

**AWARENESS AND USE OF N-LIST E-RESOURCES  
OF THE SELECT DEGREE COLLEGES AFFILIATED  
TO PANJAB UNIVERSITY, CHANDIGARH; A  
COMPARATIVE ANALYSIS**

Dr. Shivani Kaushal

Dr. Rupak Chakravarty

This research paper explains the usage of the N-LIST E-resources among the student and faculty members of the various select Degree Colleges affiliated to Panjab University, Chandigarh. A questionnaire method was used as a tool for collection of data from the 32 select degree colleges in Punjab and Chandigarh. The total data was collected from the 466 out of 513 respondents. The total response rate is 90.84%. Out of 466 respondents, total 286 are users (faculty and student) respondents and 180 are non-users (faculty and student) respondents. The statistical test have been applied and the inferences have been drawn thereof.

**Keywords:** E-Books, E-Journals, Bibliographical Databases, N-LIST, INFLIB-NET, Usage of E-Resources, Degree Colleges of Panjab University, Statistical Analysis, Consortia

---

Dr. Shivani Kaushal  
Librarian  
GGDSD College  
Kheri Gurna, Banur

Email: shivanijalota@gmail.com

And

Dr. Rupak Chakravarty  
Associate Professor  
Department of Library  
and Information Science,  
Panjab University,  
Chandigarh - 160014

Email id: rupak2811@gmail.com

**INTRODUCTION**

Since times immemorial, the forms of library co-operation have undergone a massive transformation. While it initially manifested itself in the form of union catalogue, storage facilities, collection development, and human resources at local, national, and regional level, with time it transformed into Inter-Library Lending (ILL) services wherein co-operating libraries agreed to enter into borrowing and use of materials from other libraries. This form of co-operation enabled libraries to borrow books and periodical articles which were not available locally.

With the advent of resource sharing, the Library Consortia have brought economy, efficiency and equality in information availability and its usage. Through Library Consortia, the gap between information resource-rich libraries and resource-deficient libraries is expected to be bridged. Although, there are many consortia in India like UGC-INFONET Digital Library Consortia, INDEST Consortia, CSIR Consortia etc which have already gained the popularity in India. Yet, N-LIST is one of such consortia which helps to bridge this gap and provides access to the E-resources to its users.

### **N-LIST: AN INITIATIVE OF NMEICT**

The National Mission on Education through Information and Communication Technology (NMEICT) was launched on 3<sup>rd</sup> Feb, 2009. It initiated a project called “National Library and Information Services Infrastructure for Scholarly Content (N-LIST)”, popularly known as N-LIST which was formally launched by Shri Kapil Sibal, Union Minister for Human Resource Development, on 4<sup>th</sup> May, 2010. The N-LIST Project is being jointly executed by the (University Grants Commission-Information Network) UGC-INFONET Digital Library Consortium, INFLIBNET Centre and the INDEST-AICTE Consortium, Indian Institute of Technology (IIT) Delhi. The project provides the cross-subscription to e-resources subscribed by the two Consortia, i.e. subscription to INDEST-AICTE resources for universities and UGC-INFONET resources for technical institutions; and the access to selected e-resources to colleges.

The Faculty and the students from the colleges covered under section 12B/ 2F of UGC Act are eligible to access e-resources through the N-LIST project. These colleges are required to register themselves on the N-LIST Website. During the last three years, the collection has increased from 2,100 to 6,000 e-journals and from 51,000 to 1, 00,000 e-books (ref. 2 homepage), subscribed under the N-LIST Project.

### **REVIEW OF LITERATURE**

**Akinola (2009)** obtained the results from her study which revealed that majority of the respondents (35.4%) from the University of Ibadan sought information to update knowledge. It was also found that the respondents also sought information for writing of papers or books, reading, and for preparing class lectures. The study on Information seeking behaviour of Social Science Faculty was done by **Chattwal (2014)** which indicates the pen-drive is most preferred as an external storage device due to its large storage capacity as well as convenience of

usage was found to be the most preferred by 50.20% participants database appears to be the most suitable usage pattern for the University faculty members. Present study indicates that the main reasons for not using N-LIST E-resources are due to ‘lack of awareness’ by student non-users respondents. A similar study by **Nikam & Pramodini (2007)** indicates that reasons of non-use of UGC-INFONET resources by the Faculty Members and research scholars was 59.50% of respondents attributed the reason as lack of training/ orientation. The other reason included 28.50% of respondents attributed the reasons as ‘lack of awareness’ whereas 10.50% opted ‘Aware but internet connection is not proper’. The authors concluded that the use was marginal and the scientist in the Mysore University Campus need constant guidance and training to maximise the use of UGC-INFONET e-resources. The similar study by **Bhardwaj & Walia (2012)** analyse the rating of the quality of the Electronic Resources in the St. Stephens College library, where majority of the respondents (52.8%) agreed that the ‘**Quality of the N-LIST e-resources are excellent**’ while 39.68% of the respondents rated the quality of the N-LIST e-resources were good. The authors also concluded that most of the respondents rated N-LIST e-resources very good. The similar study by **Chikkanmanju and Kumbar (2015)** identified the level of satisfaction of student respondents about the information retrieved through the N-LIST E-resources of the Tumkur University. The study reveals that 46.86% opined that the aided college students are extremely satisfied with the information retrieved through the N-LIST E-resources.

### **OBJECTIVES OF THE STUDY**

The present study is an attempt to find out the accessibility of N-LIST E-resources and the usage trends used by the faculty and students of the Panjab University, Chandigarh.

The study was conducted with the following objectives:-

1. To analyze and compare the usage amongst the faculty and student users of the select Degree Colleges of Panjab University, Chandigarh.
2. To study the frequency and purpose of the usage of e-resources by students and faculty members.
3. To analyse and compare the external storage media used by the faculty and student users of the select Degree Colleges of Panjab University, Chandigarh.
4. To study the usefulness of the N-LIST E-resources amongst the faculty and student users of the select Degree Colleges of Panjab University, Chandigarh.

**Hypothesis: Hypotheses  $H_0$  1** - There is no significant variation in the usage of e-resources across faculty members and student of the member colleges.

**$H_1$  1** - There is significant variation in the usage of e-resources across faculty members and student of the member colleges.

### RESEARCH METHODOLOGY

A survey method would be employed to meet the objectives of the study. For collecting the primary data, a structured questionnaire have been designed to determine the opinion of the users regarding the N-LIST e-resources, library and management support, and the infrastructural facilities being provided to the users in their respective colleges. In order to seek valuable information from the students, faculty and librarians; five sets of questionnaires have been devised for optimum data collection, first set would be addressed to faculty users and second to the students users. The third and fourth questionnaire would be addressed to the student non-users and faculty non-users, respectively. The fifth set is for the librarians.

Besides the questionnaire, the researcher will rely on her personal observation for seeking further information from the respondents. A pilot survey will be conducted to seek the right directions for the study. The research methodology facilitates the accumulation of information from the respondents in various settings under parameters relevant to the study.

### UNIVERSE OF THE STUDY

The population of the present study comprises of 56 member colleges of the N-LIST Project. These 56 colleges are located in Punjab and Chandigarh and affiliated to Panjab University. Out of these 56 member colleges, only those colleges which have at least 15 registered users of the N-LIST project have been included in purview of the study. After applying this criterion, the number of colleges to be surveyed for the purpose of data collection comes down to 32. According to the pilot survey, the total universe of the study comes out to be 3421 users from 32 N-LIST member colleges.

### SAMPLING

For determining the sample size for this study, the researcher conducted a pilot survey. According to the pilot survey, the population consists of two strata i.e. the faculty members (FM) and the students (S). The pilot survey also revealed that the approximate number of faculty members and the students are 1664 and 1757, respectively. For determining the sample size, the principle of Krejcie and Morgan (1970) „Table for determining sample size from a given population“ was taken as a background. According to this table, the appropriate sample was about 346 for the 12 universe of 3500, but the size of the sample was increased to 513 i.e. 15% of the total population (3421) so as to increase the reliability and validity of the study.

For determining the faculty and students sample size, the Proportionate Random Stratified Sampling (PRSS) Method has been implemented:

**Table 1: Mathematical Formula for PRSS**

$nh = (Nh / N) * n$ <p>Where</p> <p>nh– The sample size of the stratum h.</p> <p>Nh – The population size of the stratum h.</p> <p>N – The total population size.</p> <p>n – The total sample size.</p>
---

After applying the above formula, the sample size of the Faculty Members and Students stratum has been calculated. The proportionate value is as under:

In the present study, the total population size is 3421 in which 48.64% (1664) are faculty members and 51.35 % (1757) are student. The sample size of faculty members and student came out to be 250 i.e. 48.73% and 263 i.e. 51.27%, respectively. The response rate is 90.84%. Out of 466, 61.37% are user respondents and 38.63% are non-users respondents. The above figure demonstrates that the response rates of the users are higher than that of the non-users. Table 2 demonstrates the faculty responses which are divided into faculty user respondents i.e. 64.86% (144) and faculty

**Table 2: Response Rate**

Stratum	Population Size N (%)	Sample Size N (%)	Users Response N (%)	Non - users Response N (%)	Total Response N (%)
Faculty	1664 (48.64%)	250 (48.73%)	144 (64.86%)	78 (35.14%)	222 (88.80%)
Student	1757 (51.36%)	263 (51.27%)	142 (58.20%)	102 (41.80%)	244 (92.78%)
Total (N %)	3421 (100.00%)	513 (100.00%)	286 (61.37%)	180 (38.63%)	466 (90.84%)

**Table 3: College wise response rate**

Sl. No.	College Name	Librarian Ques.	Student Ques.		Faculty Ques.	
			User	Non User	User	Non User
	<b>Description</b>					
1	B.C.M. College of Education, Ludhiana	1	0	5	1	3
2	D.A.V. College of Education, Hoshiarpur	1	44	6	4	1
3	Dev Samaj College for Women, Ferozepur	1	0	0	4	3
4	G.H.G. Khalsa College of Education, Gurusar Sadhar	1	0	0	1	2
5	Gobindgarh College of Education	1	0	0	2	0
6	Gobindgarh Public College	1	0	0	2	0
7	Govind National College, Ludhiana	1	0	0	6	0
8	Gujranwala Guru Nanak Khalsa College, Ludhiana	1	0	0	2	0
9	Guru Nanak College for Girls, Muktsar	1	0	0	5	1
10	Guru Nanak Girls College, Model Town, Ludhiana	N.A.*	0	0	0	0
11	G.N. National College, Doraha	1	3	12	2	0
12	Guru Teg Bahdaur Khalsa College of Education, Dasuya, Hoshiarpur	1	0	0	0	6
13	J.C. D.A.V. College, Dasuya	1	0	0	5	1
14	Khalsa College for Women, Ludhiana	N.A.**	0	0	3	4
15	Khalsa College Gardiwala	1	0	0	2	1
16	A.S College, Khanna	N.A.*	6	3	4	1
17	SGGS College, Mahilapur	1	0	3	3	1
18	BKM College of Education, Balachaur	1	0	0	5	2

19	MBBGRC College of Education, Mansowal	1	1	0	2	1
20	Dev Samaj College, Sector 45	1	0	0	3	2
21	Dev Samaj College of Education, Sector 36	1	0	6	2	1
22	GGDSD College, Sector 32	1	7	3	16	4
23	Govt. College for Boys, Sector 11	1	5	3	15	7
24	Govt College of Commerce and Business Admin, Sector 42	1	65	55	3	1
25	Govt College of Education, Sector 20	1	3	0	4	1
26	Guru Gobind Singh College for Women, Sector 26	1	0	0	5	6
27	Govt. College for Girls, Sector 42	1	0	0	9	6
28	P.G Govt College, Sec 46	1	0	0	7	4
29	Govt. Home Science College, Sector 10	1	0	0	3	1
30	DAV College, Sector 10	1	8	6	9	5
31	Guru Gobind Singh College, Sector 26	1	0	0	2	9
32	Govt. College For Girls, Sector- 11	1	0	0	11	4
TOTAL		29	142	102	144	78

non-user respondents are 35.14% (78). Similarly, the response rate of student’s users and non-user respondents are 58% (142) and 41.80% (102), the total Faculty and Student Response Rate is 88.80% and 92%, respectively.

It has been revealed that the student’s response rate is overall high as compared to faculty response rate. It has been examined that Faculty Users’ response rate is high as compared to the student response rate. Further the table shows that the student’ non-users responses are more as compared to faculty non-users responses. Table 3 will further provide the college wise response frequencies of all the member colleges considered under the study.

The table 3 shows the responses of all the N-LIST member colleges considered under study. It clearly illustrates that out of 32 member colleges, only 29 college librarians’ responded to the Librarian’s questionnaires. The above table also shows that only ten colleges students are registered under N-LIST E-resources. A majority of the student’s respondents belong to Government College of Commerce and Business Administration, Chandigarh. \*\*Khalsa College for Women, Ludhiana does not have librarian whereas the librarians of Guru Nanak Girls College, Model Town Ludhiana and A.S. College, Khanna did not respond to the questionnaires.

**SCOPE AND LOCALE OF THE STUDY**

This study is confined to 32 member colleges. These member colleges are located in Punjab and Chandigarh and are affiliated to Panjab University only.

**Table 4: Sources of Awareness of N-LIST E-resources**

Source of Awareness	Faculty N (%)	Student N (%)
Institute’s Website	48 (33.33%)	22 (15.49%)
Institute’s Prospectus	12 (8.33%)	30 (21.13%)
Library user orientation programme	9 (6.25%)	28 (19.72%)
Friends / colleagues	40 (27.78%)	19 (13.38%)
Library Notice board	0 (0.00%)	0 (0.00%)
Library staff	35 (24.31%)	43 (30.28%)
N-LIST Facebook	0 (0.00%)	0 (0.00%)
Not aware	0 (0.00%)	0 (0.00%)
Total	144	142

The figure 1 shows that the faculty respondents

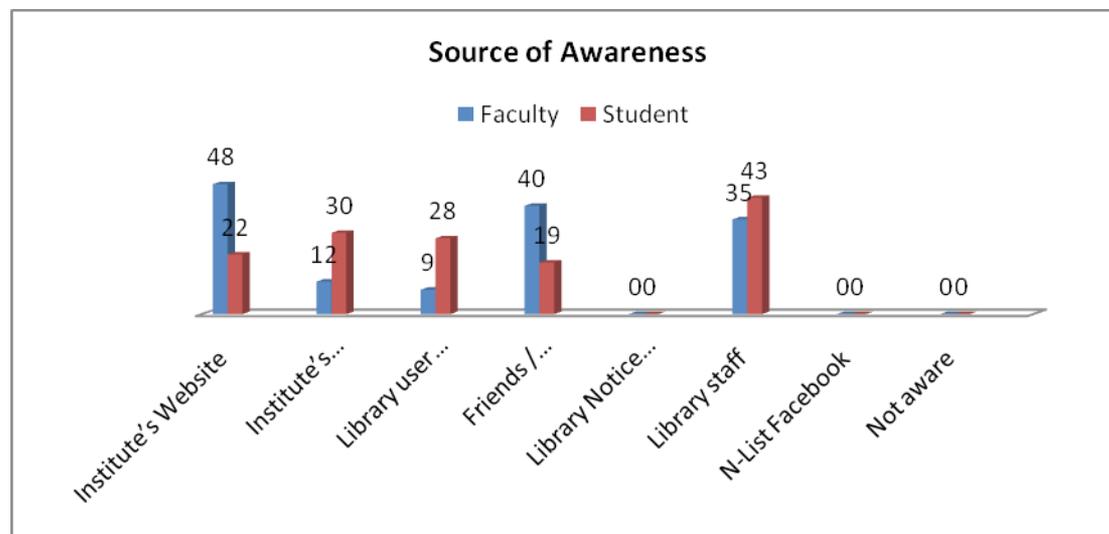


Figure: 1

were asked about their sources of awareness regarding the N-LIST E-resources. It was found that a majority of respondents i.e. 33.33% (48) sought awareness from the Institute's website followed by 27.78% (40) who came to know about them from their friends/ colleagues. The 24.31% (35) of the respondents were made aware by the library staff whereas only 8.33% (12) and 6.25% (9) sought awareness from the Institute's prospectus and the library orientation programme, respectively. There were no respondents who sought awareness about N-LIST E-resources from the face book Page and from the Library notice board. There was no faculty user respondent who was not aware of the N-LIST E-resources.

In case of student users, the majority of respondents 30.28% (43) were made aware of the N-LIST E-resources by the library staff followed by 21.10% (30) respondents who sought information from the Institute's prospectus. About 19.72% (28), 15.49% (22) and 13.38% (19) respondents sought awareness from the Library User Orientation Programmes, Institute's websites and friends respectively. There were no respondents who got to know about these from the library notice boards or N-LIST Facebook page. There was no faculty user respondent who was not aware of the N-LIST

E-resources.

The table 5 indicates that the mean values of Faculty and Student Users for frequencies of using N-LIST E-resources are 12.16 and 12.40, respectively. The Standard Deviations of Faculty and Student Users for frequencies of using N-LIST E-resources are 1.68 and 1.52, respectively. It is evident from the mean values and S.D there is not much difference in the frequencies of using the N-LIST e-resources.

It has been observed that the majority of the faculty and students respondents prefer accessing the N-LIST E-resources on a weekly basis. It appears to be the most suitable pattern for fulfilling their information needs. It has also been perceived that the student frequency of accessing N-LIST E-resources from Library, Home, Department and College Computer Centre are high than the faculty members on monthly Basis. Whereas on daily basis, the frequencies of accessing the N-LIST E-resources by the students and faculty users are low. Thus it can be inferred that the frequencies of using the N-LIST E-resources are highly preferred on weekly basis at College Computer Centre, as the College Computer Centre have complete infrastructural facilities i.e. system hardware, application software, more number of computer terminals, Air-Conditioning,

**Table 5: Comparative Analysis of Frequency & Place of Using N-LIST E-Resources between Faculty and Student Users**

Frequency	Library		Home		Department		College Computer Centre	
	FU	SU	FU	SU	FU	SU	FU	SU
Daily	1 0.69%	0 0.00%	4 2.78%	8 5.63%	0 0.00%	0 0.00%	8 5.36%	8 5.63%
2-3 times per week	6 4.17%	2 1.41%	18 12.50%	19 13.38%	42 29.17%	29 20.42%	0 0.00%	0 0.00%
Weekly	108 75.00%	104 73.24%	108 75.00%	79 55.63%	97 67.36%	107 75.35%	122 84.72%	130 91.55%
Fortnightly	24 16.67%	20 14.08%	10 6.94%	6 4.23%	5 3.47%	0 0.00%	14 9.72%	6 4.23%
Monthly	5 3.47%	16 11.27%	4 2.78%	30 21.13%	0 0.00%	6 4.23%	0 0.00%	4 2.82%
Mean and Standard Deviation (Faculty and Student Users)								
Mean Value	F.U= 12.1597		S.U= 12.4014		Standard Deviation	F.U= 1.67525	S.U= 1.52082	

UPS, internet connectivity etc. It makes the most suited place for the users for seeking the E-resources.

**Table 6: Comparative Analysis of the usefulness of N-LIST E-resources**

E-resources	Faculty Users		Students Users	
	Mean	S.D	Mean	S.D
E-Books	20.4375	3.63302	20.5775	4.99407
E-Journals	21.7361	4.66798	22.8592	5.86442
Bibliographical Databases	1.9583	.28665	1.8873	.46278

From table 6, it can be analysed that there is not much difference in the usage of the N-LIST E-books, as the mean and standard deviation scores for the faculty users are 20.44 and 3.63, respectively whereas the mean and standard deviation scores for the student users are 20.58 and 4.99, respectively. It has also been perceived that there is no difference in the e-books preferences by the student and faculty users. Whereas in case of E-Journals, it can be observed that the mean and standard deviation scores for the faculty users are 21.74 and 4.67, respectively and the mean and

standard deviation scores for the students users are 22.86 and 5.86, respectively. It has been calculated that the difference between mean values is not significant. Thus it can be comprehended that the preferences regarding the E-journals didn't have much difference by both faculty and student users.

In the Bibliographical databases, the mean and standard deviation scores for the faculty users are 1.96 and .29, respectively whereas the mean and standard deviation scores for the student users are 1.89 and .46, respectively. Therefore both the student and faculty users sought information from the Mathscinet database.

The figure 2 illustrates the values of mean and standard deviation of the faculty and students users, which help in comparative analysis of usage of the N-LIST E-resources amongst the faculty and student respondents. It shows the non-significant difference in the usage of the N-LIST E-resources amongst the faculty and student users. It has been gathered that the trends of usefulness of N-LIST E-resources and their preferences by faculty and the student respondents did not have much difference.

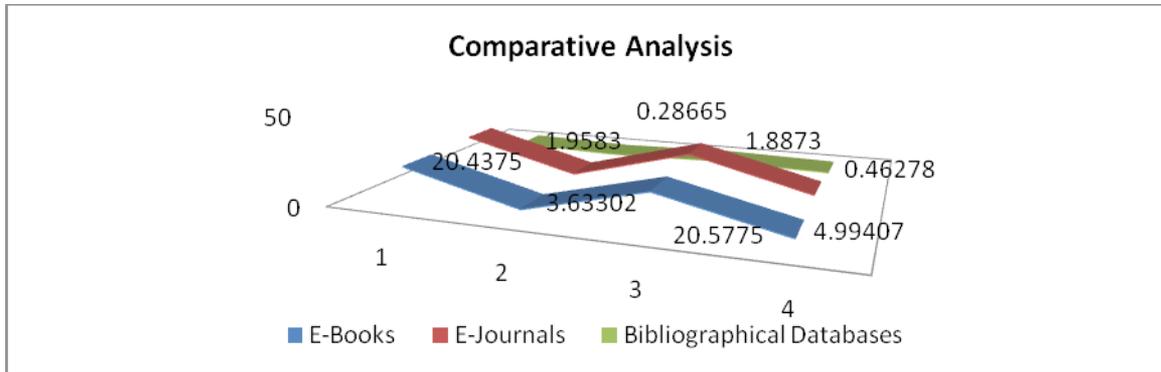


Figure: 2

Table 7: Comparative Analysis of External Storage Media by Faculty and Student Respondents

Frequency	Pen-Derive		CD/DVD		E-Mail/ Online Storage		E-Book Reader		Mobile/Tablets	
	FU	SU	FU	SU	FU	SU	FU	SU	FU	SU
Always	59 40.97%	49 35.51%	15 10.42%	35 24.65%	36 25.00%	41 28.87%	12 8.33%	4 2.82%	15 10.42%	13 9.15%
Frequently	37 25.69%	35 24.65%	18 12.50%	9 6.34%	53 36.81%	25 17.61%	46 31.94%	19 13.38%	48 33.33%	31 21.83%
Sometimes	33 22.92%	41 28.87%	42 29.17%	50 35.21%	32 22.22%	28 19.72%	74 51.39%	91 64.08%	64 44.44%	50 35.21%
Seldom	11 7.64%	4 2.82%	32 22.22%	30 21.13%	14 9.72%	12 8.45%	4 2.78%	2 1.41%	4 2.78%	2 1.41%
Never	4 2.78%	13 9.15%	37 25.69%	18 12.68%	9 6.25%	36 25.35%	8 5.56%	26 18.31%	13 9.03%	46 32.39%
Mean Value	F.U	12.56		S.U	10.41	Standard Deviation	F.U	3.66	S.U	4.82

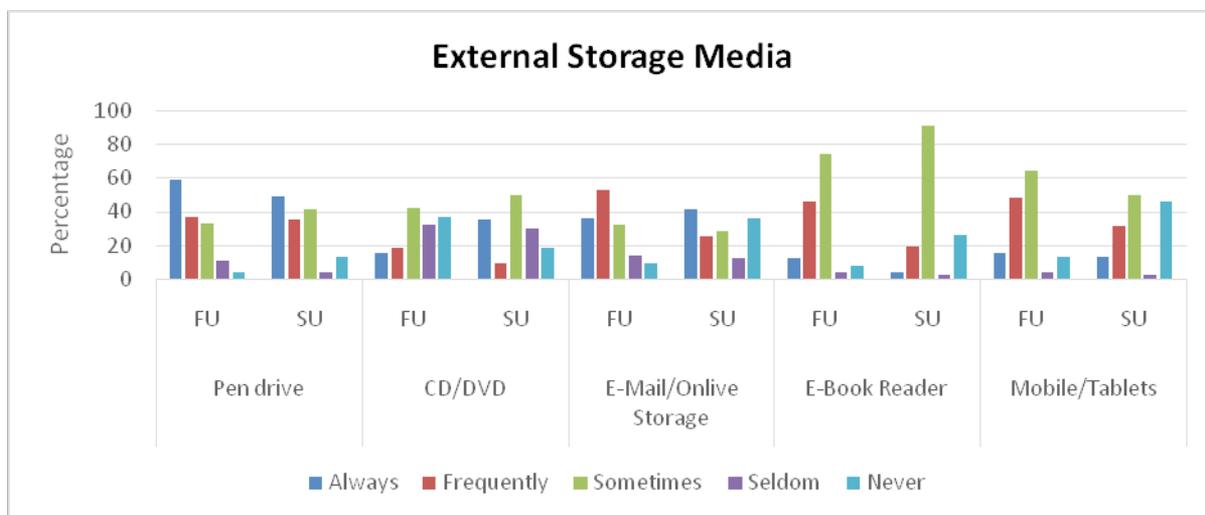


Figure:3

It can be deduced from figure 2 that the large number of the faculty and student users sometimes preferred 'E-Book Reader' as the external storage media whereas after combining the scores of 'Always' and 'Frequently', it has been analyzed that '**Pen-drives**' is the most preferred external storage media by both of the students and faculty respondents for storing the information for future references. It has also been evinced that 32.39% of student respondents did not prefer mobiles/ tablets; on the contrary the 25.69% of faculty respondents did not prefer CD/DVD for storing information. It can be deduced from the above table that 'Pen-drives' are always used by both faculty (40.97%) and student respondents (35.51%) as the external storage media because of its convenience, large

internal memory and portability in use, it is been highly preferred. Whereas 29.17% and 35.21% of faculty and student respondents sometimes uses CD/DVD. It has been analyzed that E-mails/ online storage media are frequently been used by 36.81% of faculty respondents whereas the 28.87% of student respondents always used it.

**Usage of N-LIST E-resources**

*Hypotheses* H<sub>0</sub> 1 - There is no significant difference in the usage of e-resources across faculty members and student of the member colleges.

H<sub>1</sub> 1 - There is significant difference in the usage of e-resources across faculty members and student of the member colleges.

**Table 8: T-Test**

Variable	Faculty		Student		t-statistics	p-value
	Mean	SD	Mean	SD		
Frequency of Using N-list E-Resource	12.1597	1.67525	12.4014	1.52082	-1.278	.202
Search strategy	10.5069	1.55098	11.1338	1.35390	-3.643	.000**
Advance Search	15.0903	4.71705	17.0211	8.36954	-2.399	.017*
Filter Result	10.2083	1.32683	10.6761	1.35033	-2.954	.003**
Preferences of Resource type & Format	8.3403	1.58297	8.5704	1.88084	-1.119	.264
Purpose of using N-LIST E-resources	24.2153	5.75874	27.1479	6.93429	-3.888	.000**
Usage of E-Books	20.4375	3.63302	20.5775	4.99407	-.271	.787
Usage of E-Journals	21.7361	4.66798	22.8592	5.86442	-1.790	.075
Usage of Bibliographical E-resources	1.9583	.28665	1.8873	.46278	1.557	.121
Usefulness of N-LIST E-resources	44.1319	7.98096	45.3239	10.73111	-1.065	.288
Common Features	21.1667	11.21251	23.8310	12.01947	-1.938	.054
Information Retrieved From N-LIST E-resources	11.3611	4.10970	11.7817	5.81892	-.705	.481
Library Support for Users	11.1597	5.26456	9.1549	6.17395	2.953	.003**
ICT Infrastructure for Users	15.8194	6.41529	14.3169	7.48082	1.822	.070
Training Programmes for Users	15.3403	6.18951	14.2535	5.71850	1.543	.124
External Storage Media while using N-LIST E-resources	12.5556	3.65616	10.4085	4.82334	4.238	.000**
Problems in N-LIST E-Resources	27.4514	12.59805	31.5775	11.37580	-2.908	.004**
Suggestions for access of N-LIST E-Resources Users	22.3194	9.11362	26.1197	8.94783	-3.558	.000**

**Table 9: Variables showing Significant Difference**

Variable	t-statistics	p-value	Testing of Hypothesis
Search strategy	- 3.643	.000**	Null Hypothesis is rejected
Advance Search	- 2.399	.017*	Null Hypothesis is rejected
Filter Result	- 2.954	.003**	Null Hypothesis is rejected
Purpose of using N-LIST E-resources	- 3.888	.000**	Null Hypothesis is rejected
Library Support	2.953	.003**	Null Hypothesis is rejected
External Storage Media	4.238	.000**	Null Hypothesis is rejected
Problems in N-LIST E-Resources	- 2.908	.004**	Null Hypothesis is rejected
Suggestions for access N-LIST E-Resources Users	- 3.558	.000**	Null Hypothesis is rejected

**Findings from the T-Test (Variables showing Significant Difference)**

The table 9 displays the variables showing significant Difference. The variables are as follows:-

The t-statistics and p-value of the Search strategy, advance search, filter results, E-resources, library support, external storage, problem in N-LIST E-resources and Suggestions for access of N-LIST across faculty members and student of the member colleges. In this the highest t-statistics is 4.24 for external storage media which is significant at .000 (p-value) and the least t-statistics value is -3.89 for purpose of Using N-LIST E-resources which is significant at .000 (p-value). Since the p-value for these 8 variables is less than 5% level of significance. Hence, the **Null Hypotheses for these variables are rejected and alternate hypotheses are accepted in all the 8 concerning variables.** Hence, it can be inferred that there is a significant difference among the above variables in the usage of N-LIST E-resources across faculty and student users.

**Findings from the T-Test (Variables showing Non-Significant Difference)**

The table 10 displays the variables showing non-significant Difference. The variables are as follows:-

The t-statistics and p-value of N-LIST E-resources, research type, E-books, E-journals, bibliography, types of N-LIST E-resources, common features, information retrieved, ICT infrastructure

and training programming across faculty members and student of the member colleges. In this the highest t-statistics is 1.82 for ICT infrastructure and the p-value for the same is 0.70 and the least t-statistics value is -1.79 for Usefulness of E-journals and the p-value for the same is 0.07 which is more than level of significance (5%). Since the p-value for these 10 variables is more than 5% level of significance. Hence, **the Null Hypotheses for these variables are accepted and alternate hypotheses are rejected in all the 10 concerning variables. Hence, it can be inferred that there is non-significant difference in the above variables in the usage of N-LIST E-resources across faculty and student users.**

Hence, the findings partially accepts the Null Hypothesis  $H_0$ .

**FINDINGS, SUGGESTIONS AND RECOMMENDATIONS**

The overall response rate of the respondents is 90.84%. Out of 32 member colleges, the students were found to be registered under N-LIST E-resources only in ten colleges. It has been statistically proved that there is no significant difference in the usefulness of the N-LIST E-resources among the faculty and student users whereas there seems to be significant difference in the purpose of using N-LIST E-resources, search strategies, problems and suggestions among the faculty and student

**Table 10: Variables showing Non-Significant Difference**

Variable	t-statistics	p-value	Testing of Hypothesis
Frequency of Using N-LIST E-Resource	- 1.278	.202	Null Hypothesis is Accepted
Resource types	- 1.119	.264	Null Hypothesis is Accepted
E-Books	- .271	.787	Null Hypothesis is Accepted
E-Journals	- 1.790	.075	Null Hypothesis is Accepted
Bibliography	1.557	.121	Null Hypothesis is Accepted
Usefulness of N-LIST E-resources	- 1.065	.288	Null Hypothesis is Accepted
Common Features	- 1.938	.054	Null Hypothesis is Accepted
Information Retrieved	- 705	.481	Null Hypothesis is Accepted
ICT Infrastructure	1.822	.070	Null Hypothesis is Accepted
Training Programmes	1.543	.124	Null Hypothesis is Accepted

users. It can be inferred that p-value of N-LIST E-resources, research type, E-books, E-journals, bibliography, types of N-LIST E-resources, common features, information retrieved, ICT infrastructure and training programming across faculty members and student of the member colleges are more than 5% level of significance, which shows the non-significant difference in the usage of N-LIST E-resources across faculty and student users. The majority of faculty respondents i.e. 33.33% sought awareness from the Institute's website, followed by 27.78% who sought awareness from their friends/ colleagues about the N-LIST E-resources. On the other hand, 30.28% of student respondents sought awareness from the library staff followed by 21.13% respondents who sought awareness from the Institute's prospectus. Majority of faculty respondents i.e. 84.72% and a majority of the student respondents i.e. 91.55% accessed the N-LIST E-resources on a 'weekly basis' through the 'College Computer Centre'. It can be deduced from the above table that 'Pen-drives' are always used by both faculty (40.97%) and student respondents (35.51%) as the external storage media because of its convenience, large internal memory and portability in use, it is been highly preferred.

Since the College libraries encompass a major role in higher education, there has been radical transformation in their collection and services

of libraries, affiliated to Panjab University (Chandigarh). The inclusion of Consortium based e-resources subscription has paved the ways in enhancing the quality education to their clientele. The results of this study reveal that the availability and accessibility of electronic resources, that is, online Consortium based e-resources have an immense impact on the usage of N-LIST E-resources among the faculty and students considered under the study. The findings of the study indicate the users are dependent on N-LIST E-resources for their teaching, learning outcomes, research and updating themselves in the field of specialisations. The study reveals that faculty and students users are using the N-LIST E-resources satisfactorily. It has been discerned that the response rate of the faculty users (61%) were higher than that of the faculty non-users (39%).

It is suggested that N-LIST E-Resources must provide better searching facilities like Single Search Facility for multiple database so as to unison the contents being search by the users as in case of J-GATE PLUS available to the 'e-shodh sindhu' for universities. There is need to rationalisation of N-LIST E-resources subscription cost for the Non-Aided Colleges. N-LIST E-Resources must provide better more discipline oriented and curriculum based E-Journals and E-Books must be included so as to diversify the contents being

provided. All the Libraries should maintain and provide proper 'Digitised Reference and Online Information Services' to their users in order to facilitate better services more effective and better utilisation of the N-LIST E-resources. N-LIST E-Resources must have the complete back files and more regional language related documents should be included so as to cater a wide spectrum of user's needs. Feedbacks/ user surveys must be conducted periodically in order to be acquainted with the upcoming requirements of the users. Awareness programmes about the N-LIST E-resources must be promoted in order to garner more support for the usage of N-LIST E-resources.

The study at hand was focussed on the evaluation of usage of N-LIST E-resources in the Select Degree Colleges Affiliated to Panjab University, Chandigarh. The libraries should endeavour to launch a marketing plan to promote the usage of N-LIST E-resources and its awareness among the users through email alerts, text messages, social networking sites, whatsapp groups, blogs, and wikis etc. It is suggested that the subscription cost of N-LIST E-resources should be reduced to the same as earlier for the Non-aided colleges also.

Further the research in this regard will widen the criteria of the study and identify as to how the faculty and the student from the member colleges affiliated to other Universities explore the usage of the N-LIST E-resources. The authors feel that there is a need for appropriate and constant evaluation of this study in order to enhance insight into the usage analysis and the relevance of the information retrieved from the N-LIST E-resources. The letter of recommendations has been sent to the INFLIBNET Centre, so that an appropriate action must be carried out for the awareness of users.

## REFERENCES

- [1] Akinola, S.F. (2009). Information Seeking Behaviour of Lecturers in Faculties of Education in Obafemi Awolowo University, Heilfe and University of Ibadan. *SAMARU Journal of Information Studies*, 9(2), 30.
- [2] Bhardwaj, R. K., & Walia, P. K. (2012). Web Based Information Sources and Services: A Case Study of St. Stephen's College, University of Delhi. *Library Philosophy and Practice*.
- [3] Chattwal, A. (2014). *Information Seeking Behaviour of Social Science Faculty: a study of Universities of Punjab, Haryana and Chandigarh*. (Unpublished Doctoral Thesis). Panjab University, Chandigarh (India).
- [4] Chikkanmanju & Kumbar, M. (2015). Use of Information Resources and Services by the Students of First Grade Colleges Affiliated to Tumkur University, Tumkur: A Comparative Study. *International Journal of Academic Library and Information Science*, 3 (2), 53-64.
- [5] Krejice, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurements*, 30, 607-610.
- [6] Nikam, K., & Pramodini, B (2007). Use of E-Journals and Databases by the Academic Community of University of Mysore: A Survey. *Annals of Library and Information Studies*, 54 (1), 19-22.
- [7] Proportionate Random Stratified Sampling (2013). In Stattrek.com. Retrieved on May 18, 2013 from <http://stattrek.com/statistics/resources.aspx>