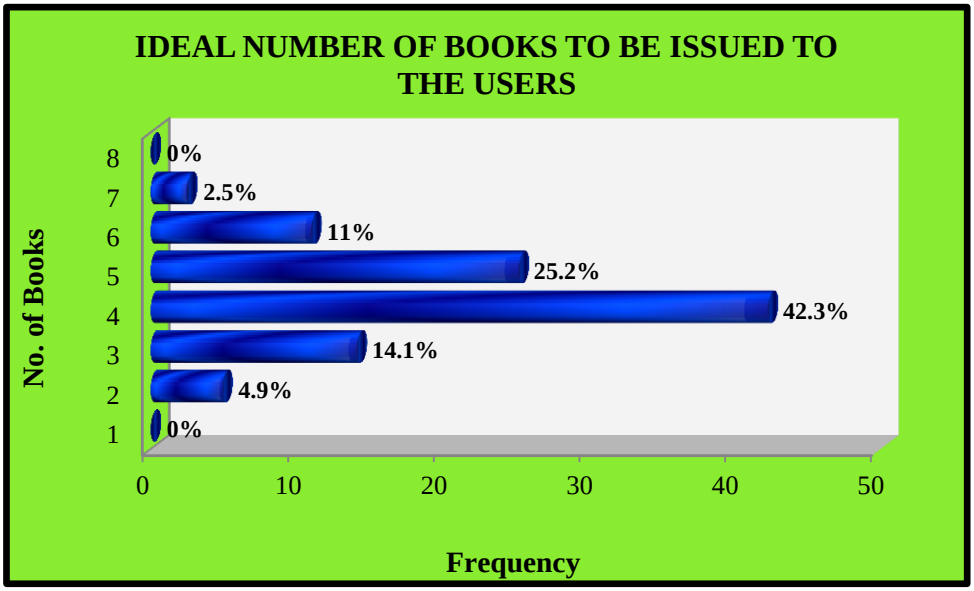

Figure 7.27: Ideal Number of Books to be Issued to the Users

7.1.2.9.3 Reference Material Issued to the Users

The table below shows the responses given by the respondents that how much they agree about the reference materials should be issued to the users or not.

Table 7.33: Reference Material Issued to the Users

(N=163)

Sl. No.	Preference	Frequency	Percentage (%)
1.	Strongly Agree	55	33.7
2.	Agree	84	51.5
3.	Strongly Disagree	24	14.7
	Total	**163**	**100**

Source: Computed from the survey Data

The respondents were asked ***"Should the reference materials be issued to the users?"*** Answers given by the respondents are directed in the **Table 7.33** which reveals that 84 (51.5 %) respondents were agree that the reference material should be issued to the users, 55 (33.7 %) respondents were strongly agree and 24 (4.7 %) respondents strongly

disagreed against the fact that the reference materials to be issued to the users. **Figure 7.28** shows the graphical representation of the same.

Therefore, the most of the respondents have the opinion that the reference materials should be issued to the users as it very useful them for their research works.

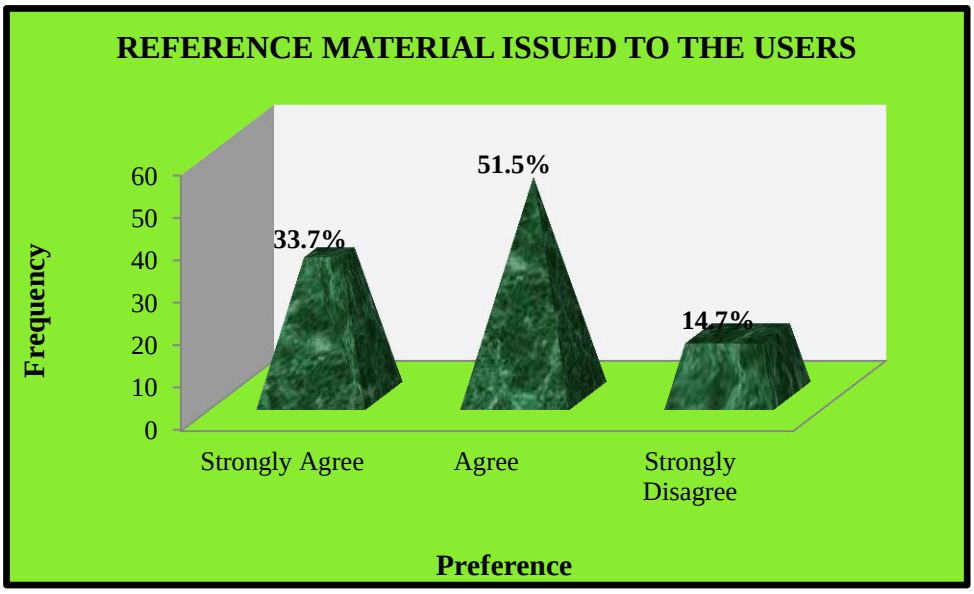

Figure 7.28: Reference Material Issued to the Users

7.1.2.9.4 Suggestions from the Scientists

Of the 163 scientists under study, have their own suggestions in the direction of having a new digital environment through which they can seek and access information to meet their needs. They suggested the following points in this concern which is shown in the table below:

Table 7.34: Suggestion from the Scientists

Sl. No.	Rank	Area of Suggestions	Frequency	Percentage (%)
1.	I	Faster Internet Service	153	93.9
2.	II	Developing library collection as per user needs	148	90.8
3.	III	Other suggestions	132	81.0
4.	IV	Introducing innovative practices in library services	112	68.7
5.	V	User education programme by the library	94	57.7
6.	VI	Resource sharing facilities	79	48.5

Source: Computed from the survey Data

Table 7.34 shows that 153 (93.9 %) respondents suggest to have 'fast internet facility' in the library as rank **one**, 148 (90.8 %) respondents suggest to 'develop the library collection as per user's needs' as rank **two**, 132 (81.0 %) respondents suggest'other types of suggestions' which are mentioned below as rank **three**, 112 (68.7 %) respondents gave suggestion to 'introduce innovative practices in the library services' as rank **four**, 94 (57.7 %) respondents say to conduct 'user education programme by the library'as rank **five**and 79 (48.5 %) respondents suggest to improve the 'resource sharing' facilities of the libraryas rank **six**. **Figure 7.29** shows the graphical representation of the same.

The sum of other suggestions made by the scientists is summarized as below:

- Need for emerging proper special library system.
- Need to appoint library professionals in the library.
- Providing the facility of subscribing more research journals in the library.
- The need of adopting a mechanism to make library services that benefit at the entry of the users.
- ICAR Institutes and Centres Library need to be fully computerized.

- The JCCC @ CERA consortium should be reached to the each and every library of all ICAR Institutes and Centres of northeast region of India.
- Workshops/seminars/conferences concentrating on issues related to the library users are required to conduct in the institutes and centres of ICAR.

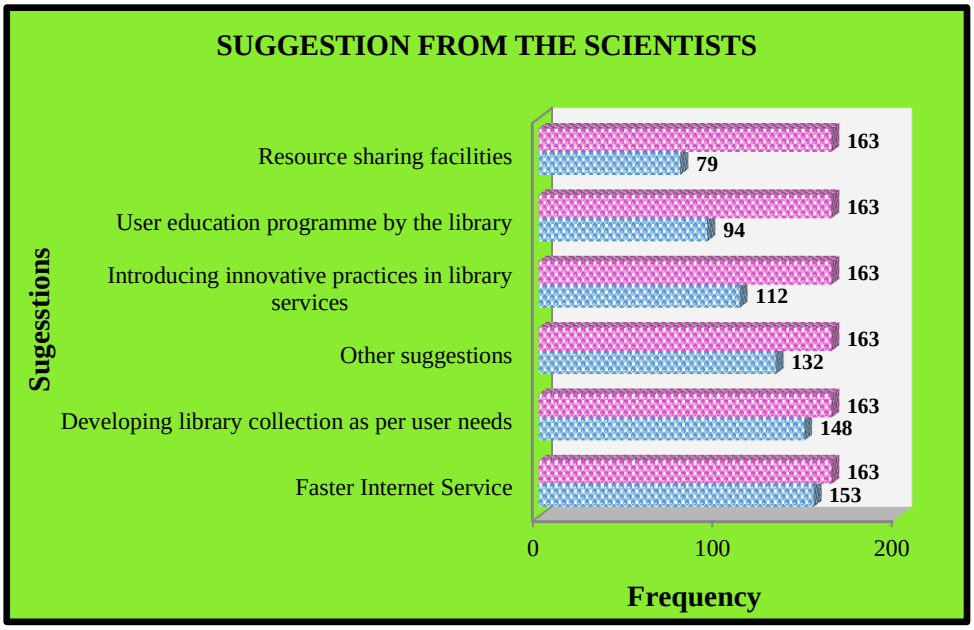

Figure 7.29: Suggestion from the Scientists

7.2 CONCLUSION

The above analysis based on the data collected through questionnaires administered to librarians and representative sample of users from the ICAR institutes and centres of Northeast Region, semi-structured interviews and observations of the libraries and users (Scientists) under study revealed the present state of affairs of ICAR institutes and centres of Northeast India. The survey has provided a useful summary of current state-of-the-art information needs and information seeking behaviour of agricultural scientists working in the ICAR institutes and centres of northeast part of India. The analysis also provided useful inputs for the up gradation of a library collection and status of library which may helpful

for the scientists to seek information easily and update themselves to compete with this new digital era.

Having discussed the current status libraries and the information seeking behaviour of ICAR institute and centre in Northeast in terms of library collection, library services, budget provisions, library automation, the library visit pattern, purpose of library visit, the pattern of seeking information and different types of problem along with the comments and suggestion of users for the development of the libraries exclusively for the better future of the institutes and centres of ICAR in this chapter. Major findings of the study along with certain suggestions for the improvement of the existing status of institute and centre libraries of ICAR are presented in the next chapter (**Chapter 8**).