

# USAGE OF N-LIST E-RESOURCES IN SELECTED DEGREE COLLEGES AFFILIATED TO PUNJAB UNIVERSITY, CHANDIGARH: A SURVEY

RUPAK CHAKRAVARTY\*, SHIVANI KAUSHAL\*\*

## ABSTRACT

The purpose of this article is to analyze the usage of the N-LIST E-resources in the Degree Colleges Affiliated to Panjab University, Chandigarh. This research article tangibly explains the genesis of the N-LIST Consortium and provides the information of disciplines covered in N-LIST E-resources. The Survey method was used for data collection. The authors have collected the usage statistics from 18 colleges located in Punjab and Chandigarh. The authors have analyzed the ratio between the registered users and actual users and will determine the average users and usage on yearly basis. It has been analyzed that only 22% are the actual users of the N-LIST E-resources and out of 18 colleges, only 7 colleges have registered student members. It can be concluded that Dev Samaj College for Women, Ferozepur has the top most average usage followed by Guru Gobind Singh College for Women, Chandigarh. D.A.V College, Sector 10 Chandigarh has the top most average users followed by G.G.D.S.D College, Sector, and 32 Chandigarh. The usage statistics provided by the N-LIST to its member colleges doesn't provide the (relevant) information of each download. However, it's difficult to assess whether the retrieved information is relevant or not. It has also been observed that there is no formal training provided by the N-LIST scientists to the member colleges. Moreover, the usage statistics cannot examine the satisfaction level of the end clients/users. It is recommended that user centric studies can be done.

**KEYWORDS:** E-Resources, N-LIST, INFLIBNET, Usage Of E-Resources, Degree Colleges Of Panjab University, Usage Statistics.

## INTRODUCTION

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.

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\* Associate Prof. and Chairperson, Department of Library & Information Science, Panjab University, Chandigarh.

\*\* Research Scholar, DLIS, P.U, & Librarian, GGSD College, Kheri Gurna (Banur), A sister Institute of GGSD College, Chandigarh.

**Correspondence E-mail Id:** editor@eurekajournals.com

Although, there are many consortia in India like UGC-INFONET Digital Library Consortia, INDEST Consortia, CSIR Consortia etc which have already gained popularity. 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.[1] 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 [2], subscribed under the N-LIST Project.

### **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 find various types of e-resources offered by the N-LIST.
2. To find out the disciplines in its various categories of e-resources offered by the N-LIST.
3. To analyze the usage amongst the selected Degree Colleges of Panjab University, Chandigarh.
4. To find out the year wise usage of the selected Degree Colleges of Panjab University, Chandigarh.

### **METHODOLOGY AND SCOPE OF THE STUDY**

A Survey method has been implemented to meet the objectives of the study. The author has collected the usage statistics from the selected Degree Colleges which are affiliated to Panjab University. Besides the usage statistics, the author has adopted personal observation to seek information from the respondents. This method facilitates yearly accumulation of information from the member colleges in various settings under parameters relevant to the study.

### **SCOPE AND LOCALE OF THE STUDY**

This study is confined to 18 member colleges. These member colleges are located in Punjab and Chandigarh and are affiliated to Panjab University only.

### **TIME PERIOD OF THE STUDY**

The time period of the study is from Jan 2010 to May 2015.

### **ELECTRONIC RESOURCES SUBSCRIBED UNDER THE N-LIST PROGRAM**

Electronic resources subscribed by the N-LIST program can broadly be divided into the following three categories:

## FULL-TEXT ELECTRONIC JOURNALS

The full-text e-journals contain complete articles along with their bibliographic details. The N-LIST program subscribes to full-text e-journals [4 (p. 28)] from the various academic societies, commercial publishers and aggregators like

American Institute of Physics, American Physical Society, Oxford University Press, Royal Society of Chemistry, Cambridge University Press, H W Wilson, etc. All full text resources subscribed under the N-LIST program contain electronic journals as revealed in the table given below:-

**Table 1. Electronic Journals subscribed under the N-LIST Program**

S. No.	E-Journals	Scope	Titles
1.	American Institute of Physics	Physics	18
2	American Physical Society	Physics	10
3	Annual Reviews	Life Sciences, Physical Sciences & Social Sciences	33
4	Cambridge University Press	Sciences, Social Sciences & Studies related to various Countries	224
5	Economic and Political Weekly (EPW)	Economics	1
6	Indian Journals	Sciences, Social Sciences & Studies related to Agriculture Science, and Animal Science	150
7	Institute of Physics	Physics & Environment Science	46
8	JSTOR	Sciences & Social Sciences	2000
9	Oxford University Press	Sciences & Social Sciences	206
10	Royal Society of Chemistry	Chemistry	29
11	H. W. Wilson	Sciences & Social Sciences	2800

The N-LIST program subscribes to various e-books [4 (p. 29)] which are purchased on “one-time payment and perpetual access basis” as in case of NetLibrary, McGraw Hill and Oxford

Scholarship and on the annual basis like E-brary. The total number of electronic books accessible to colleges under N-LIST program exceeds 1,00,000 as given below in the table.

**Table 2. E-Books subscribed under the N-LIST Program**

S. No.	E-Books	Scope	Titles
1.	Cambridge Books Online	Science, Social Science, Engineering & Technology, Medicine	1800
2.	E-brary	Science, Social Science, Engineering & Technology, Medicine	1,00,000
3.	EBSCOHost-Net Library	Sciences & Social Sciences	936
4.	Hindustan Book Agency	Social Sciences, Engineering & Technology	65
5.	Institute of South East Asian Studies (ISEAS) Books	Social Sciences, Engineering & Technology	382
6.	Oxford Scholarship	Science & Social Sciences	1400
7.	Springer eBooks	Science, Social Science, Engineering & Technology, Medicine	2300
8.	Taylor Francis eBooks	Science, Social Science, Engineering & Technology, Medicine	1800
9.	My library-McGraw Hill	Science, Social Science, Engineering & Technology, Medicine	1124
10.	Sage Knowledge eBooks	Science, Social Science, Engineering & Technology, Medicine	1000

### **BIBLIOGRAPHIC DATABASE, E-RESOURCES FOR UNIVERSITIES AND TECHNICAL INSTITUTIONS**

The Bibliographic database [4 (p. 29)] includes the references to articles published in journals, conference proceedings or chapters in books. Most bibliographic databases contain abstracts with links to their full-text e-resources. N-LIST

subscribes to MathSciNet (American Mathematical Society) that covers reviews of articles in mathematics from 1944 onwards. The N-LIST also subscribes various e-resources for Universities i.e. Web of Science which includes the statistical data for conducting the bibliometric or scientometric studies. The other e-resources for technical institutions are Annual Reviews, Project Muse and Nature.

**Table 3. Bibliographic Database, E-resources for Universities and Technical Institutions**

S. No.	Bibliographic Database	No. of Titles in Databases		Disciplines
1.	MathSciNet	500 journals		Mathematical Reviews
2.	Web of Science	18,000 journals		Arts, Sciences and Social Sciences
3.	Annual Reviews	33 journals		Life Sciences, Physical Sciences & Social Sciences
4.	Project Muse	576 journals	23,368 e-books	Social Sciences
5.	Nature	100 journals		Sciences

### **DATA ANALYSIS**

**Table 4. Registered Users in various Colleges**

S. No.	Name of the College	Registered Students	Registered Faculty	Total Registered Users
1.	D.A.V. College of Education, Hoshiarpur	335	35	370
2.	Dev Samaj College for Women, Ferozepur	0	47	47
3.	Govind National College, Ludhiana	0	40	40
4.	Gujranwala Guru Nank Khalsa College, Ludhiana	0	17	17
5.	Guru Nanak College for Girls, Muktsar	0	39	39
6.	G.N. National College, Doraha	0	45	45
7.	J.C. D.A.V. College, Dasuya	0	47	47
8.	SGGS College, Mahilapur	110	30	140
9.	Dev Samaj College, Sector 45	0	47	47
10.	Dev Samaj College of Education, Sector 36	35	20	55
11.	GGDSD College, Sector 32	61	152	213
12.	Govt. College for Boys, Sector 11	51	192	243
13.	Govt. College of Education, Sector 20	35	30	65
14.	Guru Gobind Singh College for Women, Sector 26	0	77	77
15.	Govt. College for Girls, Sector 42	0	100	100
16.	P.G. Govt. College, Sec 46	0	76	76
17.	DAV College, Sector 10	93	95	188
18.	Guru Gobind Singh College, Sector 26	0	100	100
	Total	720	1189	1909

\* Please Note that the above values have been collected from the College Librarians by the Authors

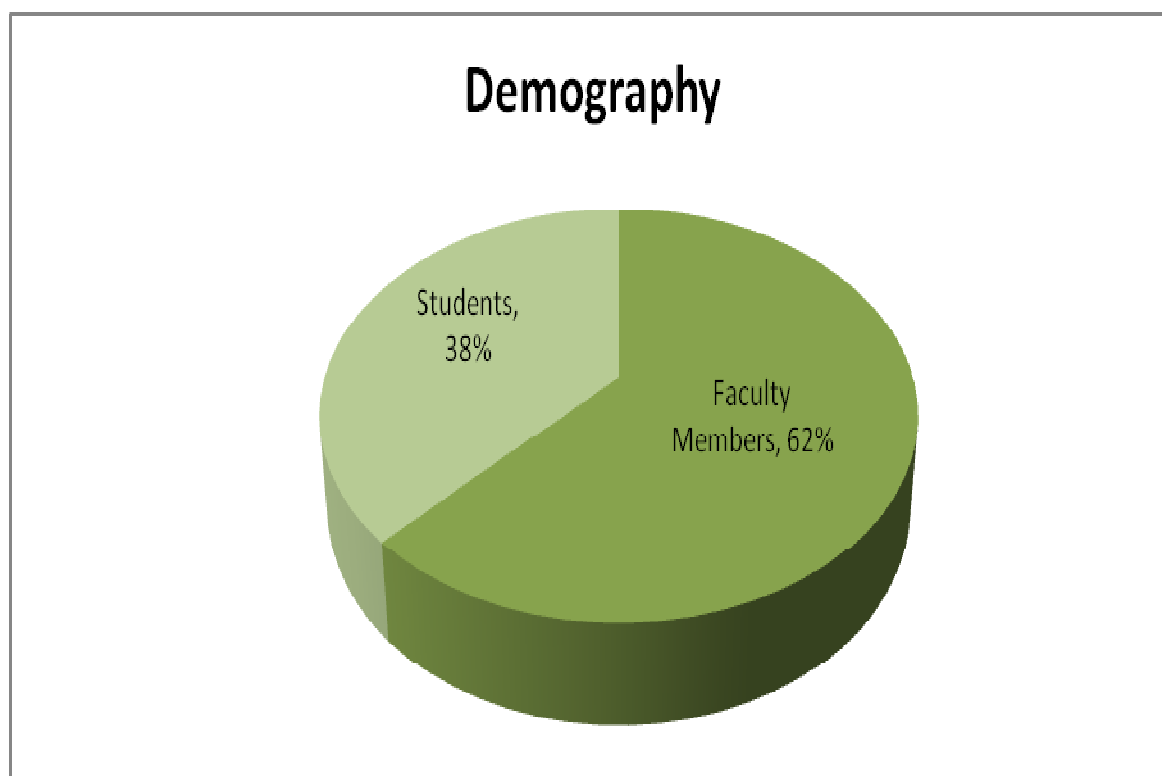
**DEMOGRAPHY**

The total population consists of colleges located in Punjab & Chandigarh which are affiliated with Panjab University, Chandigarh. Out of 18 colleges, 10 (56%) colleges are located in Chandigarh and 8

(44%) colleges are located in the various region of Punjab. The total registered users in the member colleges are 1909. Out of these, total 1189 are registered faculty members and 720 are registered students.

**Table 5. Registered Users**

S. No.	Registered Faculty Members	Registered Students	Total Registered Members
1.	1189 (62%)	720 (38%)	1909



**Figure 1. Demography**

The above pie chart shows the demographic characteristics. The total population of 18 member colleges is 1909, out of which 1189 i.e. 62% is comprised of the registered faculty

members and the remaining 720 i.e. 38% is comprised of the registered students. It has been analyzed that out of 18 colleges, only 7 colleges have registered student members.

**USAGE OF THE N-LIST E-RESOURCES**

**Table 6. Usage of the N-LIST E-resources**

S. No.	Name of the Colleges	N-LIST Subscription Year (1)*	No. of Users (2)*	Total Pages Viewed (3)*	Page views per year (4=3/1)
	D.A.V. College of Education, Hoshiarpur	2011-15 (4)	30	17376	4344
	Dev Samaj College for Women, Ferozepur	2012-13 (1)	11	8635	8635

Govind National College, Narangwal Ludhiana	2010-15 (5)	18	1422	284.4
Gujranwala Guru Nank Khalsa College, Ludhiana	2010-14 (4)	8	576	144
Guru Nanak College for Girls, Muktsar	2011-14 (3)	16	3918	1306
Guru Nanak National College, Doraha	2010-15 (5)	15	5286	1057.2
J.C. D.A.V. College, Dasuya	2011-15 (4)	33	21939	5484.75
SGGS College, Mahilapur	2011-15 (4)	23	3466	866.5
Dev Samaj College, Sector 45	2010-15 (5)	8	579	115.8
Dev Samaj College of Education, Sector 36	2012-15 (3)	3	254	84.6
GGDSD College, Sector 32	2010-15 (5)	105	40998	8199.6
Govt. College for Boys, Sector 11	2011-15 (4)	26	4607	1151.7
Govt. College of Education, Sector 20	2013-15 (2)	21	8562	4281
Guru Gobind Singh College for Women, Sector 26	2013-15 (2)	21	15894	7947
Govt. College for Girls, Sector 42	2011-15 (4)	26	15900	3975
P.G Govt. College, Sec 46	2010-15 (5)	21	8949	1789.8
DAV College, Sector 10	2011-15 (4)	144	31259	78
Guru Gobind Singh College, Sector 26	2013-14 (1)	8	1176	1176
<b>Total</b>		<b>537</b>	<b>1,90,796</b>	

\* Please Note that the above values have been derived from Usage Statistics provided by the Colleges

The above table shows the usage statistics of N-LIST members' colleges from the subscription year. This table demonstrates the usage statistics of various member colleges located in Punjab and Chandigarh. The time period for usage statistics is from 2010-2015. But there are some colleges which have started using the N-LIST E-resources from 2011. It has been analyzed that the total downloads/page views are 1, 90, 796 viewed by 537 users in the total 18 colleges. From the above table, it can be analyzed that GGDSD College,

Sector 32 has the highest page views followed by D.A.V College, Sector 10 Chandigarh. The least number of page views is by Dev Samaj College of Education, but if we view the overall mean values (ref 4, pp. 160), the results differ.

In view of the above data, the author will analyze the ratio between the registered users and actual users and will determine the average users and usage on yearly basis.

## ACTUAL USERS

Table 7. Actual Users

S. No.	Name of the Colleges	College Code	Total Registered Users (1) *	Actual Users (2)	Ratio (3=2/1)
1.	D.A.V. College of Education, Hoshiarpur	C 1	370	30	0.08
2.	Dev Samaj College for Women, Ferozepur	C 2	47	11	0.23
3.	Govind National College, Narangwal Ludhiana	C 3	40	18	0.45
4.	Gujranwala Guru Nanak Khalsa College, Ludhiana	C 4	17	8	0.47
5.	Guru Nanak College for Girls, Muksar	C 5	39	16	0.41
6.	Guru Nanak National College, Doraha	C 6	45	15	0.33
7.	J.C. D.A.V. College, Dasuya	C 7	47	33	0.70
8.	SGGS College, Mahilapur	C 8	140	23	0.16
9.	Dev Samaj College, Sector 45	C 9	47	8	0.17
10.	Dev Samaj College of Education, Sector 36	C 10	55	3	0.05
11.	GGSDS College, Sector 32	C 11	203	105	0.51
12.	Govt. College for Boys, Sector 11	C 12	243	26	0.10
13.	Govt. College of Education, Sector 20	C 13	65	21	0.32
14.	Guru Gobind Singh College for Women, Sector 26	C 14	77	21	0.27
15.	Govt. College for Girls, Sector 42	C 15	100	26	0.26
16.	P.G Govt. College, Sec 46	C 16	76	21	0.27
17.	DAV College, Sector 10	C 17	188	144	0.76
18.	Guru Gobind Singh College, Sector 26	C 18	100	8	0.08
	<b>Total</b>		<b>1899</b>	<b>537</b>	

\* Please Note that the above values have been derived from Usage Statistics provided by the Colleges

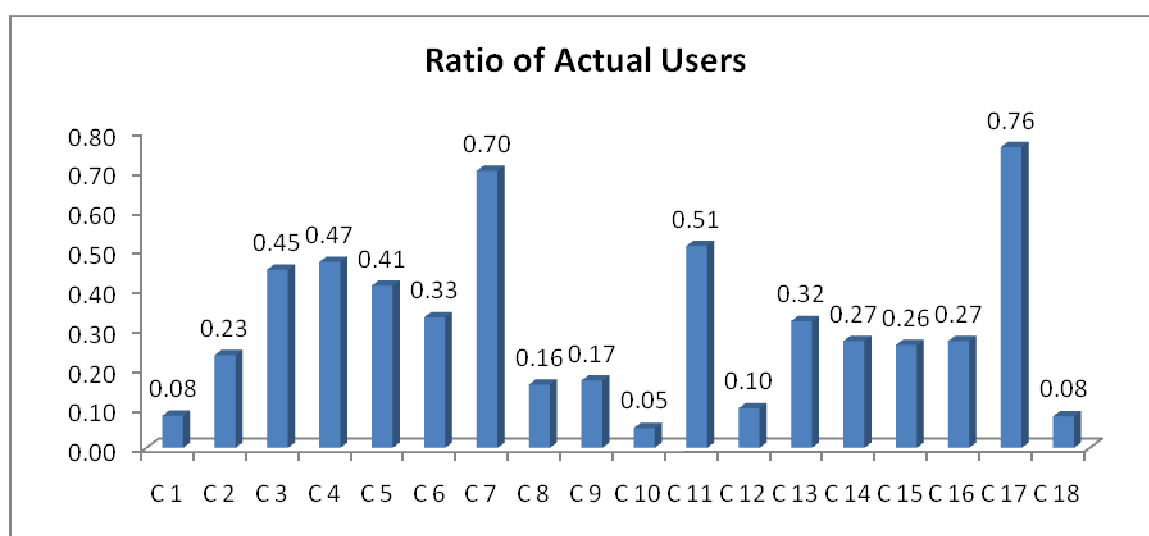


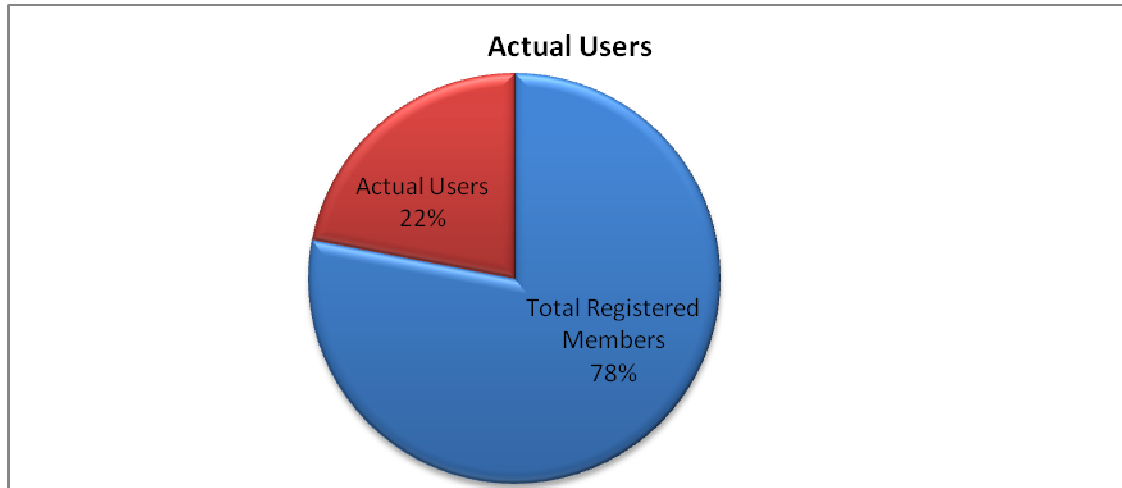
Figure 2. Ratio of Actual Users

The above table shows that total registered users in the 18 member colleges are 1909. It has been observed that there is a gap between the registered members and actual users which is determined in the form of a ratio. The calculated

ratio of D.A.V. College, Sector 10 is the highest i.e. 0.76 followed by J.C.D.A.V. College, Dasuya (0.70) and G.G.D.S.D. College (0.51). The least ratio is 0.05 of Dev Samaj College of Education, Sector 36 Chandigarh.

**Table 8.Number of Total Registered and Actual Users**

S. No.	Total Registered Members	Actual Users
1	1909	537



**Figure 3.Actual Users and Total Registered Members**

The above pie chart clearly explains that of the total 1909 registered members, there are only

537 (22%) actual users of the N-LIST E-resources.

**USAGE ANALYSIS (YEAR WISE)**

**Table 9.Year wise Usage Analysis**

S. No.	Subscription Duration (1)*	No. of Colleges (2)*	No. of Users (3) *	Total Pages Viewed (4) *	Page views per year (5=4/1)	Page views per user (6=4/3)
1.	1 year	2	19	9811	9811	516
2.	2 years	2	42	24,456	12,228	582
3.	3 years	2	19	4172	1,390	219
4.	4 years	7	290	95,123	23,780	328
5.	5 years	5	167	57,234	11,446	342
	Total	18	537	1,90,766	58,655	2363

\* Please Note that the above values have been derived from Table 6

It has been analyzed from the above table that since the last 5 years, the maximum usage of N-LIST E-resources falls in the subscription duration of 4 years followed by subscription duration of 2 years and 5 years respectively. The highest page

views per year are 23,780, 12,228 and 11,446 respectively. On an average, the page views per users are highest in the one year by 582 followed by 516 and 342 in 2 & 5 years of subscription duration.



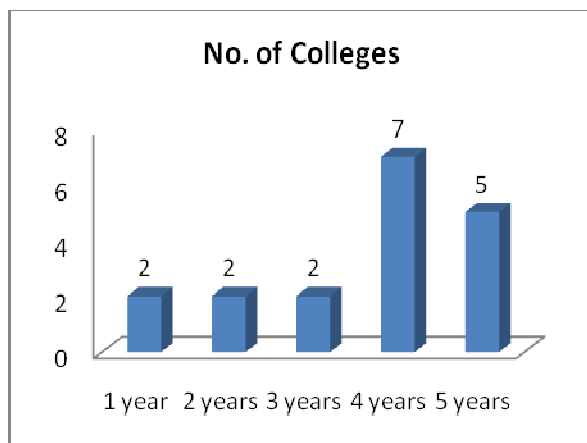


Figure 4. Number of Colleges

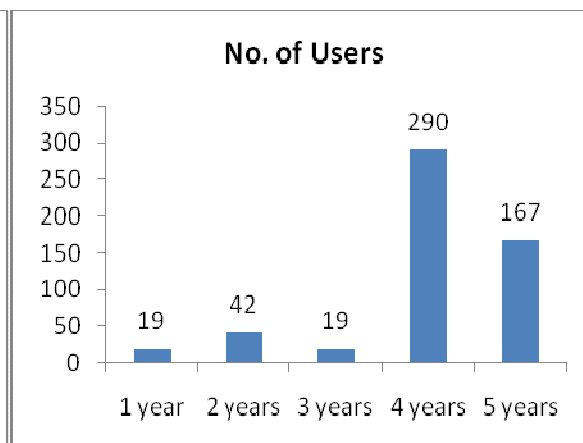


Figure 5. Number of Users

N-LIST project was started in the year 2010. But it gained popularity in Punjab and Chandigarh in the year 2011. As a result, the maximum subscription can be seen in the year 2011 when 7 colleges subscribed to the N-LIST project. After that there has been consistency in the subscription of N-LIST project.

From Fig. 5, it can be analyzed that from the usage statistics of these colleges, the number of users are highest in the duration of 4 years by 290 followed by 167 in 5 years and 42 in 2 years. It has been examined that the users have drastically fallen within a span of last three years.

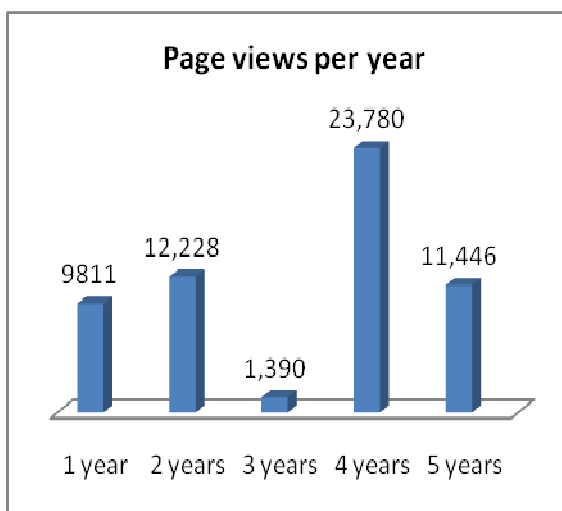


Figure 6. Page Views per Year

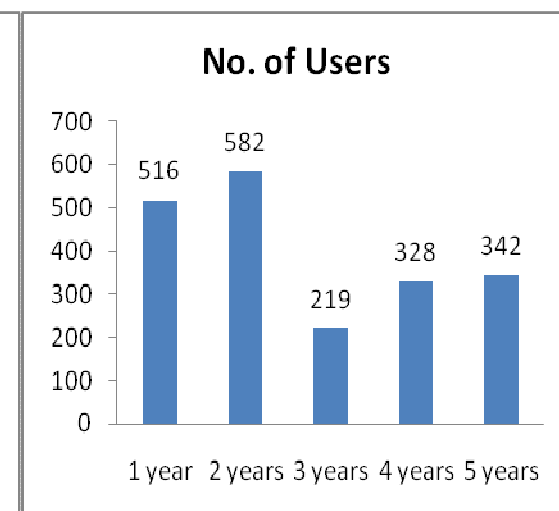


Figure 7. Number of Users

Figure 6 explains the pages views per year. It has been analyzed that the usage count is maximum in the subscription duration of 4 years (23,780) followed by 12,228 and 11,446 in 2 & 5 years' subscription duration respectively. It shows that maximum usage is in the period of 4 years and the lowest in the subscription duration of 3 years.

The above bar graph shows the page views per user i.e. average users in subscription years. The

number of users are highest in the 2 years subscription plan i.e. 582 followed by 1 year subscription duration. The least number of users is recorded in the three years subscription plan.

### AVERAGE USERS PER YEAR

The mean was calculated for each count/page views. Then it was computed for every college and afterwards compared and correlated with the survey inferences.

Table 10. Average Users per Year

S. No.	College Code	N-LIST Subscription Year	Year Duration (1)	No. of Users (2)	Total Pages Views (3)	Average Users (Mean) (4=3/1)
1.	C 1	2011-15	4	30	17376	7.50
2.	C 2	2012-13	1	11	8635	11.00
3.	C 3	2010-15	5	18	1422	3.60
4.	C 4	2010-14	4	8	576	2.00
5.	C 5	2011-14	3	16	3918	5.33
6.	C 6	2010-15	5	15	5286	3.00
7.	C 7	2011-15	4	33	21939	8.25
8.	C 8	2011-15	4	23	3466	5.75
9.	C 9	2010-15	5	8	579	1.60
10.	C 10	2012-15	3	3	254	1.00
11.	C 11	2010-15	5	105	40998	21.00
12.	C 12	2011-15	4	26	4607	6.50
13.	C 13	2013-15	2	21	8562	10.50
14.	C 14	2013-15	2	21	15894	10.50
15.	C 15	2011-15	4	26	15900	6.50
16.	C 16	2010-15	5	21	8949	4.20
17.	C 17	2011-15	4	144	31259	36.00
18.	C 18	2013-14	1	8	1176	8.00
				<b>537</b>	<b>1,90,796</b>	

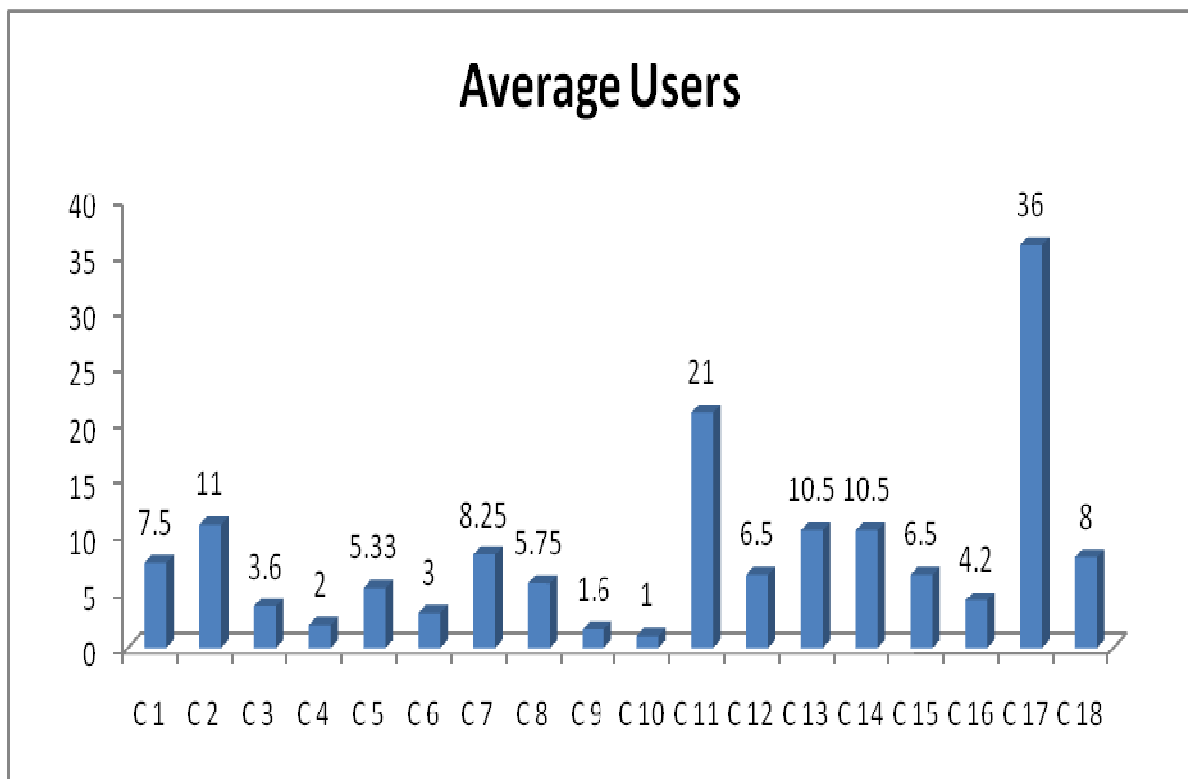


Figure 8. Average Users

The above bar graph elaborates the table and further helps in understanding the average users from every member college located in Punjab and Chandigarh. The author has analyzed the average users separately. From the above data, it has been determined that (C17) D.A.V College, Sector

10 Chandigarh has the top most average users followed by (C11) G.G.D.S.D College, Sector, 32 Chandigarh. It has also been concluded that (C10) Dev Samaj College of Education, Sector 36 have the least average users.

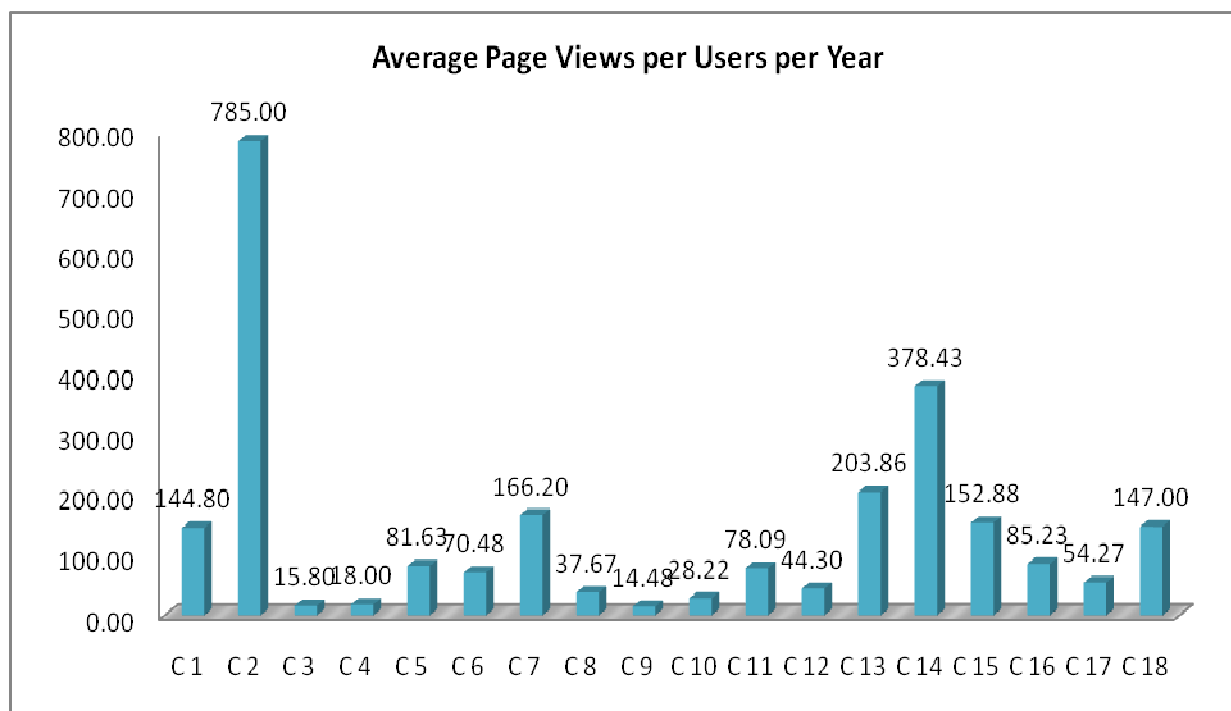
**AVERAGE PAGE VIEWS PER USER PER YEAR**

**Table 11. Average Page Views per user per year**

S. No.	College Code	N-LIST Subscription Year	Year Duration (1)	No. of Users (2)	Total Pages Views (3)	Average Page Views per Users (4=3/2)	Average Page Views per users per year (5=4/1)
1	C 1	2011-15	4	30	17376	579.20	144.80
2	C 2	2012-13	1	11	8635	785.00	785.00
3	C 3	2010-15	5	18	1422	79.00	15.80
4	C 4	2010-14	4	8	576	72.00	18.00
5	C 5	2011-14	3	16	3918	244.88	81.63
6	C 6	2010-15	5	15	5286	352.40	70.48
7	C 7	2011-15	4	33	21939	664.82	166.20
8	C 8	2011-15	4	23	3466	150.70	37.67
9	C 9	2010-15	5	8	579	72.38	14.48
10	C 10	2012-15	3	3	254	84.67	28.22
11	C 11	2010-15	5	105	40998	390.46	78.09
12	C 12	2011-15	4	26	4607	177.19	44.30
13	C 13	2013-15	2	21	8562	407.71	203.86
14	C 14	2013-15	2	21	15894	756.86	378.43
15	C 15	2011-15	4	26	15900	611.54	152.88
16	C 16	2010-15	5	21	8949	426.14	85.23
17	C 17	2011-15	4	144	31259	217.08	54.27
18	C 18	2013-14	1	8	1176	147.00	147.00
				<b>537</b>	<b>1,90,796</b>		

In Table 11, the author has examined the average users and average page views in average years of each college separately. It will help in understanding the recent trends of usage of N-LIST E-resources. From the above data, it has been analyzed that Dev Samaj College for

Women, Ferozepur has the top most average users followed by Guru Gobind Singh College for Women, Sector 26. It can be concluded that on an average Dev Samaj College, Chandigarh has the least usage amongst all the member colleges followed by Govind National College, Narangwal.



**Figure 9. Average Page views per User per Year**

The above bar graph shows the average page views per user per year from every member college. From the above data, it has been analyzed that (C2) Dev Samaj College for Women, Ferozpur has the top most average usage or page views followed by (C14) Guru Gobind Singh College for Women, Sector 26 in viewing the pages of N-LIST e-resources. It has been concluded that on an average Dev Samaj College, Chandigarh has the least usage amongst all the members' colleges followed by Govind National College, Narangwal.

## CONCLUSION

To conclude it can be stated that N-LIST offers multidisciplinary e-resources, but it is very important to examine the usage extent. Thus this research article is an attempt to examine the usage. Therefore the statistical interpretations are necessary to test the significance of usage and to get precise and logical results [4 (p. 162)]. It is an ideal way to serve the user community in a better way for tapping the N-LIST E-resources to the full extent for benefits of the users. The important findings can be concluded as follows:-

- It can be concluded that out of 18 colleges only 7 colleges have registered student members.
- It can be concluded that only 22% are the actual users of the N-LIST E-resources.
- It can be concluded that the maximum usage of N-LIST e-resources falls in the subscription duration of 4 years, 2 years and 5 years respectively.
- It can be concluded that D.A.V College, Sector 10 Chandigarh has the top most average users followed by G.G.D.S.D College, Sector, 32 Chandigarh whereas Dev Samaj College of Education, Sector 36 has the least average users.
- It can be concluded that Dev Samaj College for Women, Ferozpur has the top most average usage or page views followed by Guru Gobind Singh College for Women, Sector 26 in viewing the pages of N-LIST e-resources.

## SCOPE FOR FURTHER STUDIES

The usage statistics provided by the N-LIST to its member colleges doesn't provide the (relevant)

information of each downloads. However, it's difficult to assess the whether the retrieved information is relevant or not. It has also been observed that there is no formal training provided by the N-LIST scientists to the member colleges. Moreover, the usage statistics cannot examine the satisfaction level of the end clients/users. It is recommended that user centric studies can be done.

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