CHAPTER 5

Data Analysis and Interpretations

Data analysis leads to the analysis of raw data in a scientific manner; which is also known as statistical analysis. Statistic is thus the set of procedure for classify, computing, gathering, measuring, describing, analyzing and interpreting systematically acquired quantitative data. Hence, the following discussion gives an analytical approach to the collected data.

5.1 Pilot Study

After the identification of the probable problems faced by the scientific community, a small pilot study was undertaken in order to test the face validity of the questionnaire. In this case, 30 numbers of questionnaires were undertaken. This sample was further divided into three groups of 10 numbers of questionnaires for each category such as student category, research scholar category and faculty member category each. Further, scientific community belong to Assam University was taken into consideration for pilot study. The entire respondent's interview was undertaken and asked to fill the questionnaire and note any concerns or difficulties.

The results were generally favorable with the requirement of little clearance with few questions and minor concern being the overall length of the questionnaire. The questions were later be clarified for the main survey. But, reducing the length of the questionnaire, it was not taken into consideration as its leads to confusing or un-clear results. It was therefore decided that the same numbers of questionnaire should remain in its entirety for the study.

The transcript of the pilot interview was not included in the study as little modification was taken into consideration as per the information provided by the respondents for clarification keeping overall length of the questionnaire as same.

5.2 Qualitative Interpretation

In this chapter, qualitative interpretation of data is carried out from received questionnaires which have been collected during January, 2014 to September, 2014 from four different universities (two state universities and two central universities) of Assam under the present study.

On the basis of filled up questionnaire, the data has been analyzed and tabulated in this chapter. All the results have been shown in tabular and/ or graphical representation using IBM-SPSS 20 software and graphical representations have been made by using MS-Excel 2010 for designing.

The results of the study have been grouped in to the following sections as shown below:

a) Distribution of Total Questionnaire and Responses Received from the scientific community;

b) Personal Details/ Characteristics of the scientific community;

c) Library visit and library usage pattern of the scientific community;

d) Information searching pattern of the scientific community;

e) Internet literacy and e-resource search strategies adopted by the respondents;

f) Problems faced and suggestions provided by scientific community;

g) Analysis of received questionnaires from the University Librarians.

Data analysis and interpretation of this study has divided into Section- A, B, C, D, E, F and G for generating more accurate results.

Section- A

5.3 Distribution of Questionnaire to Scientific Community

5.3.1 Distribution of Total Questionnaire and Response Received from Scientific Community under the Study

There are total 600 numbers of questionnaires that have been distributed among the scientific community of four different government universities of Assam which consists of students, research scholar and faculty members, out of which the respondent's feedback were collected for this present study. Out of total 600 numbers of questionnaire distributed, only 534 duly filled in questionnaires were received during the said period. However, 13 questionnaires were rejected due to incompleteness in many aspects. These leads to make the number of respondents 521; which has shown in Table: 5.1.

Thus, out of total 600 numbers of questionnaire distributed to the respondents under the study; overall response rate is 521 (86.6%). The response rate is comparatively good as the researcher has pursued and taken lots of efforts to collect maximum responses from the respondents.

Table: 5.1 Number of response received from Scientific Community (N=600)

	Distributed	Received	Percentage within university
TU	150	137	91.3
DU	150	134	89.3
AU	150	132	88.0
GU	150	118	78.6
Total	**600**	**521**	**86.8**

(Source: Computed from returned questionnaires)

Table: 5.1 shows that out of 150 numbers of questionnaires, which have been distributed to each university separately, the responses received from Tezpur University (TU) was highest (137; 91.3%) which is followed by Dibrugarh University (DU) (134; 89.3%); Assam University (AU) (132; 88.0%) and Gauhati University (GU) (118; 78.6%) respectively.

5.3.2 University/ Category Wise Questionnaire Received from Scientific Community

The study consists of three distinct categories of library users; which comprises of students, research scholars and faculty members. As per sample design, it was decided to distribute 150 (25%) questionnaires to each university which comprises 50 (33.3%) numbers of "Student", 50 (33.3%) numbers of "Research Scholar" and 50 (33.3%) numbers of "Faculty Member" respectively.

Table: 5.2 Number of Response Received from Each University/ Category (N=521)

			University				**Total**
			AU	*TU*	*GU*	*DU*	
Category	Student	**Number**	**49**	**50**	**45**	**47**	**191**
		% within Category	25.7%	26.2%	23.6%	24.6%	100.0%
		% within University	37.1%	36.5%	38.1%	35.1%	36.7%
		% of Total	9.4%	9.6%	8.6%	9.0%	36.7%
	Research Scholar	**Number**	**44**	**41**	**39**	**44**	**168**
		% within Category	26.2%	24.4%	23.2%	26.2%	100.0%
		% within University	33.3%	29.9%	33.1%	32.8%	32.2%
		% of Total	8.4%	7.9%	7.5%	8.4%	32.2%
	Faculty	**Number**	**39**	**46**	**34**	**43**	**162**
		% within Category	24.1%	28.4%	21.0%	26.5%	100.0%
		% within University	29.5%	33.6%	28.8%	32.1%	31.1%
		% of Total	7.5%	8.8%	6.5%	8.3%	31.1%
Total		**Number**	**132**	**137**	**118**	**134**	**521**
		% within Category	25.3%	26.3%	22.6%	25.7%	100.0%
		% within University	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	25.3%	26.3%	22.6%	25.7%	100.0%

(Source: Computed from returned questionnaires)

The survey result as shown in Table: 5.2, reveals the university wise and category wise responses received from the respondents of each university. The category wise responses have shown that majority of respondents belongs to “Student” category (191; 36.7%) which is followed by “Research Scholar” category (168; 32.2%) whereas 162 (31.1%) numbers of respondents belong to “Faculty Member” category.

Further, Table: 5.2, also has shown that responses received form individual university with “% within Category”, “% within University” and “% of Total”. Assam university consists of 49 respondents belong to “Student” category [25.7% within Student Category, 37.1% within Assam University and 9.4% within Overall/ “of Total”] whereas 44 respondents belong to “Research Scholar” category [26.2% within Research scholar Category, 33.3% within Assam University and 8.4% within Overall/ “of Total”] and 39 respondents belong to “Faculty Member” category [24.1% within Faculty Members Category, 29.5% within Assam University and 7.5% within Overall/ “of Total”].

The responses from Tezpur university consists of 50 respondents belong to “Student” category [26.2% within Student Category, 36.5% within Tezpur University and 9.6% within “Overall”/ “of Total”], and 41 respondents belong to “Research Scholar” category [24.4% within Research scholar Category, 29.9% within Tezpur University and 7.9% within Overall/ “of Total”], whereas 46 respondents belong to “Faculty Member” category [28.4% within Faculty Members Category, 33.6% within Tezpur University and 8.8% within Overall/ “of Total”].

The responses from Gauhati university consists of 45 respondents belong to “Student” category [23.6% within Student Category, 38.1% within Gauhati University and 8.6% within “Overall”/ “of Total”], followed by 39 respondents belong to “Research Scholar” category [23.2% within Research scholar Category, 33.1% within Gauhati

University and 7.5% within Overall/ "of Total"], whereas 34 respondents belong to "Faculty Member" category [i.e. 21.0% within Faculty Members Category, 28.8% within Gauhati University and 6.5% within Overall/ "of Total"].

The responses from Dibrugarh university consists of 47 respondents belong to "Student" category [24.6% within Student Category, 35.1% within Dibrugarh University and 9.0% within "Overall"/ "of Total"], followed by 44 respondents belong to "Research Scholar" category [26.2% within Research scholar Category, 32.8% within Dibrugarh University and 8.4% within Overall/ "of Total"], whereas 43 respondents belong to "Faculty Member" category [26.5% within Faculty Members Category, 32.1% within Dibrugarh University and 8.3% within Overall/ "of Total"].

Section- B

5.4 Personal Characteristics/ Details of the Scientific Community (Background Information)

5.4.1 Educational Qualification-Wise Distribution of Scientific Community

Here, for faculty members, only individual achieved degree has been taken under consideration. For research scholar, they have been asked to mark as par they have enrolled in their respective university such as M. Phil., Ph. D., JRF, SRF etc. Further, for those respondents who are faculty member as well as research scholar, they have been considered as faculty members for this study. For that reason only "Faculty member" questionnaire has been distrusted to them.

Table: 5.3; has shown that within student category majority student 135 (70.7%) enrolled themselves in "Post Graduate" study whereas 56 (29.3%) enrolled themselves in

"Under Graduate" study. Further, within research scholar category majority 83 (49.4%) respondents enrolled themselves in "Ph. D." research study whereas 34 (20.2%) respondents enrolled themselves in "M. Phil" research study, which is followed by 31 (18.5%) respondents enrolled themselves in "JRF" research and 20 (11.9%) respondents enrolled themselves in "SRF" research. Moreover, within faculty member category majority 97 (59.9%) respondents are "Ph. D." qualified whereas 42 (25.9%) respondents are "M. Phil" qualified which is followed by 23 (14.2%) respondents are "post graduate" degree holder in their respective subject.

It is also observed from the study that few faculty members have their highest qualification up to PG degree only; this is due to those faculty members belong to the department of engineering with M. Tech. degree holders.

Table: 5.3 Educational Qualification-Wise Distribution of Respondents (N=521)

			Category			Total
			Student	Research Scholar	Faculty	
Educational Qualification	UG	Count	56	0	0	56
		% within Category	29.3%	0.0%	0.0%	10.7%
	PG	Count	135	0	23	158
		% within Category	70.7%	0.0%	14.2%	30.3%
	JRF	Count	0	31	0	31
		% within Category	0.0%	18.5%	0.0%	6.0%
	SRF	Count	0	20	0	20
		% within Category	0.0%	11.9%	0.0%	3.8%
	M. Phil	Count	0	34	42	76
		% within Category	0.0%	20.2%	25.9%	14.6%
	Ph. D	Count	0	83	97	180
		% within Category	0.0%	49.4%	59.9%	34.5%
Total		Count	191	168	162	521
		% within Category	100.0%	100.0%	100.0%	100.0%

(Source: Computed from returned questionnaires)

5.4.2 Gender-Wise Distribution of Scientific Community

In this present study gender-wise distribution has shown in Table: 5.4. From the gender wise distribution, it is clear that almost equal percentage of responses were received from male 279 (53.6%) and female 242 (46.4%) respondents. University wise received response has shown that from Tezpur University 74 (54%) respondents are male and 63 (46%) respondents are female whereas in Dibrugarh University 74 (55%) respondents are male and 60 (45%) respondents are female. Moreover, the study has shown that in Assam University 70 (53%) respondents are female and 62 (47%) respondents are male whereas in Gauhati University 69 (59%) respondents are male and 49 (41%) respondents are female.

Table: 5.4 Number of response received Gender wise (N=521)

			Gender		Total
			Male	Female	
University	AU	Count	62	70	132
		% within University	47.0%	53.0%	100.0%
		% within Gender	22.2%	28.9%	25.3%
		% of Total	11.9%	13.4%	25.3%
	TU	Count	74	63	137
		% within University	54.0%	46.0%	100.0%
		% within Gender	26.5%	26.0%	26.3%
		% of Total	14.2%	12.1%	26.3%
	GU	Count	69	49	118
		% within University	58.5%	41.5%	100.0%
		% within Gender	24.7%	20.2%	22.6%
		% of Total	13.2%	9.4%	22.6%
	DU	Count	74	60	134
		% within University	55.2%	44.8%	100.0%
		% within Gender	26.5%	24.8%	25.7%
		% of Total	14.2%	11.5%	25.7%
Total		Count	279	242	521
		% within University	53.6%	46.4%	100.0%
		% within Gender	100.0%	100.0%	100.0%
		% of Total	53.6%	46.4%	100.0%

(Source: Computed from returned questionnaires)

Again, numbers of female respondents are maximum in Assam University (53% within university or 13.4% within all total) as compared to Tezpur University (46% within university or 12.1% within all total), Dibrugarh University (44.8% within university or 11.5% within all total), and Gauhati University (41.4% within university or 9.5% within all total); which is very interesting whereas numbers of male candidates are more in Gauhati University (58.5% within university or 13.2% within all total) among all other universities.

5.4.3 Age-Wise Distribution of Scientific Community

The age of the respondents is divided into eight groups and the received response has shown in Figure: 5.1. Out of 521 respondents, 134 (25.7%) belong to the age group of "21-25" within which 103 (76.9%) and 31 (23.1%) respondents are students and research scholars respectively; which is followed by 99 (19.0%) respondents belong to the age group of "31-35" within which 60 (60.6%) and 39 (39.4%) respondents are research scholars and faculty members respectively; whereas 83 (15.9%) respondents are at the age of "26-30" within which 60 (72.3%), 19 (22.9%) and 4 (4.8%) respondents are research scholars, faculty members and students respectively.

Further, 69 (13.2%) respondents belong to the age group of "less than 21" within which all are students and 60 (11.5%) respondents belong to the age group of "36-40" within which 43 (71.7%) and 17 (28.3%) respondents are research scholars and faculty members respectively. Moreover, 42 (8.1%), 23 (4.4%) and 11 (2.1%) respondents belong to the age group of "46-50", "51-Above" and "41-45" respectively within which all are faculty members.

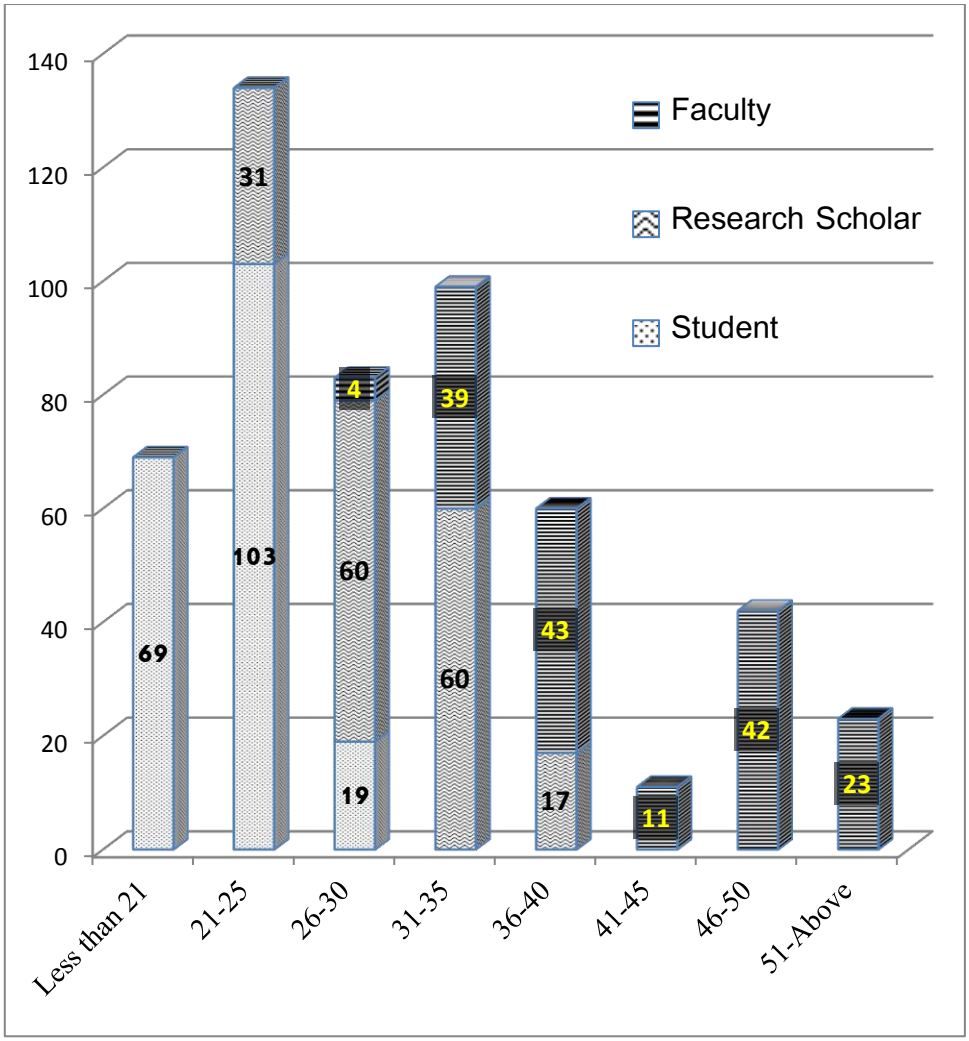

Figure: 5.1 Age-Wise Distributions of Respondents

Broadly, if we classify the respondents, most of them fall under the category "below 21-25 years"; out of which majority belong to "student's category". Further classification has shown that respondents belong to "26-35 years"; out of which majority belong to "research scholar's category". Again, rest respondents belong to "36 years above category"; out of which majority belong to "faculty members". Thus, majority respondents belong to younger age group which is due to large numbers of students and research scholar's precipitation in this study.

5.4.4 Designation -Wise Distribution of Faculty Members

Out of 521 respondents, 162 (31.1%) respondents belong to faculty members. Figure: 5.5 have shown that out of 162 faculty members 87 (53.7%) belong to assistant professor, which is followed by 49 (30.2%) belong to associate professor whereas 26 (16.1%) belong to professor categories.

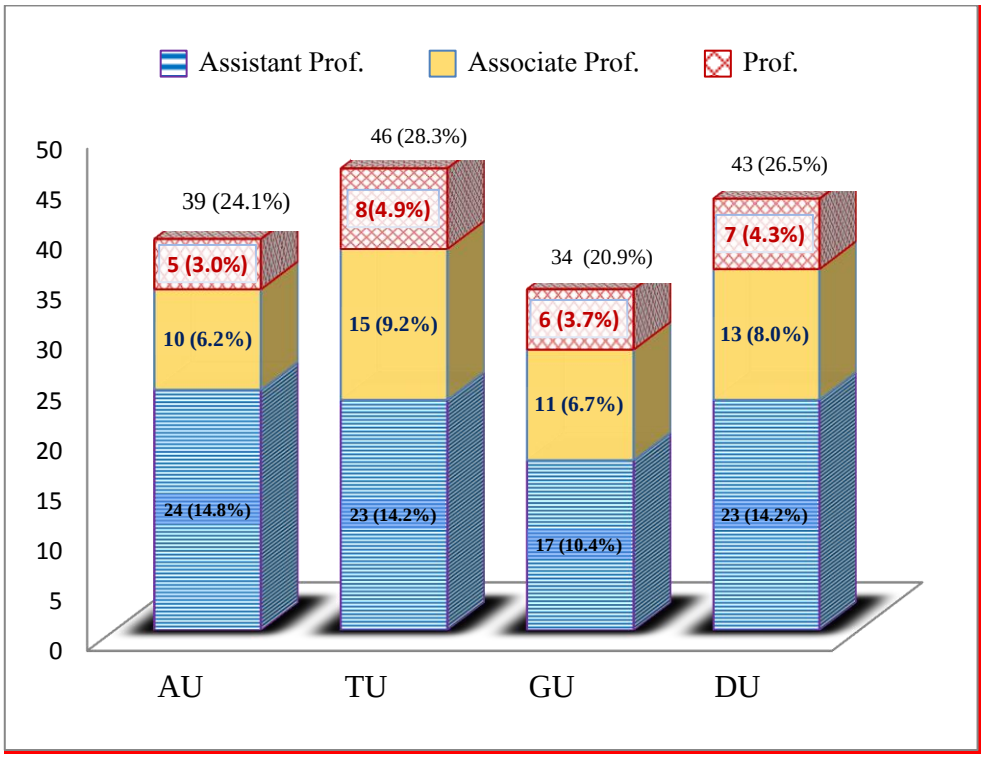

Figure: 5.2 Designations -Wise Distribution of Faculty Members

Again, out of 162 faculty members, 39 (24.1%) respondents belong to "Assam University" within which 5 (3.0%), 10 (6.2%) and 24 (14.8%) respondents are "Professor", "Associate Professor" and "Assistant Professor" respectively; which is followed by 46 (28.3%) faculty members belong to "Tezpur University" within which 8(4.9%), 15 (9.2%) and 23 (14.2%) respondents are "Professor", "Associate Professor" and "Assistant Professor" respectively; whereas 34 (20.9%) faculty members belong to "Gawahati University" within which 6 (3.7%), 11 (6.7%) and 17 (10.4%) respondents are "Professor", "Associate Professor" and "Assistant Professor" respectively and 43

(26.5%) faculty members belong to “Dibrugarh University” within which 7 (4.3%), 13 (8.0%) and 23 (14.2%) respondents are “Professor”, “Associate Professor” and “Assistant Professor” respectively.

5.4.5 Income /Family Income Wise Distribution of Scientific Community

In this study, income of the faculty members are taken into consideration and if the respondents fall under student or research scholar, then his/her family income has been taken into consideration in rupees per month. The responses received have shown in Figure: 5.3.

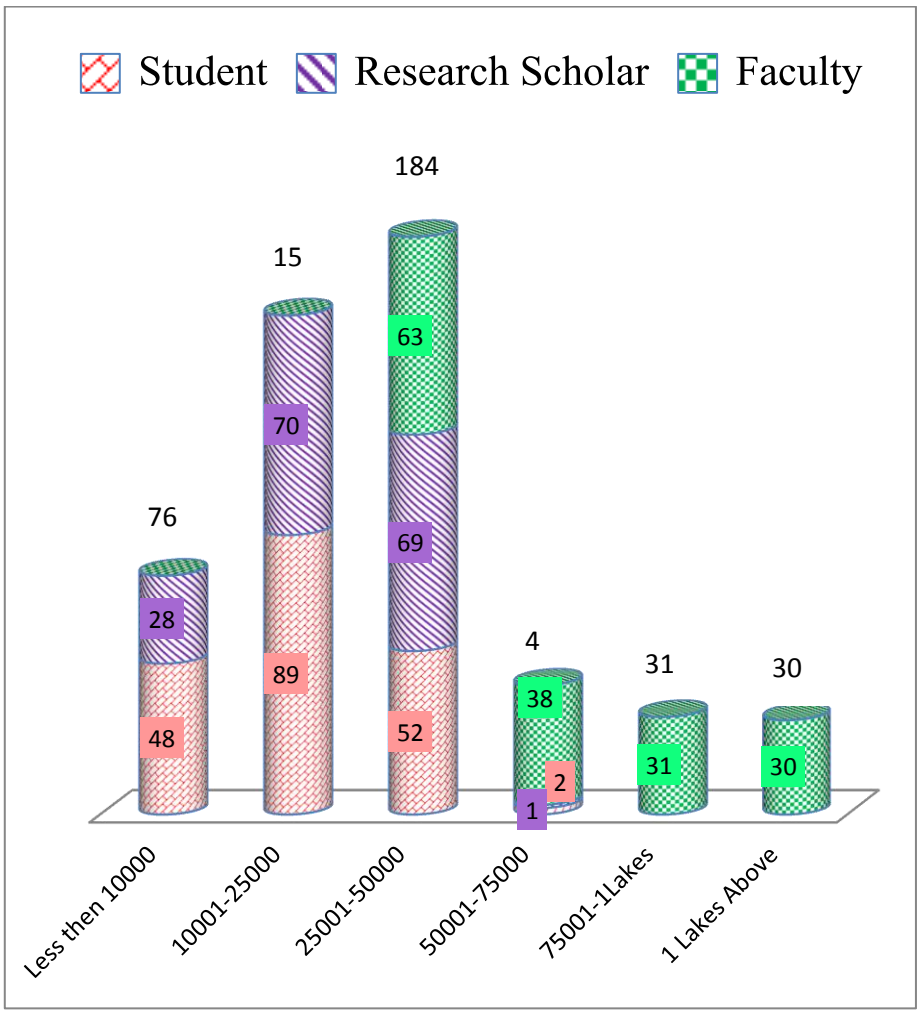

Figure: 5.3 Income /Family Income Wise Distribution

The majority of the respondents or respondent's family income (184; 35.3%) belong to the range of "25,001-50,000" rupees within which 69 (37.5%) research scholar, 63 (34.2%) faculty members and 52 (28.3%) students, which is followed by the respondents (159; 30.5%) belong to the income group range of "10,001-25,000" rupees within which 89 (55.9%) students and 70 (44.1%) research scholars; whereas 76 (14.5%) respondents belong to the range of "less than 10,000" rupees within which 48 (63.1%) students and 28 (36.9%) research scholars. Further, 41 (7.8%) respondents belong to the range of "50,001-75,000" rupees within which 38 (92.6%) faculty members, 2 (4.8%) students and 1 (2.4%) research scholar. Again, within remaining respondents; 31 (5.9%) and 30 (5.7%) belong to the range of "75,001-1 lakhs" and "1 lakhs and above" rupees respectively and all of them belong to faculty members.

Thus, it is evident from the survey finding that the income group from 25001 to 1 lakh and above belongs to faculty members whereas students and research scholars belong to comparatively lesser income groups from less than 10000 to 50000 rupees; which reveals that the family income of students and research scholar is below 50000 rupees per month.

5.4.6 Common/ Personal Characteristic of Scientific Community

Here the respondents have been asked to rate themselves as they feel their personal character in the present time. Here ten parameters have been given to respondents and they are asked to rate these parameter from 1 to 5; where 1 stands for "Extremely Inaccurate"; 2 stands for "Slightly Inaccurate"; 3 stands for "Neither Inaccurate nor Accurate"; 4 stands for "Slightly Accurate" and 5 stands for "Extremely Accurate". The Table: 5.5 has shown that the responses given by all 521 respondents by

rating their personal characteristic and evaluating the responses as par median (Mdn) and Inter-Quartile Range (IQR) value.

Table: 5.5 Respondents Common Characteristic/ Behavioral Role

(N=521 Each)

	1	2	3	4	5	NR	MD	IQR
Cold	15	63	89	**232**	122	23	**4**	1
Creative	5	28	67	**225**	196	22	**4**	1
Kind	23	31	134	**210**	123	21	**4**	1
Bold	8	15	99	**241**	158	22	**4**	2
Practical	6	44	126	127	**218**	21	**4**	2
Systematic	13	27	75	190	**216**	24	**4**	2
Disorganized	**230**	182	87	22	0	22	**2**	1
Careless	**215**	186	78	39	3	21	**2**	1
Complex	**284**	158	35	43	1	22	**1**	1
Philosophical	31	123	131	**172**	64	5	**3**	2

(Source: Computed from returned questionnaires)

[Where, 1= Extremely Inaccurate;

2 = Slightly Inaccurate;

3 = Neither Inaccurate nor Accurate;

4 = Slightly Accurate;

5= Extremely Accurate;

NR= No Response;

MD= Median;

IQR= Inter-Quartile Range.]

Thus, most of the respondents seem to believe themself as slightly cold, slightly creative and slightly kind person in nature (where, Mdn= 4, IQR= 1). Further, majority of the respondents also seem to believe themself as slightly practical and slightly systematic in nature though some respondents also have opposite opinion (where, Mdn= 4, IQR= 2). While asking about the characteristic "Bold", the opinion of the respondents seem to be little polarized, though majority of the respondents seem to believe themself as slightly bold person (where, Mdn= 4, IQR= 2).

Again; most of the respondents slightly seem to believe that they are not disorganized or careless in nature (where, Mdn= 2, IQR= 1). Further, majority of the respondents seem to believe extremely that they are not complex personality in nature (where, Mdn= 1, IQR= 1).

But, while asking about the characteristic "Philosophical"; the opinion of the respondents seem to be more polarized, some respondents 154 (29.5%) seem to believe themself as not philosophical in nature whereas other respondents 236 (45.2%) seem to believe themself as philosophical in nature (where, Mdn=3, IQR=2).

Thus, finding of the study reveals that respondents belong to scientific community, generally think themselves as cold, creative and kind person. Further, they also feel themselves as slightly systematic and bold in nature. The study also shows that the respondents do not feel themselves as disorganized and complex in nature. But, the respondents are found to be confused while rating with philosophical characteristic.

Section- C

5.5 Library Visit and Library Usage Pattern of Scientific Community

5.5.1 Central/ Dept. Library Visit by Scientific Community

It is found that all the respondents (i.e. 100%) used to visit their respective central or departmental library of their own university for accessing their required information.

5.5.2 Frequency of Library Visit by Scientific Community

The frequency of library visits by the scientific community library users are shown in the Figure: 5.4.

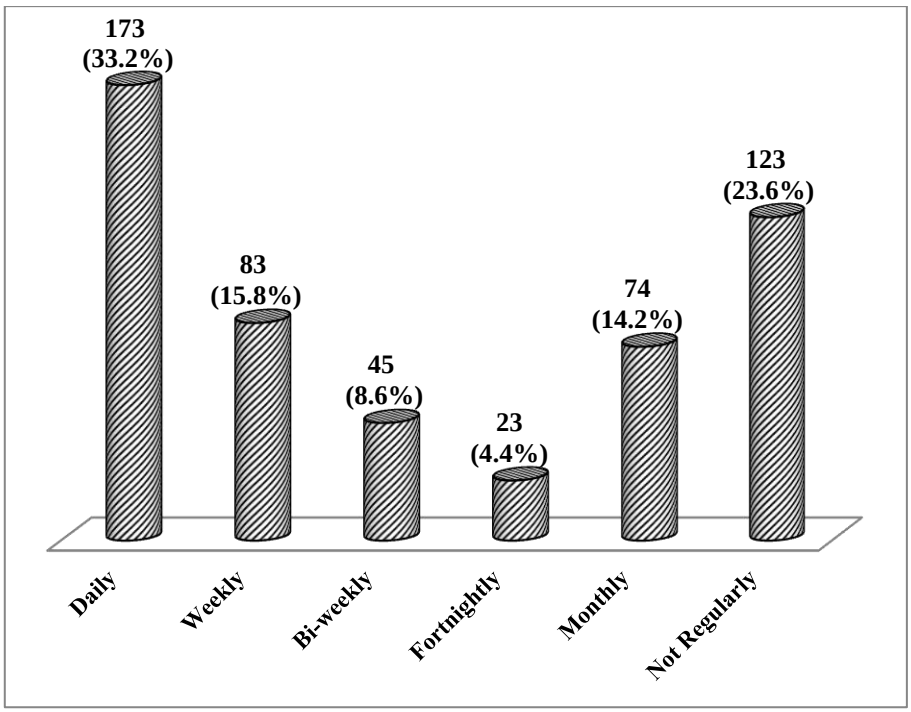

Figure 5.4: Frequency of library visits by respondents

Frequency of library visits by the scientific community has shown that the most of the respondents 173 (33.2%) visit library on daily basis. On the other hand, all most same numbers of respondents 123 (23.6%) and 74 (14.2%) does not visit library

regularly and/or once in a month respectively. Thus it shows that there are two distant opposite groups, few are visiting library to meet their requirement whereas few are entirely depend upon other external sources. Further, it is also shown that 83 (15.8%) respondents visit library on weekly basis whereas 45 (8.6%) respondents visit library bi-weekly basis and only 23 (4.4%) respondents visit on fortnightly basis.

Thus to know the reason of opposite responses provided by scientific community for frequency of library visit; further analysis has been carried out to get the relation between such behaviors with others parameters.

Testing Hypothesis

NULL hypothesis: 1.

$H0_1$: There is no significant difference between different categories of users with frequency of library visit.

ALTERNATIVE hypothesis: 1.

$H1_1$: There is a significant difference between different categories of users with frequency of library visit.

A chi square test has been conducted which is associated between different categories of users (student, research scholar, and faculty member) and frequency of their library visit; has shown that the significant relationship (χ^2= 129.56, d= 15, $p<0.001$); thus alternative hypothesis 1 is supported, and null hypothesis 1 is rejected. Thus, there is a significant difference between different categories of users with frequency of their library visit.

NULL hypothesis: 2.

$H0_2$: There is no significant difference between users from different universities with frequency of library visit.

ALTERNATIVE hypothesis: 2.

$H1_2$: There is a significant difference between users from different universities with frequency of library visit.

A chi square test has been conducted which is associated between users from different universities with frequency of their library visit; which has shown that the significant relationship (χ^2= 112.53, d= 10, p<0.001); thus alternative hypothesis 2 is supported, and null hypothesis 2 is rejected. Thus, there is a significant difference between users from different universities with frequency of library visit.

From the above analysis, it is clear that two distant opposite responses may be due to different users groups and usage pattern of university libraries. From the cross-table analysis, it is found that frequency of library visits by the faculty members is very less in compare to students or research scholars. Further, frequency of library visit is much higher in Tezpur University in compare to other university library users.

5.5.3 Purpose of University Library Visit by Scientific Community

To know the purpose of their library visits, the questions were asked to library users and the responses received from the respondents have been shown in Table: 5.6 A. For each options library users were asked to rank from 1 to 8 ranks as per their purpose for visiting the library.

Table: 5.6 (A) Ranks of purpose of library visit by respondents (N= 521 each)

	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7	Rank 8	NR	MoV
For consult reference/ text books	**158**	155	71	31	25	5	7	0.0	69	1
	30.3%	29.8%	13.6%	6.0%	4.8%	1.0%	1.3%	0.0%	13.2%	
For issue and return of the book	99	**145**	102	55	50	14	1	1	54	2
	19.0%	**27.8%**	19.6%	10.6%	9.6%	2.7%	.2%	0.2%	10.4%	
To consult printed journal or database.	92	17	**140**	18	11	27	48	9	159	3
	17.7%	3.3%	**26.9%**	3.5%	2.1%	5.2%	9.2%	1.7%	30.5%	
To get up-to-date/ referral information	9	17	108	**136**	39	24	19	9	160	4
	1.7%	3.3%	20.7%	**26.1%**	7.5%	4.6%	3.6%	1.7%	30.7%	
For reading book, newspapers etc.	57	42	46	58	**117**	39	0.0	0.0	162	5
	10.9%	8.1%	8.8%	11.1%	**22.5%**	7.5%	0.0%	0.0%	31.1%	
For taking preparation for Examinations/ Lecture	15	63	57	27	90	**104**	1	1	163	6
	2.9%	12.1%	10.9%	5.2%	17.3%	**20.0%**	.2%	.2%	31.1%	
To access Internet/ E-resource.	7	9	28	14	31	73	**77**	1	281	7
	1.3%	1.7%	5.4%	2.7%	6.0%	14.0%	**14.8%**	.2%	53.9%	
Others	4	5	2	2	1	2	2	**6**	497	8
	0.8%	1.0%	0.4%	0.4%	0.2%	0.4%	0.4%	**1.2%**	95.4%	

(Source: Computed from returned questionnaires)

The study has shown that the most of the respondent 158 (30.3%) visit the library for consult reference/ text books, which is placed at 1st rank which is followed by issue and return of the book 145 (27.8%) and placed at the 2nd rank order, whereas to consult printed journal or database 140 (26.9%) is placed at the 3rd rank order.

Further, to get up-to-date/ referral information 136 (26.1%) is placed at the 4th rank order; for reading book, newspaper, etc. 117 (22.5%) is placed at the 5th rank order; for taking preparation for examinations/ Lecture 104 (20.1%) is placed at the 6th rank order and to access Internet/ E-resource 77 (14.8%) is placed at the 7th rank order respectively.

Table 5.6 (B): Summary of the Ranking of Library Visit Purpose (N= 521 each)

Details	Rank
For consult reference/ text books	**1**
For issue and return of the book	**2**
To consult printed journal or database.	**3**
To get up-to-date/ referral information	**4**
For reading book, newspapers etc.	**5**
For taking preparation for Examinations/ Lecture	**6**
To access Internet/ E-resource.	**7**
Others	**8**

(Source: Computed from returned questionnaires)

Thus, the Table: 5.6 (A) is re-arranged into Table: 5.6 (B), as per the mode value of different responses. Thus the study has shown that most of the respondents used library for consult reference/ printed books, printed journal or database, issue and return of the book and to get up-to-date information in general. Further, from the study it also clears that majority of the library users do not access Internet/ e-resources from library building. The reason for not accessing Internet/ e-resources from library building may be

due to the availability of Intranet services (eg. LAN, Wi-Fi) within university campus; which leads to access required e-resources from anywhere/ directly from department of university. Further, some most common other purposes of library visit stated by few respondents includes “writing article/ paper”, “delivering talks”, “to give demand for required books”, “to get reports”, “reading printed journals”, “accessing print facility” etc.

5.5.4 Other Library Visit Pattern of Scientific Community

To know how respondents visit other library in addition to their own university/ departmental library, questions were asked and the responses received have shown in the Table: 5.7.

Table: 5.7 Visit of Various Libraries by Respondents (N=521)

			Category			Total
			Student	Research Scholar	Faculty	
Other Library Visit	Yes	Count	**53**	**97**	**145**	**295**
		% within Category	**27.7%**	**57.7%**	**89.5%**	**56.6%**
		% of Total	**10.2%**	**18.6%**	**27.8%**	**56.6%**
	No	Count	138	71	17	226
		% within Category	72.3%	42.3%	10.5%	43.4%
		% of Total	26.5%	13.6%	3.3%	43.4%

(Source: Computed from returned questionnaires)

Majority of the respondents 295 (56.6%) visit other libraries along with their university library; within which most of the respondents 145 (27.8% within total, 89.5% within Category) belong to faculty members; which are followed by 97 (18.6% within total, 57.7% within Category) respondents belong to research scholars and only 53 (10.2%% within total, 27.7% within Category) respondents belong to students. It has

found from the analysis of the result that faculty members are using other library to a large extent to meet their requirements

Testing Hypothesis

NULL hypothesis: 3.

$H0_3$: There is no significant difference between different categories of users with their libraries visit pattern.

ALTERNATIVE hypothesis: 3.

$H1_3$: There is a significant difference between different categories of users with their libraries visit pattern.

A chi square test has been conducted which is associated between different categories of users (student, research scholar, and faculty member) and various libraries visit pattern has shown that the significant relationship (χ^2= 136.238, d= 2, p<0.001); thus alternative hypothesis 3 is supported, and null hypothesis 3 is rejected. Thus, there is a significant difference between different categories of users with their libraries visit pattern.

NULL hypothesis: 4.

$H0_4$: There is no significant difference between different income groups of users with different library visit pattern.

ALTERNATIVE hypothesis: 4.

$H1_4$: There is a significant difference between different income groups of users with different library visit pattern.

A chi square test has been conducted which is associated between different income groups of users and different library visit pattern, has shown the significant relationship (χ^2= 68.897, d= 5, p<0.001); thus alternative hypothesis 4 is supported, and

null hypothesis 4 is rejected. Thus, there is a significant difference between different income groups of users with different library visit pattern.

Correlations Analysis

Correlation coefficient analysis has been carried out between different age groups with various libraries visit pattern; which showed that there is a moderate negative relationship between different age groups with different library visit pattern and that correlation is significant at the significance level of 0.01. (Where, CoV= -.533; p= 0.01 [2-tailed]).

Thus, the analysis of result shows that faculty members generally use various types of library resources efficiently by visiting different libraries apart from their university library for accessing their required information in compare to research scholars/ students. This may be due to university library fail to provide the required demands of faculty members belong to scientific community.

5.5.5 Type of Other Library Visit by Scientific Community

The respondents, who visit other libraries apart from their university library, further questions were asked to know about the type of library they generally visit. The responses gathered out of 295 respondents are shown in the Figure: 5.5 below. Figure: 5.5, which reveals that out of 295 respondents who visit other libraries, most of them 133 (45.1%) visit "British Library", which is followed by 104 (35.2%) visit "District Library"; while 96 (32.5%) respondents visit "American Central Library". Moreover, 89 (30.1%), 68 (23.13%), 62 (21.1%) and 38 (12.8%) respondents visit "National Library", "State Central Library", "NIT/ IIT Library" and "Others Library" respectively.

It is interesting to note that respondents are not dependent on their university library rather a substantial numbers of respondents visits other libraries also to seek desired information. British Library, District Library, American Central Library, National Library of India was most popular libraries visited by the scientific communities of Assam.

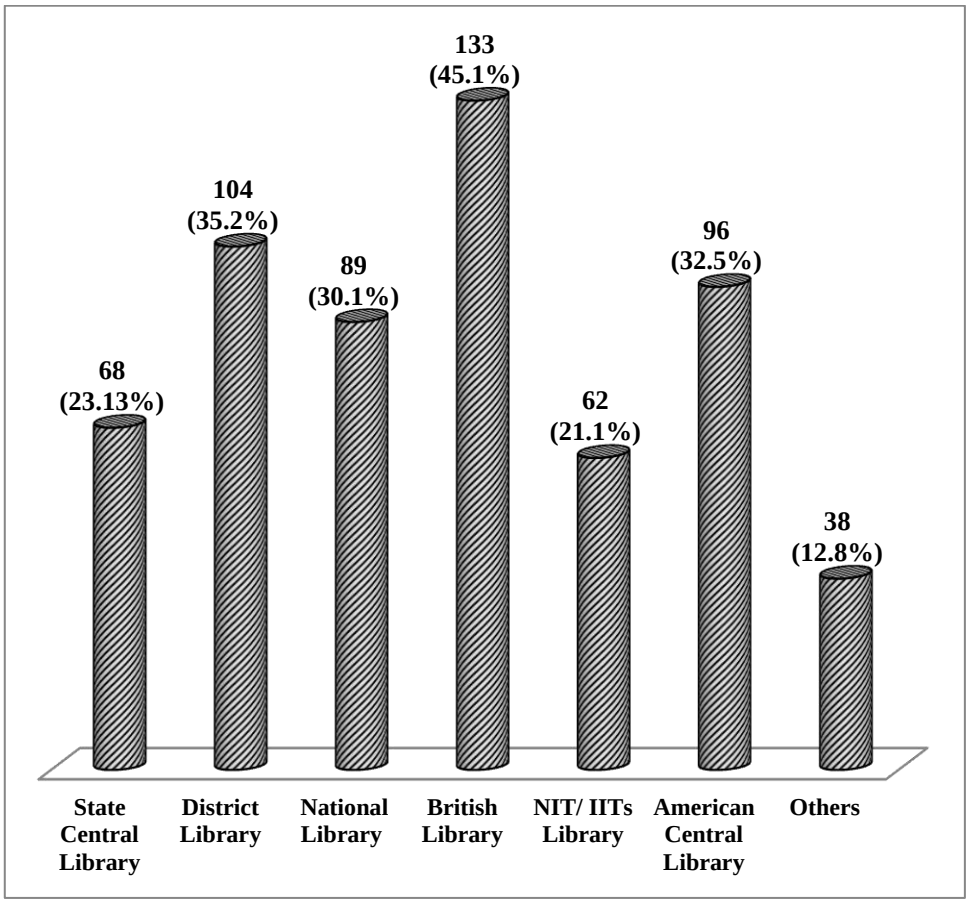

Figure: 5.5 Type of other library visit by respondents

5.5.6 Strategies Adopted for Searching/ Seeking Desired Information by Scientific Community from their Own University Library

Scientific community library users generally adopt various strategies to search desired information for their academic/ research assignments from their own university library. The responses gathered out of 521 respondents are shown in Table: 5.8 (A). For

each parameter, the library users were asked to rank their response from 1 to 7 ranks as per their strategies of information search.

The study has shown that the most of the respondent 234 (44.9%) search information by using library OPAC, which is placed at 1st rank which is followed by directly approaching to the book shelves for required material 124 (23.8%) and placed at the 2nd rank order; whereas respondent search information 112 (21.5%) by taking help from LIS professional for accessing document is placed at the 3rd rank order. Further, 108 (20.5%) respondent search information by accessing library database/ e-resource and placed at the 4th rank order, which is followed by 95 (18.2%) respondent search information by consulting indexing and abstracting journals and placed at the 5th rank order, whereas 63 (12.1%) approaching to librarian/ higher authority for help and placed at the 6th rank order. Moreover, only 62 (11.9%) respondent search information by using manual Library Catalogue and place at 7th rank order respectively.

Thus, the Table: 5.8 (A) is re-arranged into Table: 5.8 (B), as per the mode value of different responses. Thus study has shown that most of the respondents search information within library by using library OPAC or directly approaching to the book shelves or by taking help from LIS professional for accessing document.

Since, all university libraries under the study consist of LAN/ Wi-Fi facilities, so respondents sometime prefer to search information by accessing library database from their department or university. Further, few library users also search information by consulting printed indexing and abstracting journals, which are available within the library. Sometime, few library users; mainly faculty members visit to the librarian or higher authority (incase unavailability of librarian) to give proposal about required documents or providing for referral services.

Table 5 .8 (A) Ranks of Strategies Adopted for Searching/ Seeking Desired Information from Library (N= 521 each)

	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6	Rank 7	Rank 8	NR
Using library OPAC	**234**	136	65	19	6	1	0.0	0.0	60
	44.9%	26.1%	12.5%	3.6%	1.2%	.2%	0.0%	0.0%	11.5%
Directly approaching to the Book Shelves	120	**124**	73	66	43	3	10	0.0	82
	23.0%	**23.8%**	14.0%	12.7%	8.3%	.6%	1.9%	0.0%	15.7%
Taking help from LIS professional	12	66	**112**	110	67	21	33	0.0	100
	2.3%	12.7%	**21.5%**	21.1%	12.9%	4.0%	6.3%	0.0%	19.7%
Access Library Database/ E-resource	85	79	104	**108**	33	6	4	0.0	102
	16.3%	15.2%	20.0%	**20.7%**	6.3%	1.2%	.8%	0.0%	19.6%
By consulting Indexing and Abstracting Journals	3	7	7	40	**95**	93	35	3	238
	.6%	1.3%	1.3%	7.7%	**18.2%**	17.9%	6.7%	.6%	45.7%
Approaching to librarian/ higher authority	10	40	56	40	35	**63**	15	0.0	262
	1.9%	7.7%	10.7%	7.7%	6.7%	**12.1%**	2.9%	0.0%	50.3%
Manual Library Catalogue	3	3	3	8	59	52	**62**	4	327
	.6%	.6%	.6%	1.5%	11.3%	10.0%	**11.9%**	.8%	62.8%
Others	4	1	9	6	6	2	1	**6**	486
	.8%	.2%	1.7%	1.2%	1.2%	.4%	.2%	**1.2%**	93.7%

(Source: Computed from returned questionnaires)

Further, in the present time since all libraries are providing OPAC facility, so very few users willingness preferred to search information by manual library catalogue. Further, some other strategies adopted by few respondents for information search from library includes "by discussing with peers/ friends about the location of required material", "sending request to library", etc.

Table: 5.8 (B) Summary of the Ranking of Strategies Adopted for Searching/ Seeking Desired Information from Library (N= 521 each)

Details	Rank
Using library OPAC	**1**
Directly approaching to the Book Shelves	**2**
Taking help from LIS professional	**3**
Access Library Database/ E-resource	**4**
By consulting Indexing and Abstracting Journals	**5**
Approaching to librarian/ higher authority	**6**
Manual Library Catalogue	**7**

(Source: Computed from returned questionnaires)

5.5.7 Satisfaction Level of University Library Collections by Scientific Community

Any library is known by its collection. The collection of the library plays very important role for any academic institutions to fulfill the needs of its users. If the library collection built up with adequate collection as quantitatively and qualitatively meaningful (documents), then the library user's needs are met. To know the availability of adequate collection of different types of documents in university libraries; questions were asked and responses received have been shown in Table: 5.9.

Table: 5.9 Rating of Library Resources to Meet Expectation of Library Users (N= 521 each)

	1	2	3	NR	Total
Reference Books	88	**337**	89	7	521
Text Books	102	**300**	109	7	521
Theses/ Dissertation	38	**267**	50	166	521
Journals	84	**207**	117	113	521
E-Resources	91	**249**	175	6	521
Online Resources	52	**239**	206	24	521
Newspapers	62	**241**	149	69	521
Abstracts & Indexes	104	**212**	35	170	521
CD/ DVD Databases	115	**119**	11	276	521
Govt. Reports	82	**150**	14	275	521
Overall Collection	***112***	***318***	***88***	***3***	521

(Source: Computed from returned questionnaires)

[Where, 1= Not at all Sufficient, 2= Partially Sufficient, 3= Sufficient.]

While rating about library collection such as "Reference Book"; majority of the respondents (337; 64.7%) seem to believe partially adequate whereas 89 (17.1%) respondents opined as fully adequate and 88 (16.7%) believe inadequate collection. Again, rating about library collection such as "Text Book"; has shown that majority of the respondents (300; 57.6%) seem to believe partially adequate whereas 110 (21.5%) respondents believe as fully adequate and 102 (19.8%) believe inadequate collection. These showed that most of the library users are partially satisfied with the "Reference Book" and "Text Book" collections.

Further, rating about library collection such as "Theses/ Dissertation"; majority of the respondents (267; 51.3%) seem to believe partially adequate whereas 50 (9.5%) respondents believe adequate and 38 (7.3%) respondents believe inadequate collection. Rating about library collection such as "Journals"; has shown that majority respondents

(207; 39.6%) seem to believe partially adequate whereas 117 (22.4%) respondents believe adequate and 84 (16.2%) believe inadequate collections. Again most of the library users, particularly student category did not response to these categories of library collections; this is may be due to the unawareness about the utilization of those resources.

Again rating about library collection such as "E-Resources"; majority respondents (249; 47.7%) seem to believe partially adequate whereas 175 (33.5%) respondents believe adequate and 91 (17.2%) respondents believe inadequate. Rating about library collection such as "Online Resources"; majority of the respondents (239; 45.8%) seem to believe partially adequate whereas 205 (39.5%) respondents believe adequate and 52 (9.9%) respondents believe inadequate collections. These showed that majority library users are partially or fully satisfied with the "E-Resources" and "Online Resources" collections. These has shown that on average all university libraries procuring e-resources either under consortia or subscribed almost adequately. Users are almost seemed to be satisfied with such resources.

While rating about library collection such as "Newspapers"; majority of the respondents (241; 46.2%) seem to believe partially adequate; whereas 149 (28.4%) respondents believe adequate and 62 (11.9%) respondents believe inadequate collections. Thus, library users are seemed to believe newspapers collections are partially satisfied, but there is need to add more newspaper in the library collections.

Further, rating about library collection such as "Abstracts & Indexes"; majority of the respondents (212; 40.6%) seem to believe partially adequate; whereas 104 (19.9%) respondents believe inadequate and 35 (6.1%) respondents believe adequate. Rating about library collection such as "CD/ DVD Databases"; has shown that majority of the respondents (119; 22.9%) seem to believe partially adequate; whereas 115 (22.2%)

believe inadequate and 11 (2.3%) believe adequate collections. Rating about library collection such as "Govt. Reports"; majority of the respondents (150; 28.7%) seem to believe partially adequate; whereas 82 (15.7%) respondents believe inadequate and 14 (2.6%) respondents believe adequate collections. Most of the library users did not response to these categories of library collections; this is might be due to these are less usage/ require documents for accessing information. Further, it is showed that library users are not satisfied with these library collections.

While, in overall collection rating about university library; it is found that majority of the respondents (318; 61.1%) seem to believe collections as partially adequate; whereas 112 (21.5%) respondents believe adequate and 88 (16.4%) respondents believe inadequate (where, Mdn= 2, IQR= 0). Most of the faculty members (60; 37.4%) also feel library collections are not sufficient to meet their requirements. Thus, to meet their required information, they have to depend on some external sources. Further, university libraries have to procure/ collect adequate documents for their library users

Testing Hypothesis

NULL hypothesis: 5.

$H0_5$: There is no significant difference between different categories of users with overall satisfaction levels of library collections.

ALTERNATIVE hypothesis: 5.

$H1_5$: There is a significant difference between different categories of users with overall satisfaction levels of library collections.

A chi square test has been conducted which is associated between different categories of users (student, research scholar, and faculty member) and overall

satisfaction levels of library collections, has shown that the significant relationship (χ^2= 34.337, d= 6, p<0.001); thus alternative hypothesis 5 is supported, and null hypothesis 5 is rejected. Thus, there is a significant difference between different categories of users with overall satisfaction levels of library collections.

Moreover, from the cross-table analysis, it is also found that scientific community belong to Tezpur University, seem to believe they are almost satisfied with the journal collections of their university library. While, scientific community belongs to Assam University, seem to believe they are very dissatisfied with journal collections of their university library. Whereas, scientific community belongs to Gauhati University and Dibrugarh University; seem to believe they are partially satisfied with journal collections of their university library; but there are very urgent requirement for addition of more journals. Respondents of Gauhati University; also mentioned as they need CAS to know usage pattern of journal from the library.

Moreover, from the analysis of the results, it is found that the overall collections of all university libraries are not up to the mark. But, most of the time scientific community is providing requisition for various resources to the library as per their requirements.

5.5.8 Awareness of User Education/ Orientation program by Scientific Community

In order to know whether scientific community library users are aware of user education/ orientation program provided by university library, question was asked to the respondents; which shows that majority of the respondents (372; 71.0%) agree that their university library provide/ or they are aware of user education/ orientation program while only 150 (29.0%) respondents are not aware of user education/ orientation program provided by the university libraries.

5.5.9 Need or User Education/ Orientation program by Scientific Community

Further, to know the opinion of scientific communities about the need for user education/ orientation program or additional user education/ orientation program provided by library, question was asked. Majority of the respondents (302; 58.0%) feel that there is a need of user education/ orientation program while 219 (42.0%) respondents do not require such orientation or educational program. Those respondents who feel there is a need for user education/ orientation program, they have also responded about the topic on which they generally required those programs. Majority of them have stated that they required information related to new arrived journals or books. In case web resources, they generally required information related to authenticate website and the way how to retrieved information from those. It is evident from the study that the university library users need CAS (Current Awareness Service) and that should be made mandatory and if possible SDI (Selective Dissemination of Information) services should be introduced.

Section-D

5.6 Information Searching Pattern by Scientific Community

5.6.1 Most Preferred Way of Desired Information Search by Scientific Community

Scientific community needs information in their day to day life for research or daily activities. So, questions are asked to them about what is their preferred way to search desired information and the responses received have been shown in Figure: 5.6. Thus, majority of the respondents (221; 42.4%) preferred to search mostly over web/ Internet which is followed by 138 (26.9%) respondents who preferred to search by discussing with friends/ peers/ colleagues/ teachers whereas only 88 (16.9%) start search

from their library services. Further, 71 (13.6%) preferred to search by visiting from the local/ online book shop.

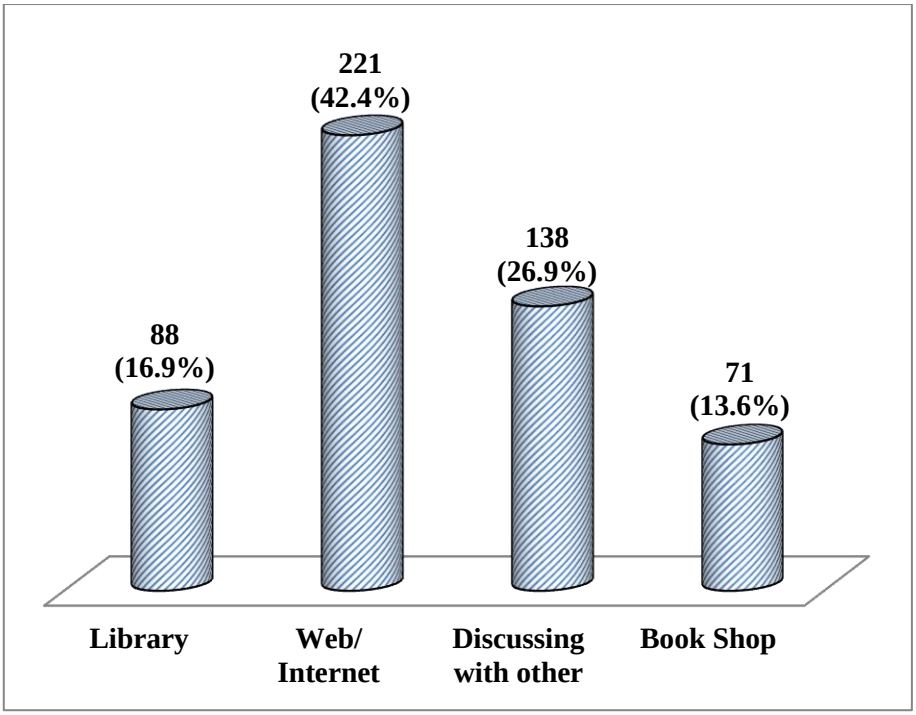

Figure: 5.6 Most Preferred Way of Desired Information Search

Testing Hypothesis

NULL hypothesis: 6.

$H0_6$: There is no significant difference between different categories of users with preferred way of desired information search.

ALTERNATIVE hypothesis: 6.

$H1_6$: There is a significant difference between different categories of users with preferred way of desired information search.

A chi square test has been conducted which is associated between different categories of users (student, research scholar, and faculty member) and preferred way of desired information search; which has shown the significant relationship (χ^2= 41.78, d= 6, $p<0.001$); thus alternative hypothesis 6 is supported, and null hypothesis 6 is rejected.

Thus, there is a significant difference between different categories of users with preferred way of desired information search.

NULL hypothesis: 7.

$H0_7$: There is no significant difference between different university library users with preferred way of desired information search by its users.

ALTERNATIVE hypothesis: 7.

$H1_7$: There is a significant difference between different university library users with preferred way of desired information search.

A chi square test has been conducted which is associated between different university library users with preferred way of desired information search by its users; which has shown no significant relationship (χ^2= 5.35, d=9, p<0.802); thus null hypothesis 7 is supported, and alternative hypothesis 7 is rejected. Thus, there is no significant difference between the preferred ways of desired information search.

From the analysis, it is clear that respondents from different four universities seem to behave almost similar pattern while search desired information whereas their category wise usage pattern varies; i.e. students, research scholar and faculty members generally preferred different way while search information.

5.6.2 Preference of Search Topics by Scientific Community

Further, questions were asked to scientific community about the document generally they search for their day to day activities. Here, scientific community is allowed to give multiple responses against each option.

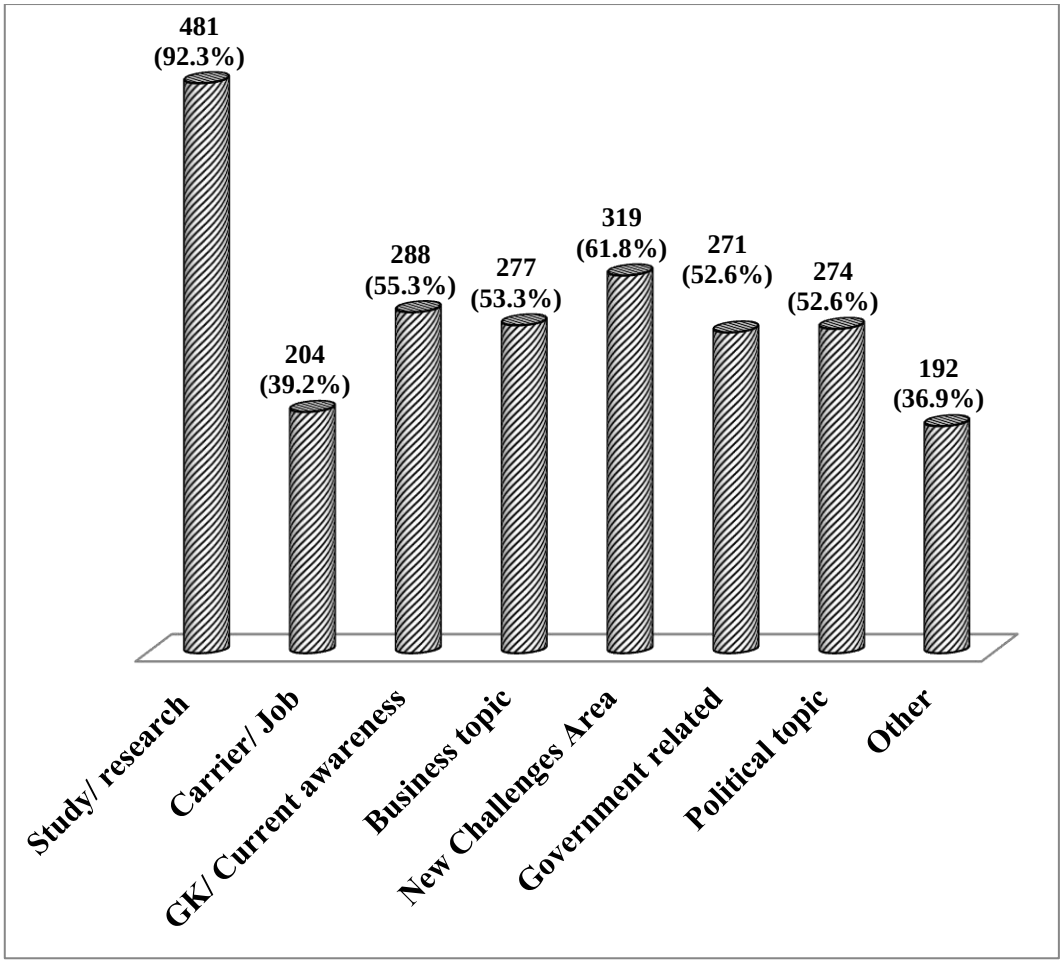

Figure: 5.7 Strategies Adopted for Searching Desired Documents

Figure: 5.7 has shown that majority of the respondents (481; 92.3%) search/ seek information very often on study/ research related topic, which is followed by 319 (61.8%) respondents who search information on new development/ challenges related topic whereas 288 (55.3%) respondents search on general knowledge/ current awareness related topic. Moreover, 277 (53.3%), 274 (52.6%), 271 (52.0%) and 204 (39.2%) respondents also search on business related, political issue, other government related and job or carrier related issues respectively. Further, a large numbers of respondents 192 (36.9%) also search on various others issues such as environmental, human resources, astronomies, wild life, paintings, geography, pollution, technological services, shopping, new services etc.

Since, in this study a large population has been taken under consideration, thus information searching topic of the respondents also varies in various pattern from person to person. Further, as all of them belong to academic scientific community, so some common trends was observed in this study; such as study/ research related topic or new challenge towards each respective fields. But all scientific communities also share their view towards various others issues/ topics, which are essential to fulfill their required/ necessary information.

5.6.3 Preference of Use of Documents for Learning/ Research Activities by Scientific Community

The questions were asked to library users about the document generally/ usually they access for day to day learning/ research activities. Here ten different types of document's name were provided to the respondents and they are asked to rate them from 1 to 5; where 1 stands for "Not used" and 5 stands for "Extremely Used" as per their choice. Table: 5.10 below have shown the response given by respondents as per their usage of the required documents.

Thus, it is observed from the Table: 5.10 that most of the respondents generally use various documents such as "Online Resources" and "E-Resources" extremely (where, Mdn= 5, IQR= 1). Further, majority of the respondents also use other documents such as "Text books", "Reference books" and "Newspapers" very frequently (where, Mdn= 4, IQR= 1). These leads to conclude that most of the respondents mainly either search by online/ e-resources or they depend on text or reference book to meet their required information.

Further, in case "Journals", the responses seem to be polarized, some respondents (112; 21.5%) did not use journals for information search whereas few other respondents

(141; 27.1%) extremely use journals to meet their required information (where, Mdn= 4, IQR= 3). This is might be due to student communities, who use journals very less, while research scholar or faculty member communities frequently use journals to be up-to-date.

Table: 5.10 Preference of Use of Documents for Learning/ Research Activities

(N= 521 each)

	1	2	3	4	5	NR	**MD**	**IQR**
Online Resources	0	7	42	168	**292**	12	**5**	**1**
E-Resources	1	41	52	154	**263**	10	**5**	**1**
Text books	0	10	82	**208**	216	5	**4**	**1**
Reference books	16	17	92	**251**	124	21	**4**	**1**
Newspapers	3	11	69	181	**211**	46	**4**	**1**
Journals	122	55	35	138	**141**	30	**4**	**3**
Theses/ Dissertation	134	38	116	**149**	46	38	**3**	**3**
Abstracts & Indexes	101	27	**167**	113	59	54	**3**	**3**
CD/ DVD Databases	**269**	48	66	47	33	58	**1**	**2**
Govt. Reports	**302**	73	39	44	20	43	**1**	**2**

(Source: Computed from returned questionnaires)

[Where, 1= Not in use; 2= Very less Use; 3= Slightly Use; 4=Much Use; 5= Extremely Use]

Again; in case "Theses/ Dissertation", the responses seem to be more polarized, some respondents (134; 25.7%) did not use "Theses/ Dissertation" for information search whereas few other respondents (149; 27.9%) use it frequently (where, Mdn= 3, IQR= 3). In case "Abstracts & Indexes", the responses also seem to be more polarized, some respondents (101; 19.3%) did not use "Abstracts & Indexes" for information search whereas few other respondents (167; 32.1%) use it moderately to meet their required information (where, Mdn= 3, IQR= 3). These different of responses due to the students who generally required documents related to their academic syllabus whereas for

research scholar or faculty member, they required those documents due to further research activities.

Moreover, most of the respondents generally does not use documents such as "CD/ DVD Databases" and "Govt. Reports" to meet their required information (where, Mdn= 1, IQR= 2). This is may be due to scientific communities get very less important information from these documents.

From the finding, it has been observed that some printed or offline resources are not used by substantial numbers of users which might be on account of their ignorance or not placed at convenient location. Therefore, library users should need to make aware and orient them to use such resources for their research and academic activities.

5.6.4 Various Channels Used by Library Users for Information Searching

The questions were asked to library users about the channels generally they used for information search and the responses received are shown in Table: 5.11.

Thus, it is observed from the Table: 5.10 that most of the respondents generally use various channels such as "Internet/ Online Resource", "Personal collection" and "Cable/ TV channels" very frequently for information search (where, Mdn= 4, IQR= 1). Further, majority of the respondents also use channel such as "Social Networking Site" frequently for gather the required information (where, Mdn= 4, IQR= 2). These lead to conclude that most of the respondents mainly use channels such as online resources or TV channels or personal collections to meet their required information.

But, in case of own university library usage, the responses is seem to be polarized, some respondents (94; 18.1%) did not used their university library as channels of information whereas rest other respondents moderately use very rarely "university library" as channels of information source (where, Mdn= 3, IQR= 2). This finding of the

study shows that scientific community facing lots of problem for getting resource from library and majority of them are confused towards the right channels of information source.

Table: 5.11 Rating the Various Channels Used by Library Users (N= 521 each)

	1	2	3	4	5	NR	**M**	**IQR**
Internet / Online Resource	16	7	65	180	**248**	5	**4**	**1**
Personal collection	3	26	50	**269**	156	17	**4**	**1**
Cable/ TV channels	43	30	108	**207**	90	43	**4**	**1**
Social Networking Site	3	25	86	**195**	176	37	**4**	**2**
Library and Information Centres of your university	94	59	146	**174**	28	24	**3**	**2**
Other Library and Information Centres beside your university	**124**	94	100	90	11	102	**2**	**2**
Information networks like INFLIBNET /DELNET etc.	**188**	48	94	34	23	134	**2**	**3**
District Information Centre	**216**	49	51	31	17	157	**1**	**2**
State Information Centre	**217**	34	63	15	5	187	**1**	**2**
Community Information Centres	**229**	43	39	4	2	204	**1**	**2**

(Source: Computed from returned questionnaires)

[Where, 1= Not in use; 2= Very less Use; 3= Slightly Use; 4=Much Use; 5= Extremely Use]

Further, from the analysis of the study; it is found that scientific community did not used effectively other Library and Information Centres (where, Mdn= 2, IQR= 2). This shows that scientific community did not use Library and Information Centres as main channel of information source. They are depended on other channels to get information for their day to day needs.

While channel such as “Information networks like INFLIBNET /DELNET etc.” also used by them 188 (36.2%) very less though responses seem to be polarized (where, Mdn= 2, IQR= 3). Whereas, others channels such as “District Information Centre”, “State Information Centre” and “Community Information Centres” are used rarely by scientific community (where, Mdn= 1, IQR= 2).

From, the findings; it is observed that scientific community is very confused about the channels of information sources and they are using various technique and channels to seek their desired information.

5.6.5 Confidence Level of Scientific Community for Information Search

To know the confidence level of information search by the scientific community, questions were asked to the respondents to know how they feel themselves as confidence while searching information and the responses received has been shown in Table: 5.12.

Thus, from the above Table, it is evident that majority of the scientific community 282 (54.1%) feel themselves as very much confidence whereas 202 (38.8%) respondents feel themselves as somehow confident and only 37 (7.1%) feel as they are not confidence at all while searching information.

Table: 5.12 Confidence Level of Scientific Community (N= 521)

	Frequency	Percent
Very much confidence	282	54.1
Somehow confidence	202	38.8
Not at all confidence	37	7.1
Total	521	100.0

(Source: Computed from returned questionnaires)

Hypothesis Testing

NULL hypothesis: 8.

$H0_8$: There is no significant difference between different categories of scientific community library users with level of their confidence while searching information.

ALTERNATIVE hypothesis: 8.

$H1_8$: There is a significant difference between categories of scientific community library users with level of their confidence while searching information.

A chi square test has been conducted which is associated between different categories of scientific community library users with level of their confidence while searching information, which has shown the significant relationship (χ^2= 196.11, d= 4, p<0.001); thus alternative hypothesis 8 is supported, and null hypothesis 8 is rejected. Thus, there is a significant difference between different categories of scientific community library users with level of their confidence while searching information.

NULL hypothesis: 9.

$H0_9$: There is no significant differences between scientific community belong to different universities with level of their confidence while searching information.

ALTERNATIVE hypothesis: 9.

$H1_9$: There is significant differences between scientific communities belong to different universities with level of their confidence while searching information.

A chi square test has been conducted which is associated between scientific community belong to different universities with level of their confidence while searching information, which has shown a significant relationship (χ^2= 14.6, d= 6, p<0.005); thus alternative hypothesis 9 is supported, and null hypothesis 9 is rejected. Thus, there is a

significant relationship between scientific community belong to different universities with level of their confidence while searching information.

NULL hypothesis: 10.

$H0_{10}$: There is no significant difference between gender and level of confidence while searching information.

ALTERNATIVE hypothesis: 10.

$H1_{10}$: There is a significant difference between gender and level of confidence while searching information.

A chi square test has been conducted which is associated between gender and level of confidence while searching information, which has shown no significant relationship ($\chi 2$= 9.147, d= 2, p<0.01, Eo= 17.19); thus null hypothesis 10 is supported, and alternative hypothesis 10 is rejected. Thus, there is no significant relationship at 5% level between gender and level of confidence while searching information.

Correlations Analysis

Correlation coefficient analysis has been carried out between different categories of scientific community with their level of their confidence while searching information; which has shown that there is a positive relationship and that correlation is significant at the significance level of 0.01. (Where, CoV= 0.585 *p*= 0.01 [2-tailed])

Further, correlation coefficient analysis has been carried out between different age groups of scientific community and level of their confidence while search information; which shows that there is a moderate positive relationship and that correlation is significant at the significance level of 0.01. (Where, CoV= 0.501 *p*= 0.01 [2-tailed]) These correlation analysis indicate that most of the students feel less

confidences while search information whereas faculty members feel very much confidents to searching information.

Moreover, to know how personal characteristic have an impact on confident levels of information search, more co-relation analysis has carried out. These has shown that scientific communities with extremely bold, creative and practical personality are more confident while search information than those who are week in nature (Where, CoV_{bold}= 0.771, $CoV_{creative}$ = 0.671, $CoV_{practical}$ = 0.513; p= 0.01 [2-tailed]).

5.6.6 Satisfaction Levels of Scientific Community over Retrieved Information

In the digital era, huge amount of information is being generated that people are confused about the required information which is useful form them or not. Thus in order to know how much scientific community satisfied most of the time with the information they retrieved from the web/ Internet or from other sources, questions are asked and the received responses has shown in Table: 5.13.

Table: 5.13 Satisfaction Levels of Scientific Community (N= 521)

	Frequency	Percent
Not at all Satisfied	178	34.2
Somehow Satisfied	209	40.1
Fully Satisfied	131	25.3
NR	3	0.04
Total	521	100.0

(Source: Computed from returned questionnaires)

Table: 5.13 has shown that most of the respondents 209 (40.1%) somehow satisfied with the information they retrieved whereas 178 (34.2%) dissatisfied at most of the time and 131 (25.3%) respondents are fully satisfied with their retrieved information

most of the time. The reasons for such responses are analyzed further by hypothesis and correlation testing.

Hypothesis Testing

NULL hypothesis: 11.

$H0_{11}$: There are no significant difference between gender and level of satisfaction with retrieved documents while searching information.

ALTERNATIVE hypothesis: 11.

$H1_{11}$: There are significant differences between gender and level of satisfaction with retrieved documents while searching information.

A chi square test has been conducted which is associated between gender and level of satisfaction with retrieved documents while searching information, which has shown no significant relationship ($\chi 2= 5.414$, $d= 2$, $p<0.067$); thus null hypothesis 11 is supported, and alternative hypothesis 11 is rejected. Thus, there are no significant difference between gender and level of satisfaction with retrieved documents while searching information.

NULL hypothesis: 12.

$H0_{12}$: There is no significant differences between different universities and level of satisfaction with retrieved documents while search information.

ALTERNATIVE hypothesis: 12.

$H1_{12}$: There is significant differences between different universities and level of satisfaction with retrieved documents while search information.

A chi square test has been conducted which is associated between differences between different universities and level of satisfaction with retrieved documents while

search information, which has shown that no significant relationship ($\chi 2$= 8.048, d= 6, p<0.235); thus null hypothesis 12 is supported, and alternative hypothesis 12 is rejected. Thus, there is no significant differences between different universities and level of satisfaction with retrieved documents while search information.

NULL hypothesis: 13.

$H0_{13}$: There is no significant difference between different categories of scientific community and level of their satisfaction with retrieved documents.

ALTERNATIVE hypothesis: 13.

$H1_{13}$: There is a significant difference between different categories of scientific community and level of their satisfaction with retrieved documents.

A chi square test has been conducted which is associated between difference categories of scientific community and level of their satisfaction while retrieving documents, which has shown the significant relationship (χ^2= 199.00, d= 4, p<0.001); thus alternative hypothesis 13 is supported, and null hypothesis 13 is rejected. Thus, there is a significant difference between different categories of scientific community and level of their satisfaction with retrieved documents.

Correlations Analysis

Correlation coefficient analysis has been carried out between categories of scientific community with level of their satisfaction while searching information; which showed that there is a positive relationship and that correlation is significant at the significance level of 0.01 (Where, CoV= 0.466 *p*= 0.01 [2-tailed]).

Further, correlation coefficient analysis has been carried out between different age groups of scientific community and level of their satisfaction while search

information; which showed that there is also a positive relationship and that correlation is significant at the significance level of 10% (Where, CoV= 0.501 *p*= 0.01 [2-tailed]). These correlations indicate that most of the library users especially students are less satisfied with the retrieved information while search information.

Section-E

5.7 Internet Literacy and E-resource Search Strategies

5.7.1 Awareness of Internet among the Scientific Community

It has been established that Internet serves as an important tool in the world for searching information. Internet facility helps users to know various developments and searching techniques for accessing the desired information. In this study, all 521 (100%) respondents are aware of Internet, which indicates that the scientific community university library users are well aware of Internet and extensively using Internet to access e-resource and others facilities.

5.7.2 Extent of Internet Literacy among the Scientific Community

Since, all the respondents aware of Internet, so further question was asked to know how much they think themselves as Internet literate. Figure: 5.8, has shown that out of 521 respondents, 234 (44.9%) respondents claimed themselves as an expert of using Internet, whereas 225 (43.2%) respondents feel they are intermediate and only 62 (11.9%) respondents feel they are novice of using ICT and Internet. This result may be due to respondents are using Internet or E-resource very frequently and they like to retrieved document from OPAC and online resources.

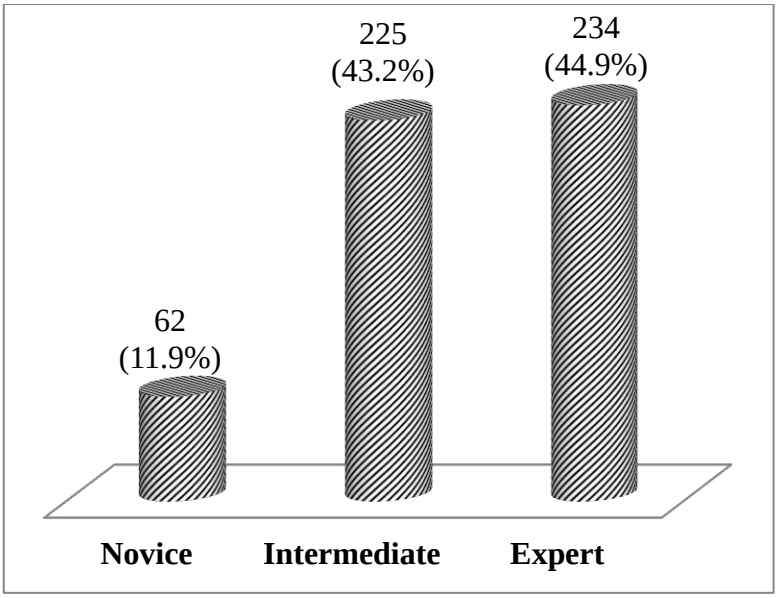

Figure: 5.8 Extent of Internet Literacy among Scientific Community

Hypothesis Testing

NULL hypothesis: 14.

$H0_{14}$: There is no significant difference between different categories of scientific community and extent to Internet literacy.

ALTERNATIVE hypothesis: 14.

$H1_{14}$: There is a significant difference between different categories of scientific community and extent to Internet literacy.

A chi square test has been conducted which is associated between difference categories of scientific communities and extent to Internet literacy, which has shown the significant relationship among the variable (χ^2= 249.00, d= 4, p<0.001); thus alternative hypothesis 14 is supported, and null hypothesis 14 is rejected. Thus, there is a significant difference between different categories of scientific community and extent to Internet literacy.

NULL hypothesis: 15.

$H0_{15}$: There is no significant difference between different universities and extent to Internet literacy.

ALTERNATIVE hypothesis: 15.

$H1_{15}$: There is a significant difference between different universities and extent to Internet literacy.

A chi square test has been conducted which is associated between differences between different universities and extent to Internet literacy, which has shown a significant relationship ($\chi 2= 26.745$, $d= 6$, $p<0.005$); thus alternative hypothesis 15 is supported, and null hypothesis 15 is rejected. Thus, there is a significant difference between different universities and extent to Internet literacy.

NULL hypothesis: 16.

$H0_{16}$: There is no significant difference between gender and extent to Internet literacy.

ALTERNATIVE hypothesis: 16.

$H1_{16}$: There is a significant difference between gender and extent to Internet literacy.

A chi square test has been conducted which is associated between differences between gender and extent to Internet literacy, which has shown that no significant relationship ($\chi 2= 26.745$, $d= 6$, $p<0.065$); thus null hypothesis 16 is supported, and alternative hypothesis 16 is rejected. Thus, there is no significant difference between gender and extent to Internet literacy.

Correlations Analysis

Correlation coefficient analysis has been carried out between categories of scientific community and extent to Internet literacy; which has shown that there is a

strong positive relationship and that correlation is significant at the significance level of 0.01. (Where, CoV= 0.645 *p*= 0.01 [2-tailed])

Further, correlation coefficient analysis has been carried out between different education levels of scientific community and extent to Internet literacy; which has shown that there is also a positive relationship and that correlation is significant at the significance level of 10%. (Where, CoV= 0.509 *p*= 0.01 [2-tailed]).

But, correlation coefficient analysis between faculty members with their designation and extent to Internet literacy; has shown that there is moderate negative relationship and that correlation is significant at the significance level of 10%. (Where, CoV=- 0.479, *p*= 0.01 [2-tailed]). i. e. majority of Assistant Professor may feel themselves as Internet expert than Professor.

5.7.3 Frequency of Internet Access for E-resource Usage by the Scientific Community

To know the frequency of Internet visit; questions were asked to the respondents and the responses received have been shown in Figure: 5.9. From the Figure: 5.9; it is clear that most of the respondents 284 (54.5 %) access to Internet on daily basis, whereas only 64 (12.8 %) respondents access Internet not regularly. Moreover, 55 (10.6%) respondents access Internet on fortnightly basis which is followed by 54 (10.4%), 41 (7.4%) and 23 (4.4%) weekly, monthly and bi-weekly basis respectively.

It is interesting to note that a substantial number of scientific community library users access Internet on daily basis which shows that Internet has become indispensable tool for them to keep them abreast about the recent development in the concerned subject field.

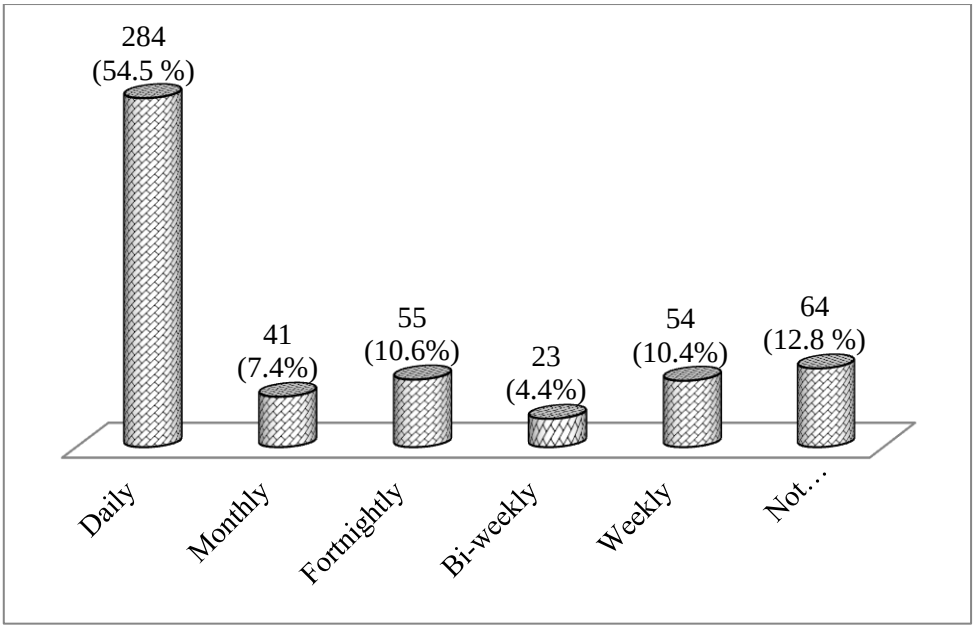

Figure: 5.9 Internet Access Frequency for E-resource Use by Scientific Community

5.7.4 Preferable Time of Internet Searching by the Scientific Community

To know the preferable time of Internet searching; questions are asked to the respondents and the received responses have been shown in Figure: 5.10.

One of the interesting finding of the study reveals that majority of the respondents (179; 34.4%), remain connected with Internet throughout the day which is followed by 112 (21.5%) respondents who prefer to use Internet at "Evening" whereas 103 (19.8%) respondents prefer to use Internet at "Night". Moreover, 98(18.7%) and 80 (15.3%) respondents prefer to use Internet at "Morning" and "Afternoon" time whereas 59(11.4%) respondents do not have any preference time and they use Internet very often while 10 (1.9%) respondents do not provide any response for this question.

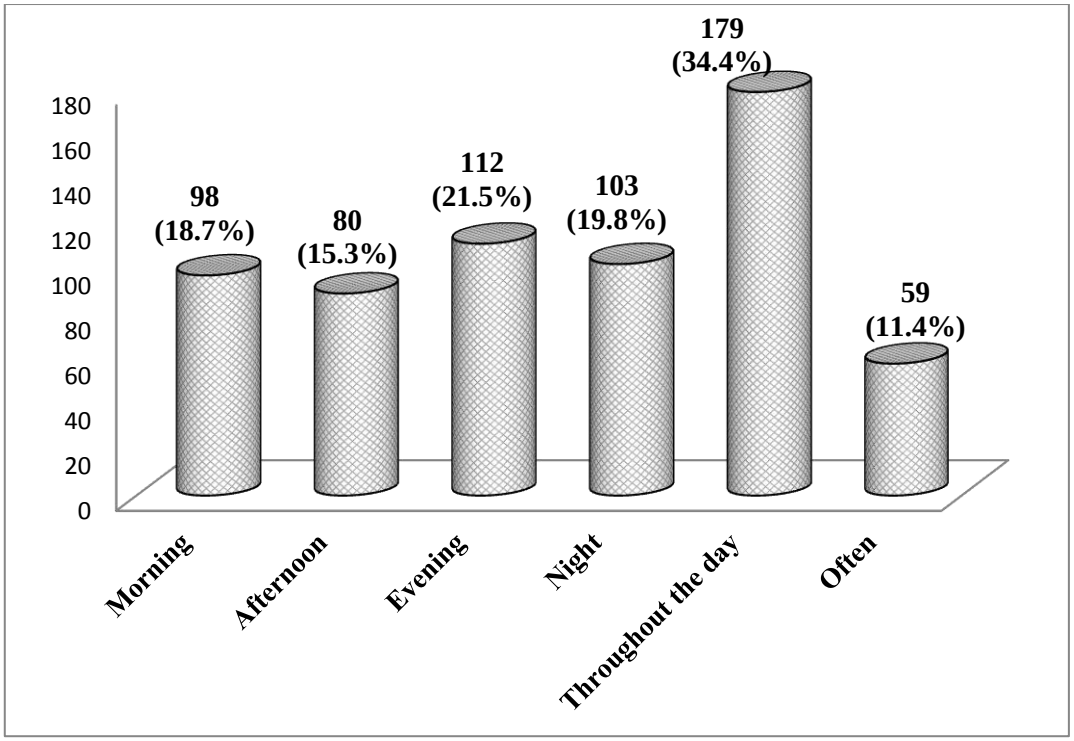

Figure: 5.10 Preferable Time of Internet Searching by Scientific Community

Correlation Analysis

Correlation coefficient analysis has been carried out between different age groups with Internet usage pattern throughout the day; which showed strong negative relationship and that correlation is significant at the significance level of 5%. (Where, CoV= -0.83, *p*= 0.05 [2-tailed]). i. e. younger age groups, especially students remain connected with Internet throughout the day and access Internet anytime as per their convenience.

5.7.5 Time Spent in a day to Check/ Access Internet by the Scientific Community

To know the time spent in a day to check/ access Internet; questions are asked to the respondents and the received responses were shown in Figure: 5.11. The study finding as shown in Figure: 5.11shows that majority of the respondents (160; 30.7%), use Internet for more than 6 hours a day; which has shown that they are extremely using

Internet in a day as they always remain connected with Internet and use when they feel require. This is followed by 143 (27.4%) respondents who use Internet "1-2" hour in a day whereas 95 (18.2%) respondents use Internet "2-4" hour in a day. Moreover, 75(14.3%) and 48 (9.6%) respondents use Internet "4-6" and "less than 1" hour in a day.

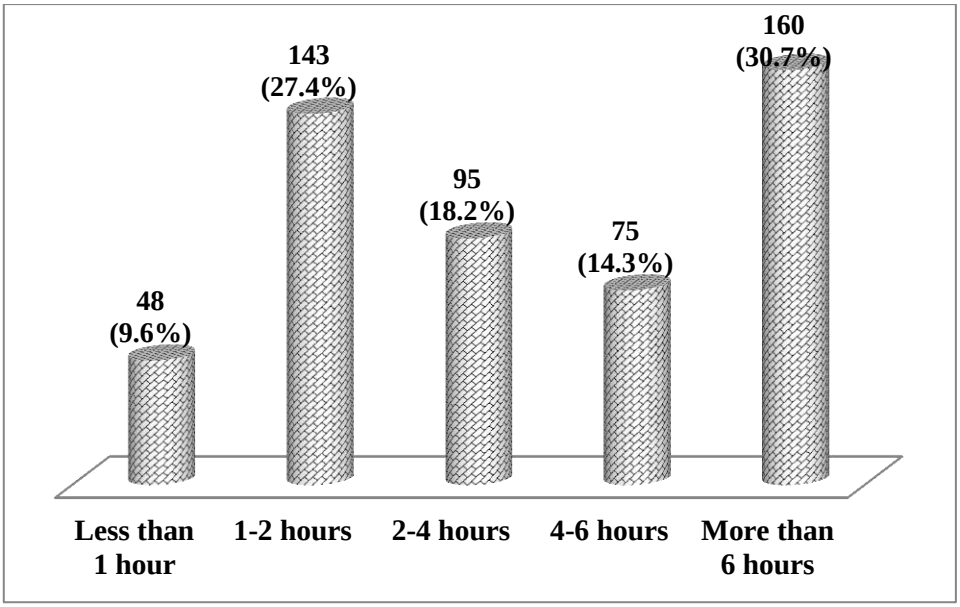

Figure: 5.11 Time Spent in a day to Check/ Access Internet by Scientific Community

5.7.6 Use of Interface Access for Internet by the Scientific Community

To know interface generally used by library user to access of Internet; questions are asked to the respondents and the received responses have been shown in Figure: 5.12. Here respondents are allowed to give multiple responses, if they use more than one interface.

It is very interesting to observe that majority of the respondents (273; 52.4%), use "Laptop" for most of the time for accessing to the Internet/ E-resources which is followed by 249 (47.5%) respondents use "Desktop" whereas 236 (45.3.8%) respondents who use "Smart Phone" and 151 (28.9%) respondents use "Tab". Moreover, 15 (2.3%)

respondents use other interface for accessing Internet/ E-resources which include by using smart LED television.

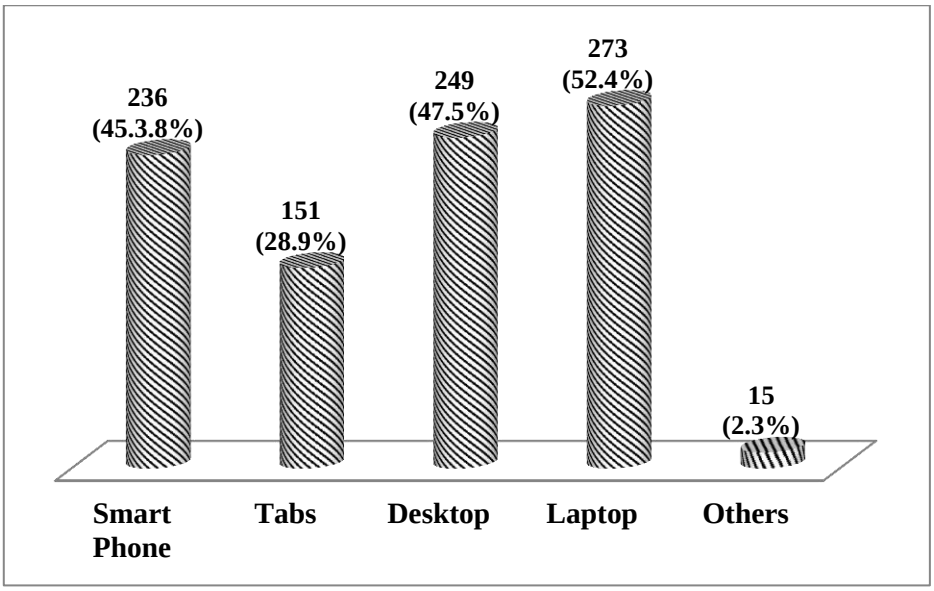

Figure: 5.12 Interfaces Used to Access of Internet by Scientific Community

It is a new finding which reveals that now LED TV is being used as a means of interface to access Internet. The finding shows that people are shifted from desktop to laptop, smart phone, LED TV and tabs.

5.7.7 Preference of Place to Access Internet/ E-resources by the Scientific Community

To know which place has been generally used by the scientific community to access Internet/ E-resources, questions are asked to them and the responses received have been shown in Figure: 5.13. Here respondents are allowed to give multiple responses, if they use more than one place to access Internet.

The survey finding as shown in Figure: 5.13; reveals that majority of the respondents (316; 60.6%), access Internet/ E-resources at most of the time from "home" which is followed by 231 (44.3%) respondents access Internet/ E-resources from "department" whereas 131 (25.1%) respondents access Internet/ E-resources from

"hostel/ quatter" and 116 (22.2%) respondents access Internet/ E-resources from "computer center". Further, only 58 (11.2%) respondents access Internet/ E-resources from "library". Moreover, 11 (2.1%) respondents use other interface for accessing Internet/ E-resources which include Internet café, laboratory.

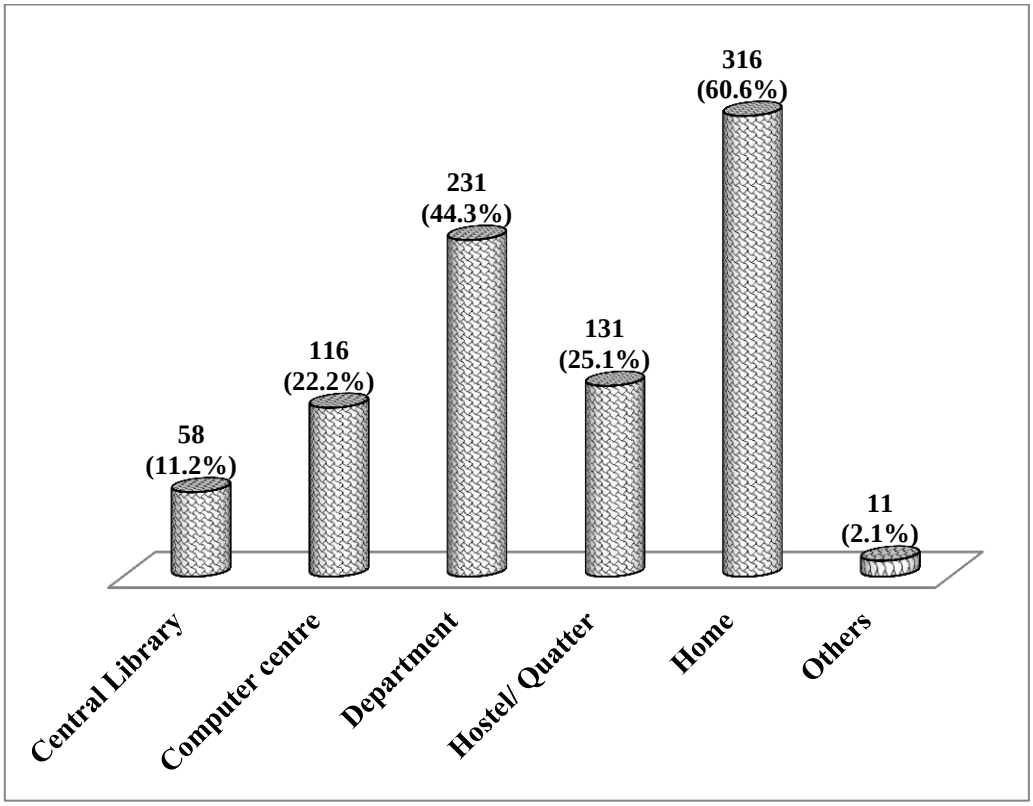

Figure: 5.13 Preference of Place to Access Internet/ E-resources by the Scientific Community

5.7.8 Preference of E-resource Search Pattern over Web by Scientific Community

To know the e-resource searching pattern over web/ Internet by Scientific Community; questions were asked and the responses received are shown in Table: 5.14. Majority of the respondents (250; 48.0%), carried out search most of the time by "Specific term/ Pin-pointed" which is followed by 157 (30.1%) respondents carried out search by "Broad Term" at most of the time whereas 94 (18.2%) respondents carried out search by using "Special Characters".

Table: 5.14 E-resource Searching Pattern (N= 521)

	Number	Percent
Broad Term followed by Narrow Term	157	30.1
Specific/ Pin-pointed	250	48.0
Special Character	94	18.2
NR	20	3.8

(Source: Computed from returned questionnaires)

Hypothesis Testing

NULL hypothesis: 17.

$H0_{17}$: There is no significant difference between different categories of scientific community library users and e-resource searching pattern.

ALTERNATIVE hypothesis: 17.

$H1_{17}$: There is a significant difference between different categories of scientific community library users and e-resource searching pattern.

A chi square test has been conducted which is associated between difference between different categories of scientific community library users and e-resource searching pattern; which has shown a significant relationship ($\chi 2$= 81.444, d= 4, $p<0.005$); thus alternative hypothesis 17 is supported, and null hypothesis 17 is rejected. Thus, there is a significant difference between different categories of scientific community library users and e-resource searching pattern.

This may be due to the fact that majority students (80; 41.9%) start searching by using broad term first; whereas faculty members 123 (74.5%) generally use either special characteristic or pin-pointed search and research scholar 118 (70.1%) generally starts search by pin-pointed or specific term.

NULL hypothesis: 18.

$H0_{18}$: There is no significant difference between gender and e-resource searching pattern.

ALTERNATIVE hypothesis: 18.

$H1_{18}$: There is a significant difference between gender and e-resource searching pattern.

A chi square test has been conducted which is associated between differences between gender and e-resource searching pattern, which has shown that no significant relationship ($\chi 2$= 4.595, d= 2, p<0.101, Eo= 52.59); thus null hypothesis 18 is supported, and alternative hypothesis 18 is rejected. Thus, there is no significant difference between gender and e-resource searching pattern. On other words, there are no differences in e-resource searching pattern between male and female respondents.

5.7.9 E-resource Searching Technique over Web by the Scientific Community

To know technique scientific community library user used for e-resource searching over Internet; questions are asked to the respondents and the received responses are shown in Figure: 5.14.

Majority of the respondents (472; 90.6%), carried out search by "Simple Search" technique which is followed by 211 (40.5%) respondents carried out search by "Boolean Search" technique whereas 195 (37.4%) respondents carried out search by "Phrase Search" technique. Moreover, 168 (32.4%) respondents use "Truncation Search" technique and 147 (28.8%) use "Field Search" technique.

It might be due to the fact that the respondents might not be having information regarding the search strategies to search relevant information. In this case, librarian plays a vital role by providing user's awareness programme to the scientific community library users for effective utilization of resources at less possible time.

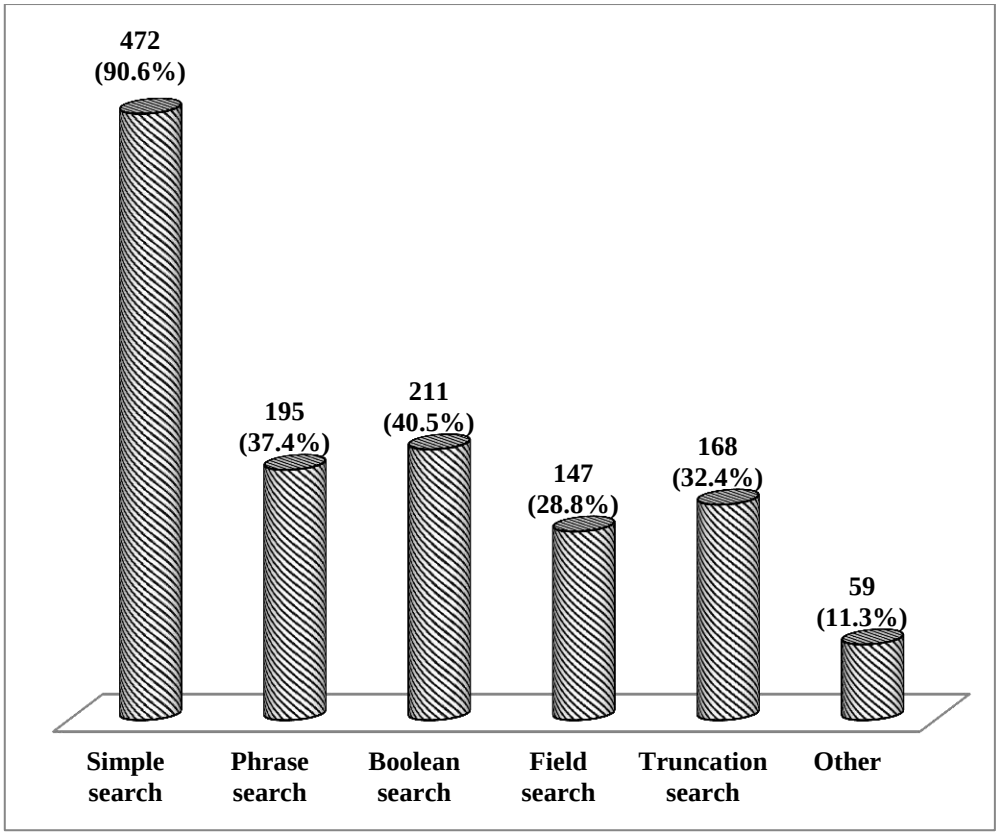

Figure: 5.14 Search Techniques Used for E-resource Search

5.7.10 Frequency of Website Evaluation by Scientific Community

In web, most of the information is available in unsystematic manner as per the need of a person. Further, most of the websites are in public domain, anyone can edit, modified or upload their views in most of the time. These lead to confusion among people about the authenticity of the website. Thus, evaluation of website is one of the most important needs at the present time. To know evaluation frequency of website used by scientific community; questions were asked to the respondents and the received responses are shown in Figure: 5.15.

Majority of the respondents (226; 43.7%) sometime evaluate the website bwhile starting search by any topic; which is followed by 213 (40.8%) respondents never evaluate the website before they search; whereas only 73 (14%) respondents used to evaluate the website always.

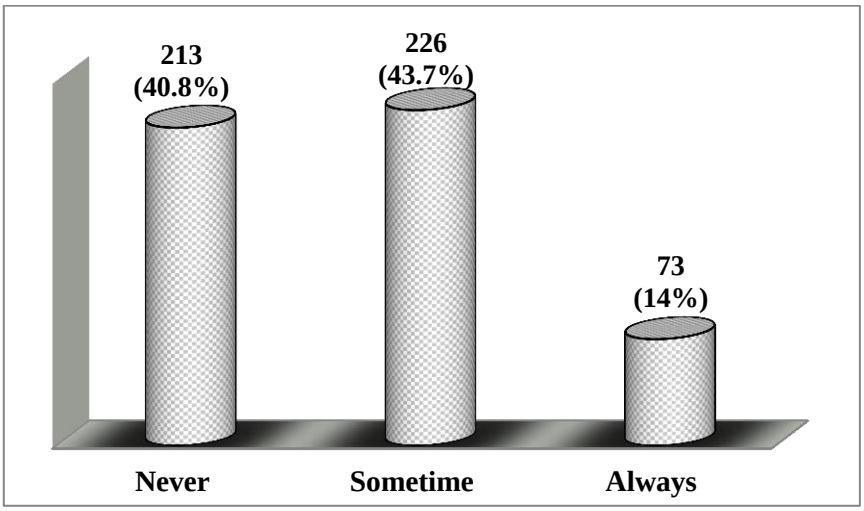

Figure: 5.15 Frequency of Website Evaluation by Library User

Those who are regular visit of website might have developed the various searching strategies to find out their desired information in less possible time after evaluating the authentic website properly.

Correlation analysis

Correlation coefficient analysis has carried out between different age groups with frequency of website evaluation; which showed strong positive relationship and that correlation is significant at the significance level of 5%. (Where, CoV= -0.578, p= 0.05 [2-tailed]). i. e. younger age groups, especially student community does not evaluate website very properly while search for an information.

5.7.11 Evaluation Criteria of Website by Scientific Community

Further, the respondents who generally evaluate the website (N= 299), questions have been asked to the respondents to know the evaluation criteria and the received responses are shown in Figure: 5.16.

Out of 299 (57.4%) respondents who generally evaluate the website, majority of the respondents 201 (67.3%) evaluate the website by “Content/ Knowledge” which is followed by 177 (59.5%) respondents evaluate the website by “find-ability of its information” whereas 173 (58.1%) respondents evaluate by “Current-ness/ out-date information”. Moreover, 115 (37.9%), 112 (36.9%) and 96 (31.6%) respondents evaluate the website by “Domain name”; “Authority/ creator of the page” and “Biasness towards a particular issue” respectively.

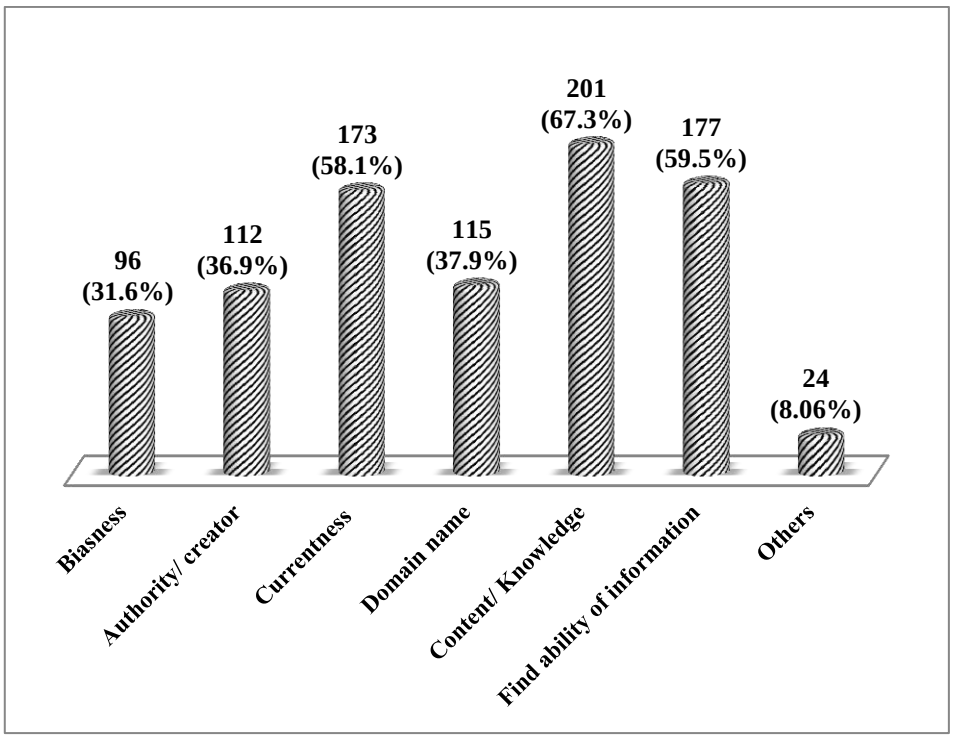

Figure: 5.16 Evaluation Criteria of Website by Scientific Community

5.7.12 Usefulness of E-resource Available in the University Library

To know usefulness of e-resource available in the university library; questions are asked to the respondents and the received responses are shown in Figure: 5.17.

Majority of the respondents (293; 56.2%) feel that the e-resource available in the university library are “Useful” which is followed by 85 (16.5%) respondents who feel

that the e-resource available in the university library are "Highly Useful" whereas 51 (9.8%) respondents opined that the e-resource available in the university library are "Not useful". Moreover, 54(10.4%) respondents feel that the e-resource available is not available in the university library whereas 38 (7.8%) does not provide any answer of this question.

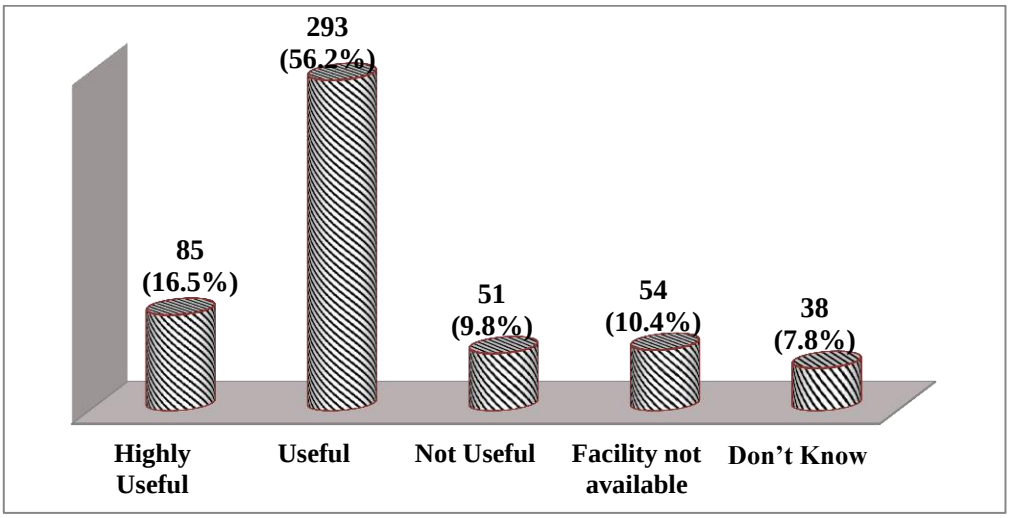

Figure: 5.17 Usefulness of E-resource Available in the University Library

The survey finding indicates that the usefulness of e-resource among the scientific community library users could be converted into highly useful by giving maximum numbers of orientation of e-resource usage pattern.

Hypothesis Testing

NULL hypothesis: 19.

$H0_{19}$: There is no significant difference between different categories of scientific community and usefulness of e-resource available under university library service.

ALTERNATIVE hypothesis: 19.

$H1_{19}$: There is a significant difference between different categories of scientific community and usefulness of e-resource available under university library service.

A chi square test has been conducted which is associated between difference between different categories of scientific community and usefulness of e-resource available under university library services; which has shown a significant relationship (χ^2= 81.78, d= 12, p<0.005); thus alternative hypothesis 19 is supported, and null hypothesis 19 is rejected. Thus, there is a significant difference between different categories of scientific community and usefulness of e-resource available under university library service.

NULL hypothesis: 20.

$H0_{20}$: There is no significant difference between different universities with usefulness of e-resource availability.

ALTERNATIVE hypothesis: 20.

$H1_{20}$: There is a significant difference between different universities with usefulness of e-resource availability.

A chi square test has been conducted which is associated between different universities with usefulness of e-resource availability; which has shown that no significant relationship (χ^2= 81.75, d= 12, p<0.547); thus null hypothesis 20 is supported and alternative hypothesis 20 is rejected. Thus, there is no significant difference between different universities with usefulness of e-resource availability.

This may be due to more availability of e-resource available under Tezpur University library service which is followed by Dibrugarh University library service. So, scientific community belong to those universities seem to feel affective e-resource availability, which are much useful for their academic needs. Further, scientific community belongs to Assam University, seem to feel little dissatisfied as less number of

e-resources availability. Whereas, scientific community belongs to Gauhati University, seem to feel less satisfied due to non-availability of various library resources.

Section-F

5.8 Problems & Suggestions Provided by the Scientific Community

5.8.1 Problems faced by the Scientific Community Library Users for Accessing Information

Here respondents were asked to rate themselves as they face problem while accessing to information from library. Here fourteen parameters were given to respondents and they were asked to rate them from 1 to 5; where 1 stands for "Not an issue/ Problem", 2 stands for "Very Less Problem"; 3 stands for "Less/ Moderate Problem"; 4 stands for "Much Problem" and 5 stands for "Extreme Issue/ Problem". The Table: 5.15 have shown the response given by all 521 respondents by rating with these parameters from 1 to 5 scales.

Thus, it is observed from the Table: 5.15 that most of the respondents faced extreme problem for lacking of relevant document/ information over web, (where, Mdn= 4, IQR= 1). These might be due to lack of awareness towards relevant websites, limited library web resource services, tremendous growth of information, etc.

Further, majority of the respondents also faced much problem for "less no of subscribed journals in relevant field", "non-availability of adequate material within library", "inability to search document from library" and "lack of current awareness services" (where, Mdn= 4, IQR= 2). These lead to conclude that most of the respondents mainly face problem due to improper collection development policy which leads to dissatisfaction among library users towards library services. Again, since all the library

users of this study belong to scientific community, so the needs of current trends/ information is highly essential for them. Moreover, searching the required document within library is also major problem faced by them.

Table: 5.15 Problem faced by Respondents in Accessing Information (N=521 each)

	1	2	3	4	5	NR	M	IQR
Lack of relevant searchable document/ information	5	5	14	146	163	188	**4**	**1**
Less no of subscribed journals in relevant field	68	33	65	100	191	64	**4**	**2**
Non- availability of adequate material within library	49	51	87	132	189	13	**4**	**2**
Inability to search document from library	55	57	50	127	171	61	**4**	**2**
No Current Awareness Services	80	59	66	127	99	90	**4**	**2**
No new/ attractive services from library	53	57	77	112	114	108	**4**	**3**
No resources sharing facility with nearest library	87	23	68	91	85	167	**3**	**2**
Lack of awareness of e-resource	56	58	93	93	44	177	**3**	**2**
Non-cooperation from library staff	114	25	37	72	41	232	**3**	**3**
Slow speed of Internet at university	150	63	64	54	29	163	**2**	**3**
Lack of time to visit the library	75	12	30	26	15	363	**2**	**3**
Language barrier for communication	124	3	12	10	7	365	**1**	**0**
Less space for sitting within library	120	10	47	27	0	317	**1**	**2**

(Source: Computed from returned questionnaires)

[Where, 1= Not an issue; 2 =Very Less Problem; 3 =Less/ Moderate Problem; 4 =Much Problem; 5= Extreme Problem]

Most of the respondents also feel “no new/ attractive service” to get their relevant document/ information from library leads dis-satisfaction (where, Mdn= 4, IQR= 3). But, the responses received in this case seem to be little polarized. This is may be due to scientific community who belong to Tezpur University, seem to have little satisfaction with the library services than rest other universities.

But, most of the respondents also faced problem for “no resources sharing facility with the nearest library” and “lack of awareness of e-resource” (where, Mdn= 3, IQR= 2). This is might be due to the fact that scientific community sometime gets their relevant document to their nearest library. Again, scientific community belongs to student category, face lack of awareness towards e-resources. Further, scientific community also faced sometime very much problem for “non-cooperation from library staff” (where, Mdn= 3, IQR= 3). But, the response received in this case seems to be little polarized. This is might be due to the fact that misbehavior from library professional or non-availability of relevant document within library leads to dissatisfaction among users.

While respondents also faced some problem for “slow speed of Internet at university” and “lack of time to visit the library” (where, Mdn= 2, IQR= 3). But, the response received in this case seems to be little polarized. This is mainly due to universities such as Gauhati University and Assam University, Internet connectivity is comparatively slow in universities such as Tezpur University and Dibrugarh University. Again student category gets very less time to visit library for their day to day class routine. It is also found that scientific community generally face very less problem for “language barrier for communication” (where, Mdn= 1, IQR= 0) and “less space for sitting within library” (where, Mdn= 1, IQR= 2). Therefore, as per the finding of the study university libraries under the study needs to look into their services to meet the requirement of the library users.

5.8.2 Suggestions Provided by Scientific Community

To improve the library services or to overcome difficulties, questions were asked to the scientific community library users. For each parameter, they were asked to mark by either "Yes" or "No". The responses received are shown in Table: 5.16.

Table: 5.16 Suggestion Provided by Scientific Community (N=521 Each)

	Frequency
To develop adequate collection.	406 (77.9%)
Introducing innovative practices in library services	338 (64.8%)
Mobile alerts may be provided for new arrival	331 (63.5%)
To organized user education program	306 (58.7%)
To organized e-resources training program.	299 (57.4%)
Current Awareness Services should be provided	283 (54.4%)
Resource sharing facilities should be provided	249 (47.8%)
Regular power supply	208 (39.9%)
Library should be keep open after the class hour	171 (32.8%)
More no. of Internet terminal should be added to each department.	162 (31.0%)
While access Internet privacy of user must be taken care	147 (28.2%)
Reading room capacity should be increased	105 (20.2%)

(Source: Computed from returned questionnaires)

From Table: 5.16, has shown that the majority of the respondent 406 (77.9%) suggests "to build adequate collection" as par their need which is followed by 338 (64.8%) respondents suggest to "introduce innovative practices in library services", whereas 331 (63.5%) respondents suggest "e-mail/ mobile alerts may be provided for new arrival".

Further, 306 (58.7%) respondents suggest “to organized user education program”; whereas 229 (57.4%) respondents suggest “to organized e-resources training program”. 283 (54.5%) respondents further suggest “current awareness services should be provided” while 249 (47.8%) respondents suggest “resource sharing facilities should be provided”. Moreover, 208 respondents suggest (39.9%) “regular power supply”.

Again, 171 (32.8%) numbers of respondents further suggest “library should be keep open after the class hour” which is followed by 162 (31.0%) suggests “more no. of Internet terminal should be added to each department”; whereas 147 (28.2%) respondents suggest “while access Internet privacy of user must be taken care” and 105 (20.2%) respondents suggest “reading room capacity should be increased”.

Thus, it is observed from the problem faced and provided suggestions that the majority of the respondents believe to develop adequate collection development policy as per the need of scientific community. More numbers of journals must be subscribed for them as per their respective subjects. Most of the respondents also suggest to introduce innovative services by library such as e-mail alert, mobile alert, CAS, information on new arrivals, comfortable seat capacity, etc. Further, library should take an initiative to organize awareness towards growth of information and relevant website for getting required information.

Further, as due to regular class routine, scientific community mainly student; did not get time to visit library, so, library is necessity to remain open after the regular class periods. Sometime among student community, those who stay far away from university, they have to leave university after the class period. So, university authority should take necessary action to arrange transportation services for them.

The other suggestions made by the scientists are many which can be summarized as below:

- Need for developing study material;
- Resource sharing between library must be increase;
- Adequate research journals, mainly e-journals should be provided;
- Library services should be more friendly;
- Library professional should provide response to the scientist for their query;
- Workshops/seminars/conferences must be provided by focus on issues related to the library users.

5.8.3 Personal Comments Provided by Scientific Community

Lastly question was asked to scientific community about to give personal comments on any issue which may be helpful for library services or solving information searching problem. Thus, some most common personal comments provided by scientists are shown in a more generalized form below:

- To find out mechanism for require e-journals in their relevant fields;
- More e-books should be subscribed;
- Internet speed needs to be increase;
- Perpetual access of journal should be continued;
- Wi-Fi should be added to all departments for better e-resource assess;
- Mechanism should be develop to get appropriate services like, Web of Science, Sci-finder, Chem-finder, etc.;
- Comfortable Seating arrangement is very essential at library for long time study;
- Sometime, it was noticed that scientist are very much dis-satisfied with library due to non-responses of their query, so, LIS professional should look into it;
- Proper guideline should be developed to get access of the required materials.

Section- G

5.9 University Library Management Scenario

5.9.1 Distribution of Questionnaire and Responses Received from Librarian

To verify or to generate more accurate conclusion, the responses received from students, research scholar and faculty members are matched with the facilities available in the library, and responses received from the university librarian. There are total 4 numbers of questionnaires; one for each librarian has been distributed among four different universities of Assam under the study and responses received are recorded. In all cases; researcher has visited all library personally and met with the librarian as per prior appointment for interview. Thus, out of total 4 numbers of questionnaire distributed to the librarian of those universities under the study; all (4; 100.0%) duly filled questionnaires were received during the said period.

5.9.2 Collection Details of University Libraries

In order to know the collection of the university libraries; questions were asked to the librarian and the responses received have been shown in Table: 5.17. From the Table: 5.17; it reveals that all university libraries have huge collections of traditional as well as e-resource documents such as text books, advance level books, reference books, journals, newspapers, theses, CD/ DVD ROM, govt. reports and other special types of collections.

Again, from the analysis of the Table: 5.17; it also shows that Gauhati University Library has the highest collections of text books/ reference books (2.5 lakhs above numbers; 25.0%); which is followed by Dibrugarh University Library collections ranging from 1.5 lakhs to 2 lakhs numbers (25.0%); whereas Assam University Library collections ranging from 1 lakh to 1.5 lakhs numbers (25.0%) and Tezpur University

Library collections ranging from 50001 to 1 lakh numbers (25.0%). In case of Journals; majority of the libraries (75.0%) (Such as Assam University, Tezpur University and Gauhati University) have collections from 100 to 150 numbers whereas only 1 (25.0%) i. e. Dibrugarh University Library has the highest collections of Journals 151-200 numbers.

Table: 5.17 Library Collection Details (N=4)

		GU	TU	DU	AU	Percentage
Text/ Reference books	Below 50000					0.0%
	50001 above -1 lakh		✓			25.0%
	1 lakhs above – 1.5 lakhs				✓	25.0%
	1.5 lakhs above – 2 lakhs			✓		25.0%
	2 lakhs above – 2.5 lakhs					0.0%
	2.5 lakhs above	✓				25.0%
Journals	Below 100					0.0%
	100-150	✓	✓		✓	75.0%
	151-200			✓		25.0%
	200 and above					0.0%
Newspapers	Below 10		✓			25.0%
	11-15					0.0%
	16-20	✓			✓	50.0%
	21 and above			✓		25.0%
Theses	Below 1000		✓			25.0%
	1001-2000				✓	25.0%
	2001-3000			✓		25.0%
	3001 and above	✓				25.0%
Other collections		✓	✓	✓	✓	100.0%

(Source: Computed from returned questionnaires)

Further, for collections such as newspapers; majority of the libraries (50.0%) (Such as Assam University and Gauhati University) procure 16-20 different types of newspapers; which is followed by Dibrugarh University Library (25.0%) procures more than 21 numbers different types of newspapers; whereas, Tezpur University Library (25.0%) procure very less (below 10 numbers) newspapers.

In case of thesis, Gauhati University library (25.0%) has the highest collections of thesis (with more than 3001 numbers); which is followed by Dibrugarh University Library (25.0%) has the collections ranging from 2001 to 3000 numbers; whereas Assam

University Library (25.0%) has the collections ranging from 1001-2000 numbers and Tezpur University Library (25.0%) has very less collections of thesis (below 1000 numbers).

Moreover, all these university libraries (100.0%) also have some common types of collections such as government reports, dissertations, CD-ROM, etc. Further, Gauhati University library has special collections such as manuscripts, and Bhupen Hazarika Collections; whereas Dibrugarh University library has huge numbers of back volume collections which is more than 17000 numbers. Similarly, Tezpur University library has huge numbers of back volume collections which is more than 7500 numbers.

It is interesting to note that most of the University Libraries of Assam (75%) procuring e-journals or using e-journals available either under consortia or procured by them and thus decreasing the numbers of printed journals subscriptions whereas only Gauhati University Library still prefer to subscribe printed journals along with e-resource facilities. In this way universities are encouraging the use of e-resource available under consortia. It is also found from the study that almost all libraries have started to take initiative to develop collections such as books, e-journals, etc.

5.9.3 Status of Technical House Keeping Operation of the Library

To know about the classification scheme, cataloguing code, charging system, lending system of the library; further questionnaires were asked to the librarian and the response received are shown in Table: 5.18. Table: 5.18 shows that all four libraries (100.0%) using DDC as classification scheme for arrangement/ classify the document as per subject.

Further, it is very interesting to find out that now a day's all four libraries (100.0%) created their own database of collections. So, all of these libraries stop making

of card catalogue; though the earlier card catalogues can be visible in the card cabinet. All university libraries under the study also have put a good numbers of OPAC terminals which are extensively used by the library users.

Again, all four libraries (100.0%) using AACR II as cataloguing code while making the entry. Moreover, about charging system, different universities used to have different charging system. Tezpur University and Dibrugarh University used to have Single Card System; whereas Assam University used to have Two Cards System and Gauhati University used to have Browne Charging system.

Table: 5.18 Status of Technical House Keeping Operation in the Library (N=4)

	AU	**GU**	**TU**	**DU**	
Classification Scheme	*DDC*	*DDC*	*DDC*	*DDC*	100%
Physical Form	*Card Catalogue (now stopped)*	*Card Catalogue (now stopped)*	*Card Catalogue (now stopped)*	*Card Catalogue (now stopped)*	100%
Cataloguing Code	*AACR II*	*AACR II*	*AACR II*	*AACR II*	100%
Charging System	*Two Cards (now stopped)*	*Browne (now stopped)*	*Single Card (now stopped)*	*Single Card (now stopped)*	Two Cards: 50% Browne: 25% Single Card: 25%
Lending System	*Electronic*	*Electronic*	*Electronic*	*Electronic*	100%

(Source: Computed from returned questionnaires)

5.9.4 Status of Library Automation/ Computerization

To know about the library automation/ computerization details of the library; questions were asked to the Librarian and the responses received are shown in Table: 5.19. Table: 5.19 which show that university libraries are using various kinds of library management software. SOUL is used by majority (50%) of the libraries viz. Gauhati University and Dibrugarh University library; whereas KOHA and LIBSYS is used by only in Assam University library (25%) and Tezpur University library (25%) respectively.

Further, it is also found that except Assam University library; remaining all 3 (75.0%) libraries are fully automated. Assam University has started their automation process and it is providing partially automated service mainly in cataloguing/ circulation section.

Table: 5.19 Library Automation/ Computerization Details (N=4)

	AU	**GU**	**TU**	**DU**	
Library Management Software	KOHA	SOUL	LIBSYS	SOUL	SOUL: 50% KOHA: 25% LIBSYS: 25%
Status of Automation System	Partially Automated	Fully Automated	Fully Automated	Fully Automated	Fully Automated: 75% Partially Automated: 25%
Automated Catalogue Searching	Web-OPAC	OPAC	Web-OPAC	OPAC	Web-OPAC: 50% OPAC: 50%
Content Management Software	No	No	No	No	100%
Institutional Repository/ Software Used	No	No	Yes (Dspace)	No	Yes: 25% No: 75%
RFID Technology	No	No	No	No	100%

(Source: Computed from returned questionnaires)

Again, form the Table: 5.17, it is observed that two university libraries (50%) viz. Assam University and Tezpur University libraries are providing Web-OPAC facility for cataloguing search; whereas rest two university libraries (50%) viz. Gauhati University and Dibrugarh University libraries are providing OPAC facility to their users.

The study also shows that except Tezpur University no other universities installed any “Digital Library Software” to build their institutional repository. Tezpur University is using Dspace Digital Library Software. Further, no university has installed Content Management Software or using RFID Technology for their library services.

It further reveals from the study that though all university libraries started providing services to the users through automated library management system, but it is essential to add new technology to provide effective library services such as to build instructional repository, installation of RFID Technology, development of content management systems, etc.

5.9.5 Status of Networking/ Resource Sharing Facility of the Library

To know about the networking/ resource sharing facility of the library; questions were asked to the librarian and the response received are shown in Table: 5.20. Table: 5.20 shows that all university libraries (100%) are providing resource sharing facility to their users by mutual sharing basis. Moreover, all university libraries (100%) have their own server and Internet connectivity. All university libraries (100%) are also members of INFLIBNET library network. Further all four university library are members of UGC-INFONET Consortia. Moreover, except Dibrugarh University all universities (75%) are also members of DELCON Consortia.

Table: 5.20 Status of Library Networking/ Resource Sharing Facility (N=4)

	AU	GU	TU	DU	
Own Server in Library	Yes	Yes	Yes	Yes	100%
Internet Connectivity within Library	Yes	Yes	Yes	Yes	100%
Resource Sharing facility	Yes	Yes	Yes	Yes	100%
Member of Library Network	Yes (INFLIBNET)	Yes (INFLIBNET)	Yes (INFLIBNET)	Yes (INFLIBNET)	100%
Consortia	UGC-INFONET, DELCON	UGC-INFONET, DELCON	UGC-INFONET, DELCON	UGC-INFONET	INFONET: 100% DELCON: 75%

(Source: Computed from returned questionnaires)

5.9.6 Status of Human Resource Strength in Library

Library and Information Professionals plays very importance role to provide service in the present digital era. To know what is the strength LIS professional in these Libraries; questions were asked to the respective librarian and the responses received are shown in Table: 5.21. Table: 5.21 which show that majority libraries (3; 75%) filled up the post Librarian (viz. Gauhati University, Tezpur University and Assam University). For the post of Deputy Librarian, it is found that majority libraries (3; 75%) filled up the same post (viz. Dibrugarh University, Tezpur University and Assam University) Thus 75.0% library of Assam under the study already filled the post Librarian and Deputy Librarian.

Whereas, all the university libraries (4; 100%) under the study filled up the post Assistant Librarian; out of which majority of Assistant Librarian (5; 50.0%) belong to Gauhati University; which is followed by Assam University 3 (30.0%) numbers and 1 (10.0%) number in each Tezpur University and Dibrugarh University respectively.

Table: 5.21 Status of Human Resource Management in Library (N=4)

	AU	GU	TU	DU	
Librarian	1	1	1	--	Yes: 75% N0: 25%
Deputy Librarian	1	--	1	1	Yes: 75% N0: 25%
Asst. Librarian	3	5	1	1	Yes: 75% N0: 25%
Information Scientists	1	--	1	--	Yes: 50% N0: 50%
Professional Assistant	3	7	2	5	Yes: 100% N0: 00%
Semi-professionals	5	--	2	--	Yes: 50% N0: 50%
Library Assistant	10	8	3	4	Yes: 100% N0: 00%
Non-professionals	4	32	7	23	Yes: 100% N0: 00%

(Source: Computed from returned questionnaires)

Again, from the study it reveals that Information Scientists is present only in central university libraries of Assam (50%) (viz. Assam University and Tezpur University). Further, it is also found that majority of Professional Assistant (7; 41.2%) belong to Gauhati University; which is followed by Dibrugarh University 5 (29.4%) numbers; Assam University 3 (17.7%) numbers and Tezpur University 2 (11.7%) number respectively. Moreover, Semi-professional Assistant, Library Assistant, Non-professionals are also presents in all those university libraries.

5.9.7 Library Usage Statistics on Daily Basis

To know how many library users belong to scientific community usually come to the library; questions were asked to the respective Librarian. But, it is found that no libraries were maintaining user's statistics separately as per science or social science background community separately. So, responses provided by them shows all types of library users.

Table: 5.22 Status of Human Resource Management in Library (N=4)

	Circulation	Periodical	Reference	General	Total
AU	90	45	20	75	230
GU	108	42	43	148	341
TU	146	48	47	102	343
DU	74	34	32	84	224
Total	418	169	142	409	1138

(Source: Computed from returned questionnaires)

Table: 5.22; which show the overall library visit statistic by the library user's per day basis. Similarly, Figure: 5.18; reveals that majority of the library users (146; 35%) access daily the circulation section from Tezpur University which is followed by Gauhati University library users 108 (26%). Whereas usage pattern of circulation section

from Assam University (90; 22%) and Dibrugarh University (74; 18%) comparatively low.

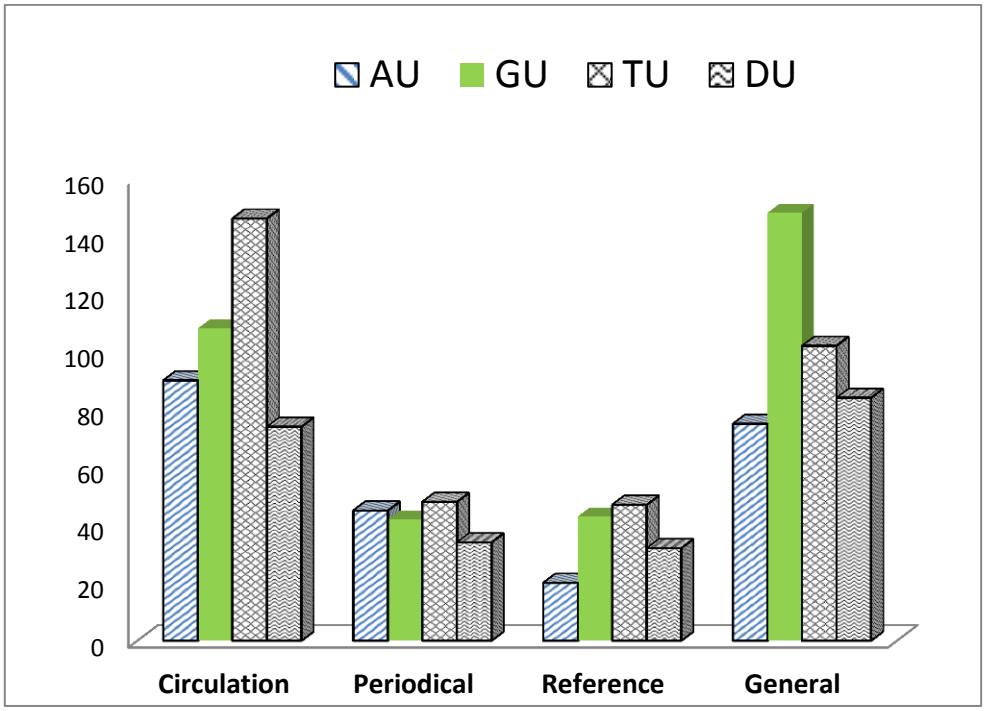

Figure: 5.18 Library Usage Statistics on Daily Basis

But, majority of the library users (148; 37%) visit general textbook section from Gauhati University which is followed by Tezpur University library users (102; 25%). Whereas usage pattern of general textbook section from Assam University (84; 21%) and Dibrugarh University (75; 19%) comparatively low.

Further, library users visit pattern towards periodical section and reference section almost equally on daily basis from all four libraries under the study. Thus it is clear from the result that library usage number is continuously decreasing; which is not a good sign of educational institutes. Library has to develop a proper mechanism to attract its users. But, due to the development of ICT and its impact within library has leads to change the library usage pattern. Library users now can access the document by siting their departments or from the home.

5.9.8 Provision of User Orientation Program in University Library of Assam

Further, to know the numbers of user orientation program provided by library; questionnaires were asked to the respective librarian and the responses received are shown in Table: 5.23.

Table: 5.23 Numbers of User Orientation Program Provided by Library (N=4)

	AU	GU	TU	DU	
Orientation Program	Yes	Yes	Yes	Yes	100%
Frequency of Orientation Program	Annually	Annually	Bi-annually	Annually	Annually: 75% Bi-annually: 25%

(Source: Computed from returned questionnaires)

Table: 5.23 shows that all four universities (100%) are providing user orientation program to its users. Out of four universities; except Tezpur University; rest three universities provide orientation program annually (75%); whereas Tezpur University provide orientation program bi-annually (25%).

5.9.8 Opinion of Librarian Regarding the Purpose of Library Use by the Library Users

Further, to know the primarily purpose of library use by the scientific community; questionnaires were asked to the respective librarian and the responses received are shown in Table: 5.24. Librarian was asked to rate from rank 1 to 5 as per their choice.

The study has shown that all Librarians (4; 100%) feel that issue and return of the book is the main purpose of library visit by the library users; which is placed at 1st rank which is followed by (3, 75%) reading book/ newspapers etc. and placed at the 2nd rank order whereas to access Internet/ e-resource from the library services is placed at the 3rd rank order. Further, preparation to make note for examination/ class by the student, to get up-to-date with current information and for reference search/ consultation is placed as 4th, 5th

and 6th rank order respectively. This result shows that as per librarian, users are mainly coming to the library for issue and return of the books at all university libraries under the study at Assam.

Table: 5.24 Opinion of Librarian Regarding the Purpose of Library Use by the Library Users (N=4)

	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
For issue and return of the book	**4 (100%)**	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
For reading book, newspapers etc.	0 (0.0%)	**3 (75%)**	1 (25%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
To access Internet/ E-resource	0 (0.0%)	0 (0.0%)	**2 (50%)**	1 (25%)	1 (25%)	0 (0.0%)
Preparation to make note for exam/ class.	0 (0.0%)	0 (0.0%)	1 (25%)	**3 (75%)**	0 (0.0%)	0 (0.0%)
To get up-to-date with current information.	0 (0.0%)	1 (25%)	0 (0.0%)	0 (0.0%)	**3 (75%)**	0 (0.0%)
For reference search/ consultation	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	**4 (100%)**

(Source: Computed from returned questionnaires)

5.9.8 E-resource Usage Statistic for the Respondents

Further, to know the e-resource usage pattern by the scientific community; questions were asked to the respective librarian to provide e-resource usage statistic of downloaded/ used articles and the responses received during the period July, 2013 to July, 2014 are shown in Table: 5.25.

Table: 5.25 E-resource Usage Statistic for the Respondents (N=4)

Download Paper	AU	GU	TU	DU	
Below - 50000					0.0%
50001-75000	✓				25%
75001-100000		✓		✓	75%
100001 above			✓		25%

(Source: Computed from returned questionnaires)

The study has shown that; scientific community library users belong to Tezpur University library users has download more than 1 lakh e-journals at maximum extent at above cited period; which is followed by Gauhati University and Dibrugarh University library users has download 75001-1lakh of e-journals each; whereas Assam University library users has download 50001-75000 numbers of e-journals.

5.9.9 Opinion of Librarian with Regards to Most Needed Improvement Required for Library Services

Again question was asked to the Librarian about to mention the most needed improvement that they feel essential for library services in the present time to serve library users. The responses provided by librarian are shown in a more generalized form below:

- All University Libraries are planning for content management development;
- Almost all University Libraries are going to introduce new innovative technology;
- They are willing to introduce RFID technology;
- Increases of reading roam seating capacity with ergo-metric design furniture;
- To create conducive environment of reading ambience in library for making optimum utilization of resources;
- To import effective users orientation program/ users educational program for effective use of library services.

5.9.10 Personal Comments Provided by Librarian

Last question was asked to the librarian about to give personal comments on any issue which may be helpful for improving university library system or solving

problem of library user's information searching pattern. Thus, some most common personal comments provided by librarian are shown in a more generalized form below:

- There is a need for everyone to take part in orientation program provided by the library;
- After subscribing the journal; proper utilization should be made;
- Proper logistic and financial support should be provided from the higher authority;
- Fund constrain should be solved with a proper mechanism;
- There is a need to appoint more efficient LIS professionals.