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CONTENTS

Characteristics of Educational Research and Evaluation Literature in Nigeria

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Abstract

This study attempts to examine the characteristics of the literature of educational research and evaluation. In doing so, the study tried to determine the format of use, geographical dispersion of citation, core journals in use, form of authorship and gender categories of authors. The study reveals that the preferred format by authors in educational research and evaluation is the monograph. There was also heavy dependence on local monographs and journals, while most academics preferred single authorship. Recommendations were made based on the findings of this study.

Keyword: *Bibliometrics Educational Research and Evaluation, Subject Literature.*

1. INTRODUCTION

In 1917, Cole and Eales charted a new intellectual course by doing a statistical analysis of the growth of the literature of comparative anatomy from 1550 to 1850. This novel study soon attracted the curiosity of others in the knowledge industry. This began a new sphere in research which has grown into what is now known as bibliometrics. Suffice it to say that in its growth, it has widened its shape, scope and content.

Bibliometrics is a type of research method used largely in information science. It utilizes quantitative analysis and statistics to describe pattern of publication within a given field or body of literature. It could and has been utilized by virtually all fields of knowledge, including education to throw light into the growth pattern and use of their body of literature to determine among other things, the influence and relationships of writers, works and trend of research.

Educational research and evaluation is the fulcrum of educational development. It sets the pace for all other activities in the sector. Research is a careful or diligent search. It is a studious inquiry or examination or investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts or practical application of such new or revised theories or laws. It is also the collecting of information about a particular subject. On the other hand, evaluation is the determining or fixing the value of an activity or action or object. To evaluate is to determine the significance, worth, or condition of a thing usually by careful appraisal and study estimate.

From the foregoing, it is clear that educational research and evaluation involves and generates a lot of actions and activities. It therefore means that it is an area that should generates a lot of literature. What is the nature of the literature thus generated? What are the characteristics of this literature? A quantitative analysis and statistics of the literature of this subject is imperative for its productive use.

2. STATEMENT OF THE PROBLEM

Researchers and authors are concerned with the discovery of new facts or information about the object of their research or authorship. Their findings are published and disseminated in various formats for easy accessibility and use by peers and others interested in the object. These become part of the literature of the subject.

Authors in Educational Research and Evaluation have continued to generate and expand the literature in the field. The characteristics of this literature need to be subjected to periodic scientific examination in the interest of scholarship without which their research values are blurred, diminished and sometimes glossed over. Yet, the literature of this and most times, other subject areas are never subjected to examination. And this is the basis for this study which intends to analyze the characteristics of the literature of Educational Research and Evaluation in Nigeria with a view to making it more accessible for effective use.

3. OBJECTIVE OF THE STUDY

The study seeks to determine the characteristics of the literature of educational research and evaluation in Nigeria in terms of:

i. format of use
ii. geographical dispersion of citations
iii. form of authorship
iv. gender categories

4. RESEARCH QUESTIONS

The study seeks to answer the following research questions:

1. What are the formats of use for the literature of educational research and evaluation?
2. What are the geographical dispersion of the citations in the literature of educational research and evaluation?
3. What are the forms of authorship in educational research and evaluation?
4. What are the gender categories of authors in educational research and evaluation?

5. ASSUMPTIONS

It is assumed in this study that:

i.all the articles examined have cited relevant literature
ii.cited literature have been actually read
iii. all articles examined are original research and not mere duplication of existing research
iv.they all fall within the mainstream of current research interest.

6. LITERATURE REVIEW

A major area of bibliometric research is citation analysis which uses citations in scholarly works to establish links or relationships between authors or their works. When one author cites another, a relationship is established. Many different links can be ascertained, such as links between authors, between scholarly works, between journals, between fields or even between countries etc. Citations both from and to certain documents may also be studied. A combination of all or some of the aforementioned characteristics could also be a basis for study.

Studies have been conducted about characteristics of subject literatures elsewhere and in Nigeria. Three of such studies by Earle and Vickery (1969), Cole (1970) and Aiyepeku (1973) opened the flood-gate for critical examinations of subject literatures, especially in the social sciences. Earle and Vickery studied the use of Social Science literature in United Kingdom by examining the citations in the literature while Cole examined the pattern of intellectual influence in scientific research. On the other hand Aiyepeku's monumental study of the characteristic of geographical literature on Nigeria was the first to earn a Doctor of Philosophy Degree from a Nigerian University. Olsgaard and Olsgaard (1980) studied the authorship of professional periodicals and they created a profile characteristic of authorship in five library periodicals. King (1987) on the other hand did an insightful review of bibliometric and other scientific indicators and their roles in research evaluation while Baird and Oppenheim (1994) did a critical evaluation of the influence of citation analysis on subject literatures. All of these serve to deepen and compliment earlier studies.

The studies conducted by Apeji (1990) on Nigerian journals as major sources of information used by researchers in Nigeria, Alemna and Badu (1994) on the nature and trends in research and journal literature in English speaking Africa, and that of Ibeun and Madu (2002) which applied citation analysis to fisheries and aquatic sciences literature in Nigeria all have some bearing with this current study.

But perhaps more relevant to this study are the studies conducted by Yahaya and Isa (2006), Adewale and Ajala (2007), Abubakar and Garba (2007) and to some extent, Nndozie (2008). Adewale and Ajala's Study and that of Nnadozie revealed that journals were the major mediums of Publication in Nigeria. Adewale and Ajala also revealed in their study that inspite of the usual trend in multidisciplinary and science subjects, where multiple authorship was prevalent; the literature of brucellosis in Nigeria is curiously dominated by single authorship. Available literature shows that efforts have so far not been directed at the characteristics of educational research and evaluation literature. This is what this study intends to do.

7. METHODOLOGY

To select a journal in the area of educational research and evaluation to generate the data base for this study, the following criteria were used:

i. the journal must be Nigeria based

ii. it must be Published by a professional association of educational researchers and evaluators
iii. article published in the journal largely make original contributions to empirical studies therefore contribute to knowledge
iv. high academic and professional standing of authors published.

The journal that in our opinion satisfactorily meets these criteria is the Nigerian Journal of Educational Researchers and Evaluators. The journal is a Publication of the Nigeria Association of Educational Researchers and Evaluators (NAERE). The Association usually organizes annual conferences and publishes subsequent conference papers that satisfy stipulated requirements.

At the end of the selection exercise, a total of 134 articles from 10 NAERE journals were used for this study. The distribution of the articles selected by volume, issue and year is presented in Table 1.

Table 1 Distribution of Articles by Volume, Issue and Year

Sl. No.	Year	Volumes & Issue No.	No. of Articles
1	1999	1 (1)	9
2	2000	2 (1)	13
3	2000	2 (2)	11
4	2001	3 (1)	12
5	2003	4 (1)	14
6	2004	5 (1)	21
7	2007	7 (1)	10
8	2008	8 (2)	8
9	2008	8 (3)	16
10	2010	9 (1)	20
Total			**134**

8. RESULTS AND DISCUSSIONS

The results are presented based on the research questions as above.

8.1 Research Question 1

What are the formats of use for the literature of educational research and evaluation?

The result in Table 2 shows that a total number of 1,634 citation were consulted by the authors of educational research and evaluation.

Table 2 also shows that Monographs have 869 (53.2%) citations, Journals 406 (24.8%) citations, Theses 66 (4.0%) citations, Conference Proceedings 101 (6.2%) citations, Newspapers and Magazines 53 (3.2%) and other types of format lumped together 139 (8.6%) citations. The results presented in Table 2 on the distribution of cited literature thus indicates that monograph (book) was the most useful format for disseminating research finding in educational research and evaluation. This finding is in agreement with an earlier study by Apeji (1998).

Table 2 Distribution of Cited Literature by Format Categories

Format Categories	Cited Literature	
	No.	%
Monographs	869	53.2
Journals	406	24.8
Theses	66	4.0
Conference Proceedings	101	6.2
Newspapers and Magazines	53	3.2
Others	139	8.6
Total	**1,634**	**100**

8.2 Research Question 2

What are the geographical dispersion of the citations in the literature of educational research and evaluation?

Table 3 revealed a total of 1,634 citations, out of which 1,007 (61.6%) citations were from Nigeria while 627 (38.4%) were from outside Nigeria. Monograph accounted for a total of 869 citation out of which 484 (55.7%) were from Nigeria while 385 (44%) were from outside Nigeria. Journals have a total of 406 citation out of which 240 (59.1%) were from Nigeria. The contributors to the NAERE journal consulted 66 theses out of which 63 (95.5%) were from Nigeria and only 3 (4.5%) were from outside Nigeria. Conference Proceedings has 101 citations, 81 (80.2%) of them were from Nigeria while 20 (19.8%) were not from Nigeria. Newspapers and magazines recorded 53 citations and 49 (92.5%) of them were from Nigeria. For the other format categories, Table 3 revealed 139 citations out of which 90 (64.7%) were from Nigeria while 49 (35.3%) were not from Nigeria.

Table 3 Distribution of Citation by Format and by Geographical Location

Sl. No.	Format Categories	No. of Citation	Citations From Nigeria		Citation From Outside Nigeria	
			N	%	N	%
1	Monograph	869	484	55.7	385	44.3
2	Journal	406	240	59.1	166	40.9
3	Theses	66	63	95.5	3	4.5
4	Conference Proceedings	101	81	50.2	20	19.8
5	Newspaper and Magazines	53	49	92.5	4	7.5
6	Others	139	90	64.7	49	35.3
Total		**1,634**	**1,007**	**61.6**	**627**	**38.4**

8.3 Research Question 3

What are the forms of authorship in educational research and evaluation?

Table 4 shows that two forms of authorship (i.e. Single and Joint authorship) were involved in the production of articles for educational research and evaluation. The table revealed that a total of 170 authors produced 134 articles. Single authors produced 101 (75.4%) articles and 33 (24.6%) articles were produced by joint authors numbering 69 (40.6%)) of the total of 170 authors that contributed to the production of the entire 134 articles for educational research and evaluation. Inspite of the current trends in scholarship that suggest increasing emphasis on collaborative or joint research and authorship, table 4 however, revealed that the trend of authorship in Nigeria on educational research and evaluation was still largely propelled by single efforts. This findings corroborated the findings by Mommoh (1994 -95).

Table 4 Number and Percentage Distribution of Articles by Forms of Authorship

Forms of Authorship	Authors		Articles Produced	
	N	%	N	%
Single Authorship	101	59.4	101	75.4
Joint Authorship	69	40.6	33	24.6
Total	**170**	**100**	**170**	**100**

8.4 Research Question 4

What are the gender categories of authors in educational research and evaluation?

From table 5 above, it could be seen that out of the 170 authors, 118 (69.4%) were male while 52 (30.6%) were female. The implication of this finding is that literature of educational research and evaluation in Nigeria was dominated by male authors.

Table 5 Number and Percentage Distribution of NAERA Journal Authors' by Gender

Authors' Gender	Number	%
Male	118	69.4
Female	52	30.6
Total	**170**	**100**

9. CONCLUSION

It is a fact that educational researchers and evaluators consider, before use, the relevance of citation in literature such as monograph, journals, theses, conference proceedings, newspaper and magazines. However, taken together, the results of this study strongly revealed that, the dominant format for the dissemination of findings in educational research and evaluation in Nigeria is the monograph.

10. RECOMMENDATION

This study has confirmed that Nigerian Educational Researchers and Evaluators mostly use monographs and perhaps journals emanating from Nigeria. This trend is

the result of poor access to, or unavailability of necessary foreign literature in our libraries. It is strongly recommended that Nigerian libraries should help to address this gap by acquiring foreign literature of various formats for the use of researchers.

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Resources and Services of the Law College Libraries in Karnataka

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Abstract

The paper outlines the resources and services available in the Karnataka Law colleges affiliated to the Karnataka state Law University, Hubli. It surveys the Law colleges and studies the present status, type of management, Library committee, and nature and extent of resources and services available. Further it indicates the ways and means of improving existing services in the Law colleges.

Keywords: *Resources and Services, Law College libraries, Law University Hubli*

1. INTRODUCTION

Information explosion as it is known in everyday parlance is not only the executive domain of science and technology but also the social science. 'Law' is not an exception to it, it can be said that it faced print explosion much earlier than in science and technology. Law is not static, it is ever dynamic and one who is seriously interested in it will have to keep abreast of the latest trends in law.

A library is a reservoir of the intellectual resources for the academic community it serves with a growing emphasis in modern education. As such libraries have become the backbone of higher education. Judges and advocates make heavy use of such sources. Law libraries in a region will have to come together. In meeting the information requirements, documentation and other activities, which have to be improved and librarians must innovate in providing new services. Due to the rapid progress and development of higher education in India and the teaching methods and research, it is keenly felt that the future law libraries will function as a vital and integral part of the teaching process.

The Law College Libraries will be entitled to lay higher standards and also additional requirements over and above the requirements prescribed by the BCI and UGC to be fulfilled by Law Colleges in the State. In the present paper an attempt has been made to study the resources and services of the Law College libraries affiliated to Karnataka state Law University.

2. OBJECTIVES

Following are the main objectives of the study:

i. To Survey the status of Law college libraries in karnataka State.
ii. To know the different forms of Management in Law College libraries.
iii. To identify the existing Library Committee.
iv. To provide some guidelines improve the library services.

3. METHODOLOGY

The purpose of the investigation is to make an assessment of the facilities available for users and to know the various resources of Law College libraries affiliated to Karnataka Law University, Hubli. A structured Questionnaire was framed to interact with librarian and the information has been recorded, hence the law college librarians were the target group of the present survey, to get the required data.

4. ANALYSIS OF THE DATA

Table1 indicates the chronological establishment of Law colleges affiliated to Karnataka state Law University. Before 1940 there was only one college. The growth of the Law colleges were quite slow during 1941-1950 hardly three college were established (3.62%). The next decade that is 1951-1960 four more colleges have been established (4.82%). In 1961-1970 again five more colleges were established. It is surprise to note that during this fifth decade i.e. 1975- 1980 suddenly we can see 16 colleges were established in this period (19.28%). Highest numbers of the colleges have been established during 2001-2009 i.e. 26 almost 1/3 of the colleges. These colleges are catering the needs of the Law students and professionals.

Table 1 Showing the Law College Libraries Surveyed

Year of Establishment	No. of Colleges	%
Before 1940	01	1.20
1941-1950	03	3.62
1951-1960	04	4.82
1961-1970	05	6.04
1971-1980	16	19.28
1981-1990	14	16.86
1991-2000	14	16.86
2001-2009	26	31.32
Total	**83**	**100**

4.1 Types of Institutions

Table 2 shows that 5 (6.02%) law colleges were run by University/ Government, 2 (2.42%) colleges are aided and remaining 76 (91.56%) colleges are unaided private self financing law colleges.

Table 2 Law Colleges- Forms of Management

Management	No. of Colleges	%
University/ Government	5	6.02
Aided	2	2.42
Private	76	91.56
Total	**83**	**100**

4.2 Personnel Working in Law College Libraries

Table 3 shows that 40 (48.19%) law college libraries under the study are having only 1-2 professional staff, followed by 25 (30.13%) colleges are having 3-4 professionals, and 5-6 professionals are working in 18 (21.68%) colleges under the study.

Table 3 Professional Staff Strenth

No. of Hours	No. of Libraries	%
1-2	40	48.19
3-4	25	30.13
5-6	18	21.68
Total	**83**	**100**

Table 4 shows that 35 (42.16%) are having 1-3 semi-professionals followed by 41 (49.39%) law colleges are having 4-6 semi-professionals and 7-9 semi-professionals are working in only 07 (8.45%) colleges under the study.

Table 4 Semi-Professional Staff Strength

No. of Hours	No. of Libraries	%
1-3	35	42.16
4-6	41	49.39
7-9	07	8.45
Total	**83**	**100**

4.3 Book Collections

Table 5 shows that 05 (6.02%) law colleges the total collection is ranging from 5001-10000, followed by 10001-15000 in 07 (8.45%) law colleges, 15001-20000 in 06 (7.24%) law colleges, 20001-25000 in 10 (12.04%) law colleges, 25001-30000 in 10 (12.04%) law colleges, 30001-35000 in 15 (18.07%) law colleges and more than 35000 collection is available in 30 (36.14%) law colleges under the study.

Table 5 Books Collection in Engineering College Libraries

No. of Document	No. of Libraries	%
5001-10000	05	6.02
10001-15000	07	8.45
15001-20000	06	7.24
20001-25000	10	12.04
25001-30000	10	12.04
30001-35000	15	18.07
Above 35000	30	36.14
Total	**83**	**100**

4.4 Current Periodicals

An indispensable tool of legal research is the law journal. Legal writings in law journals are a rich source of information on a particular point and can be used by a researcher in several ways the basic advantage of an article over a textbook is that it deals with a specific area in depth. There are very few law journals exclusively devoted to legal writing in India. The investigator therefore obtained the data from 83 libraries,

and these are categorized into foreign and India journals and the data are presented in Table 6.

4.5 Financial Resources

Table 6 shows that 45 law colleges 53(63.85%) law colleges are receiving grants from management. Out of 45 law colleges 20 (24.09%) law colleges are receiving grants from state government. Ten law colleges under the study are also receiving grants from the central government.

Table 6 Sources of Finance

Sources	No. of Libraries	%
Management	53	63.85
State Government	20	24.09
Central Government	10	12.04
Total	**83**	**100**

4.6 Services Offered

The main task of the college library is to supplement the teaching and learning process of teachers and learners. For this purpose and also to make their teaching and learning more effective, the library has to set various services, so that the information needs of teachers and students are satisfied. While the service of college libraries in their early stage was restricted to circulation of books, with changing circumstances today, we find several services extended to their users.

Table 7 Services Offered By Libraries

Services	No. of Libraries	%
Reference Service	83	100
Bibliographic Databases on CD ROM	80	96.38
Internet Services	50	60.24
Inter Library Loan	81	97.59
CAS	39	46.98
SDI	35	42.16
Reprographic Services	23	27.71
News Paper Clipping Services	40	48.19

Table 7 exhibits the services provided by the libraries. References services are provided in all the law college libraries. 80 libraries are providing CD ROM Bibliographic data base search service, 50 libraries are providing Internet service to the teachers, representing 40.00% and 62.22% respectively. 81 (97.59%) libraries are providing inter library loan facility. Current awareness service and SDI services are not provided in large number of libraries, they presenting 39 (46.98%) and 35 (42.16%) respectively. 23 (27.71%) libraries are providing reprographics services and 40 (48.19%) libraries are providing newspaper-clipping service to the teachers.

5. CONCLUSION

The data collected from 83 law college libraries are analyzed and explore the status of resources and services provided to the users. Some of the college have rich collection and infrastructure facilities, acquisition, processing, maintenance, reference and periodic subscription in promoting the legal education & law library resources and services. All necessary steps should be taken to improve the conditions of law college libraries. Hence it is left to the domain of the library authorities to provide good and independent building, reading materials, manpower and required facilities with healthy atmosphere in the library. Findings of the study are useful for policy makers to provide efficient services in the law college libraries.

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Information Seeking Pattern of B.Ed Students at St. Charles College of Education, Thirunagar, Madurai

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Abstract

It is the need for information that makes our readers utilize the library, its resources and services. It is their thirst to fill the gap in their knowledge base which makes them use different sources of information in varieties of formats in their libraries. The present study aims at describing the information seeking pattern of B.Ed students of St.Charles College of Education, Thirunagar, Madurai. 95 B.Ed students were selected by random sampling method for the study. Data was collected from questionnaires. The study reveals that : Majority of the respondents are in 20-24 years age group. 67% of respondents have hailed from rural area. 'Weekly Visit' (58.95%) is the most frequently used library period by the respondents under study. 39(41%) respondents visit the library for getting subject information. Both Lending section and newspaper section (94.74%) are the most visited sections of the library. General books are the most sought after library materials by 72(22.78) students followed by newspaper being sought by 66 (20.89%) respondents. Most of the respondents (53) seek information to prepare themselves for class work and to know the subject. Lack of time is the major problem faced by 30% (29) of the respondents and 'Non-availability of material' is the next big problem faced by 27%(26) of them. (34%) respondents search for information by going to the shelf directly, 42(44%) respondents start their searching from the catalogue and just 21 (22%) respondents ask for librarian's help in searching for information. Newspapers are the most popular source for getting current information among 63 respondents followed by Internet with 43 respondents. 42% (40) of the respondents are getting the exam-oriented textbooks from the departmental library. Books are the most preferred channel of information for 84 respondents followed by the journals as the channels of information preferred second by 64 respondents. Majority of the respondents, say 64, (67%) use ''Internet" for getting needed information. 90 (95%) respondents are satisfied with the library services.

***Keywords**: Current information sources, Channels of communication, Information seeking behavior, Information need, Level of satisfaction, Search strategy*

1. INTRODUCTION

The users keep on changing in an academic environment. Depending on the course and level of studies, the period during which a particular group of students use an academic library is decided. In the context of ever changing electronic environment, the users' expectations, needs, demands, approaches and attitudes too, have got changed drastically. The way they perceive the library as a place for their information gathering activity, the way they approach different kinds of documents available in the library, the manner in which they seek information, the changes in their need for different kinds of electronic resources, their preference over varieties of channels of information, the frequency of their visit to the library and all have transposed tremendously.

2. ST.CHARLES COLLEGE OF EDUCATION

St. Charles college of Education is an Institution of the Society of St. Charles, Madurai belonging to the congregation of the sisters of St. Charles Borromeo. Mission of the college is To train and form women who will Enlighten and empower the poor and The marginalized, in order to build A new heaven and a new earth. The College has Computer Lab, Science Lab, Language and Psychology labs, Sports facilities and an audio Visual Room. St.Charles College of Education has got an airy and a spacious library with 3,500 books including reference books and 20 Educational Journals. The college conducts B.Ed course on subjects like Tamil, English, Maths, Physical Science, Biological Science, Computer Science, History, Commerce and Economics.

3. INFORMATION SEEKING BEHAVIOUR

Information seeking is a conscious effort to acquire information in response to a need or gap in your knowledge. Information behavior encompasses information seeking as well as the totality of other unintentional or passive behaviours (such as glimpsing or encountering information), as well as purposive behaviours that do not involve seeking, such as actively avoiding information. Information seeking behaviour that results from recognition of some need (Wilson, 1981) is defined by Kriekelas (1983, p. 6-7) * as any activity of an individual that is undertaken to identify a perceives that the current state of possessed knowledge is less than that needed to deal with some issue (or problem)".

4. REVIEW OF LITERATURE

Chaurasia & Chaurasia (2012) focused on the information seeking behaviour of Research Scholars and P.G. Students of Indian Institute of Technology Delhi. A questionnaire was randomly circulated to one hundred respondents and 76 filled in questionnaires were returned. The study revealed that : The World Wide Web has attracted the attention of the students as an easy source of accessing information and E-Resources. Most of the students and scholars access E-Resources for research work, for updating their knowledge and for career development and growth. The guidance in the use of library resources and services was necessary to help students meet some of their information requirements. Library should also conduct feedback/users survey to know the need of users time to time. Majid et al. (2012) conducted a study to investigate information needs, information seeking behavior and usage of different information sources by MBA students in Singapore. Data was collected through a pre-tested questionnaire, using the snowball sampling technique. It was found that the basic purposes of seeking information by the students were for writing assignments, conducting case study analyses, and preparing for student presentations and class discussions. Mostly students were looking for information about market research, financial information, economic news, and industry trends. Electronic information sources were considered more important than printed sources. Pareek, Madan & Rana (2013) undertook a study to determine the information seeking behavior and library use by research scholars at the Banasthali University. The study collected data on the information requirements of researchers. Data were gathered from 100 researchers out of 150 through open and closed questionnaire. Findings indicated that guidance in the use of library resources and services is necessary to help researchers meet some of their information requirements.

Padma, Ramasamy and Sakthi (2013) carried out a study to identify the information needs and information seeking behaviour of Post graduate students of school of Economics at Madurai KamarajUniveristy. 50 respondents were selected giving equal weightage to all the five departments of School of Economics. Findings: 22% of the respondents are using the internet daily in the library. 40% of the respondents use Google. 24% of the respondents use OPAC (library catalogue) to trace the relevant documents available in the library. 40% of the respondents make use of keyword search. 30% of the respondents each feel 'lack of time due to abundant literature' and 'Inadequate resources /library online resources" are the main reasons for getting the required information belated. Kumar and Shukla (2013) examined information seeking pattern of science and art research scholars of Asia's largest residential university Banaras Hindu University, India. The data was gathered using questionnaire survey of 139 (one hundred and thirty-nine) randomly selected, PhD scholars of science and arts departments. It has been found that both the groups of researchers have some similarities and some dissimilarity in information seeking. Even in this electronic era some research scholars of art discipline depend on print form of publications for their information needs.

Bansal and Nirmal Singh (2013) aimed at exploring information seeking patterns of researchers (Ph.D students) of Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana.. Data was collected through questionnaire from all 66 researchers on their visit to library and by personally visiting concerned departments. Purpose of seeking information, use of information resources, time spent on gathering information, use of print and e-resources, etc. are the various factors explored. Harmanpreet Singh (2013) examined the use of collections and services at Dr B.R. Ambedkar NIT Central Library, Jalandhar. Well-structured 196 questionnaires were distributed among NIT Central Library users and 178 filled questionnaires were received. This study demonstrated and elaborated various aspects of the use of collections and services, purpose of visit to the library by the user, adequacy of library hours, infrastructure facilities and use of internet information resources. The paper also identified the levels of use of various services provided, access of online database services, database search techniques, and users' awareness about different types of library network.

Adekunle (2014) investigated the information needs and information seeking behaviour among the students of Ondo State University of Science and Technology, Okitipupa, Nigeria. The sample consisted of 89 students selected from the four existing Departments. Questionnaire was used to gather relevant data while percentage count and frequencies were used for the presentation and analysis of data. The findings revealed that: course work and assignment, examination and Text, General reading, Seminars and Workshops were factors that influence students' information seeking behavior; Internet, Lecture Notes, Test Books, and Handout were the preferred and most used information sources.

5. OBJECTIVES OF THE STUDY

The objectives of the study are, interalia:

i. To list the primary purpose of using the library by the respondents
ii. To identify the frequency of library usage by the respondents
iii. To identify the various library sections visited by the respondents
iv. To know the types of materials sought by the respondents
v. To trace out the methods, reasons for and problems in seeking information
vi. To know the level of satisfaction of information sources and library facilities
vii. To rate the services & collection of the library & the channels of information
viii. To identify the document preference pattern of the respondents and
ix. To identity the sources used by the respondents for getting current information and exam-oriented textbooks

6. METHODOLOGY

6.1 Research Type : The study is a descriptive survey research.

6.2 Sample

***6.2.1. Name of the College* :** 'St.Charles College of Education, Madurai

6.2.2. Selection of Samples': 95 respondents who are doing their B.Ed in the college. 95library users were chosen by the researcher as per his convenience i.e. first 95 willing library visitors on the days of data collection.

6.3 Tool for Data Collection : Questionnaire is used for collecting data from the chosen sample. A simple but a clearly presented questionnaire with 26 questions was used as a tool.

6.4 Method of Data Collection : The data was collected from the sample users in the month of April 2014. The questionnaires were distributed to the library users on the days of visit by the researcher personally.

7. DATA ANALYSIS AND INTERPRETATION

The data collected was simplified by means by tables-single column and double column or triple column tables-prepared with the help of coding with tally marks. The tabulated data was analysed with simple percentage method in MS Excel to draw necessary inferences.

7.1 Age-wise Distribution

Table 1 shows the age-wise distribution of the respondents. 77(81%) respondents belong to 20-24 years age group and 14(15%) respondents are in 25-29 years age group, followed 04(04%) respondents who are in 30 & above years age group. From this it is inferred that majority of the respondents are in 20-24 years age group.

Table 1 Age-wise Distribution

Sl. No.	Age	No. of Respondents	%
1	20-24	77	81
2	25- 29	14	15
3	30 &	04	04
Total		**95**	**100**

7.2 Frequency of Library Visits

Table 2 depicts that 58.95% of the respondents visit the library once week and 27.37% (26) of the respondents visit the library every day. While 10.53% (10) of the respondents visit the library once in two days, 3.15% (3) of the respondents visit the library once in 4 days. Thus 'Weekly Visit' is the most frequently used library period by the respondents under study.

Table 2 Frequency of Library Visits

Sl. No.	Time Spent	No. of Respondents	%
1	Every Day	26	27.37
2	Once in Two	10	10.53
3	Once in 4 Days	03	03.15
4	Once a Week	56	58.95
	Total	**95**	**100**

7.3 Purpose of Visiting Library

Table 3 indicates the different purposes that make the respondents visit the library. 39(41%) respondents visit the library for getting subject information. While 19(20%) respondents visit library for getting general information, 06(06%) respondents for getting current information. 28(29%) respondents visit the library to get reference information followed by 03(03%) respondents', who come to library to get recreational information.

Table 3 Purpose of Visiting Library

Sl. No.	Purpose	No. of Respondents	%
1	Subject Information	39	41
2	General Information	19	20
3	Current Information	06	06
4	Reference Information	28	29
5	Recreation Information	03	03
	Total	**95**	**100**

7.4 Visit to Various Sections of the Library

It is made clear by Table 4 that 94.74 % of the respondents visit the lending section and newspaper section of the library. While 89.47 % of the respondents have visited reading room, 78.95% of them have visited the reference section. 68.42 % of them have visited the textbook section of the library while 31.58% of them have visited the periodical section. Only 23.16 % of respondents have visited the quick reference section of the library. It is inferred from above analysis that lending section and newspaper section are the most visited sections of the library.

Table 4 Visit to various sections

Sl. No	Frequency	No. of Respondents	%
1	Lending Section	90	94.74
2	Textbook Section	65	68.42
3	Reference Section	75	78.95
4	Periodical Section	30	31.58
5	Newspaper Section	90	94.74
6	Quick Reference Section	22	23.16
7	Reading Room	85	89.47

7.5 Types of Materials Sought by the Respondents

Table 5 demonstrates that general books are the most sought after library materials by 72(22.78) students followed by newspaper being sought by 66 (20.89%) respondents. While 65(20.57%) respondents search for textbooks, 48 (15.19%) of them look for periodicals in the library. It is noted that the least sought after materials among the above listed is competitive exam books being used by 24 respondents.

Table 5 Materials Sought by the Respondents

Sl. No.	Materials	No. of Respondents	%
1.	Textbooks	65	20.57
2.	Periodicals	48	15.19
3.	Newspapers	66	20.89
4.	Reference Books	41	12.97
5.	General Books	72	22.78
6.	Competitive Exam	24	7.595
	Total	**316**	**100**

7.6 Utilization of College Library Services

Table 6 shows the level of satisfaction of the respondents on the library services. 69 respondents feel good about book lending service and 59 of them rated the library reference service as good. While 43 respondents are satisfied with library current awareness service, 26 respondents are satisfied with book lending service in the library. 17 respondents are dissatisfied with inter-library loan service of the library while none is dissatisfied with book lending service.

7.7 Methods of Searching for Information

Table 7 reveals that among Ninety five respondents, 32(34%) respondents search for information by going to the shelf directly, 42(44%) respondents start their searching from the catalogue and just 21 (22%) respondents ask for librarian's help in searching for information.

7.8 Preference of Document

Table 8 shows the preference of the respondents on various documents in getting their required information. While 79% (75) of the respondents prefer Subject Books than all other documents, 8% (7) of them prefer to use periodicals. While 5% (5) of the respondents prefer online sources, 4% (4) each prefer to use conference proceedings and non-print sources.

Table 6 Utilization of College Library Services

Sl. No.	Services	Good	%	Satisfactory	%	Unsatisfactory	%
1	Book Lending	69	72.63	26	27.37	00	0
2	Book Reservation	52	54.74	42	44.21	01	1.05
3	Inter Library Loan	39	41.05	39	41.05	17	17.9
4	Reference Service	59	62.11	34	35.79	02	2.11
5	Current Awareness Services	48	50.53	43	45.26	04	4.21
6	Selective Dissemination of Information	44	46.32	42	44.21	09	9.47
7	Display of New Arrivals/ Information	48	50.53	38	40	09	9.47
8	Newspaper Clipping Service	56	58.95	36	37.89	03	3.16

Table 7 Methods of Searching for Information

Sl. No.	Methods of Searching Information	No. of Respondents	%
1	Searching on the shelf	32	34
2	Starting from	42	44
3	Asking help from	21	22
Total		**95**	**100**

Table 8 Preference of Document

Sl. No.	Preference	No. of Respondents	%
1	Subject books	75	79
2	Periodicals	07	08
3	Conference Proceeding	04	04
4	Non Print Sources	04	04
5	Online Sources	05	05
Total		**95**	**100**

7.9 Sources for Current Information

It is obvious to note that newspapers are the most popular source for getting current information among 63 respondents followed by Internet with 43 respondents. Notice boards are ranked third with 38 respondents and journals are ranked fifth with 29 respondents.

7.10 Sources for Exam-oriented Textbooks

Table 10 makes it clear that 42% (40) of the respondents are getting the exam-oriented textbooks from the departmental library and 27% (26) of the respondents get the same from their teachers. While 14% of the respondents obtain necessary exam-oriented textbooks from their senior students, 15% (14) of them get it from their classmates.

Table 9 Sources for Current Information

Sl. No.	Current Information	Ranking	No. of Respondents	%
1.	Newspaper	I	63	31
2.	Internet	II	43	21
3.	Notice	III	38	19
4.	Audio	IV	30	15
5.	Journal	V	29	14
Total			**203**	**100**

7.11 Reason for Seeking Information

It is seen from Table 11 that the most of the respondents (53) seekinformation to prepare themselves for class work and to knowthe subject. While 28(29%) respondents search for information to get awareness of knowledge on the set topic(s), 14 of them look for information to write articles for journals or conferences or seminars.

Table 10 Sources for Exam-oriented Textbooks

Sl. No.	Source of Learning	No. of Respondents	%
1	Departmental Library	40	42
2	Teachers	26	27
3	Senior Students	13	14
4	Classmates	14	15
5	Other Libraries	02	02
Total		**95**	**100**

Table 11 Reason for Seeking Information

Sl. No.	Seeking Information	No. of Respondents	%
1	For Preparing Class Work for Knowing the Subject	53	56
2	For Awareness of Knowledge	28	29
3	For Participating in Seminar/ Conference	06	06
4	For Writing Articles	08	09
Total		**95**	**100**

7.12 Ranking the Channels of Information

It is understood from Table 12 that books are the most preferred channel of information for 84 respondents followed by the journals as the channels of information preferred second by 64 respondents. Three channels of communications namely 'web information', Conference Proceedings' and "CD-ROMs/DVDs" were all given third position by 61 respondents each and thesis/ dissertation obtained fourth rank as a channel of information by 59 respondents.

7.13 Problems in Seeking Information by the Respondents

Table 13 reveals the problems which are faced by the respondents in seeking information. Lack of time is the major problem faced by 30% (29) of the respondents and 'Non-availability of material' is the next big problem faced by 27%(26) of them. While 'Existence of Old materials' is the problem for 15% (14) of the respondents, 7% (07) of them have two problems each namely Incomplete information' and "Ignorance of use of catalogue''. While 2% of the respondents feel that library staff are unwilling to serve, 1%(1) of the respondents opined that information being so vast is a problem faced by them in seeking information

Table 12 Ranking the Channels of Information

Sl. No.	Channels Of Information	Ranking	No. of Respondents	%
1	Books	I	84	22
2	Journals	II	64	16
3	Information Through Web	III	61	16
4	Conference Proceedings	İII	61	16
5	CD- ROMs/ DVDs	III	61	15
6	Thesis/ Dissertation	IV	59	15
Total			**390**	**100**

7.14 Level of Satisfaction of Information Sources

Table 14 exhibits that 91.58 % (87) of the respondents are satisfied with books and 89.47 % (85) of them are satisfied with reference books and newspapers. While 78.95 % (75) of the respondents are satisfied with journals/ periodicals, 74.74% (71) of them are contented with general magazines. While 36.8 % (35) of the respondents are dissatisfied with competitive exam magazines, just 8.42 % (8) of them are dissatisfied with books.

7.15 Level of Satisfaction-Library Facilities

Table 15 depicts the level of satisfaction felt by the respondents on various library facilities/arrangement. While 71.58% (68) of the respondents opined that lighting is good in the library, 69.47 % (66) of them feel good about library ventilation. And 67 respondents remarked that seating arrangement in the library is good. While 39 respondents expressed that they are satisfactory with cataloguing facility, 24 of them are satisfied with lighting arrangement. While no one is unsatisfied with book arrangement, 6 of them are dissatisfied with cataloguing provisions in the library.

Table 13 Problems in Seeking Information by the Respondents

Sl. No.	Problems	No. of Respondents	%
1	Material is Not Available	26	27
2	Library Staff Are Unwilling For Service	02	02
3	Incomplete Information Material	07	07
4	Do not Know How to Use the Catalogue	07	07
5	Lack of Time	29	30
6	Lack of Knowledge Using The Library	05	05
7	Information Scattered in Too Many	04	05
8	Information is Too Vast	01	01
9	Some of Information Materials are Old	14	15
Total		**95**	**100**

Table 14 Level of Satisfaction -Sources

Sl. No.	Sources	Satisfied	%	Dissatisfied	%
1	Books	87	91.58	8	8.42
2	Reference Books	85	89.47	10	10.5
3	Journals/ Periodicals	75	78.95	20	21.1
4	News Papers	85	89.47	10	10.5
5	General Magazines	71	74.74	24	25.3
6	Competitive Exams	60	63.16	35	36.8
7	Any Others	71	74.74	24	25.3

Table 15 Level of Satisfaction-Library Facilities

Sl. No.	Library Facilities	Good	%	Satisfactory	%	Unsatisfactory	%
1	Ventilation	66	69.47	26	27.4	03	3.16
2	Lighting	68	71.58	24	25.3	03	3.16
3	Cataloguing	50	52.63	39	41.1	06	6.32
4	Book arrangement	60	63.16	35	36.8	00	0
5	Seating	67	70.53	27	28.4	01	1.05

7.16 Satisfaction of Library Service

Table 16 makes it clear that 90(95%) respondents are satisfied with the library services and only 5(5%) respondents are not satisfied with library services.

Table 16 Satisfaction of Library Service

Sl. No.	Library Services	No. of Respondents	%
1	Satisfied	90	95
2	Not Satisfied	05	05
Total		**95**	**100**

8. SUGGESTIONS

i. The library users of more than 25 years of age may be encouraged to use the library effectively by providing suitable kinds of resources and variety of services personally aiming at them.
ii. A kind of Library period allocation may be done for the students so as to make them visit and use the library frequently.
iii. The reference section of the library should be made attractive (with resources and display programmes) so as to draw the attention of library users.
iv. Latest editions of competitive exam books and magazines are to be purchased and made available to the users.
v. A user study on the '' list of books / materials most wanted' may be conducted to elicit exact requirements of the users.
vi. OPAC service may be initiated in the library. A user education programme may be organized on the functions and use of OPAC.
vii. Inter-library loan, as a service, may be introduced with the co-operation of neighbouring B.Ed college libraries.
viii. Enough shelf-guides and Bay guides may be displayed in the stack room.
ix. E-resources may be added to the library collections.
x. Sufficient number of computers may be provided in the library with internet connection.

9. CONCLUSION

In this transforming world of information explosion, the libraries have started reshaping, redesigning and re-engineering themselves with all the necessary infrastructure, sources and services. We have to explore the usefulness, relevance and adequacy of these three components i.e. infrastructure, sources and services of a library in this transfigured working and serving environment. Users are kings in any market. Their information seeking pattern decides the very functioning style of any library. Thus, identifying the exact information seeking pattern of present users will help the professionals to design their library budget, plan and service initiatives.

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Open Access Journals in Library and Information Science: An Analytical Study of Directory of Open Access Journal

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Abstract

The paper discuss various facets related to the Directory of Open Access Journal (DOAJ) open access Scholarly publishing in the field of LIBRARY AND INFORMATION SCIENCE on the basis of data collected from the most authoritative online directory of open access journals, The data collected from web site up to October 2013. The study explores the status of open access titles in the field of Library and Information Science (LIS). Library and Information Science, is also witnessing a dramatic growth in the open access field. Various characteristics highlighting open access titles in the field of LIS are featured in the study.

The DOAJ covers 9974 open access journals of which 142 journals are listed under the subject heading 'Library and Information Science'. Most of the open access journals in Library and Information Science were started during late 1911s and are being published from 40 different countries and 22 different languages. More than 99 % open access journals are being published by the not-for-profit sector such as Universities and Libraries.

***Keywords**: DOAJ, Library and Information Science, Open access journals*

1. INTRODUCTION

Open Access (OA) stands for unrestricted access and unrestricted reuse. Here's why that matters. Most publishers own the rights to the articles in their journals. Anyone who wants to read the articles must pay to access them. Anyone who wants to use the articles in any way must obtain permission from the publisher and is often required to pay an additional fee.Although many researchers can access the journals they need via their institution and think that their access is free, in reality it is not. The institution has often been involved in lengthy negotiations around the price of their site license and re-use of this content is limited.

Paying for access to content makes sense in the world of print publishing, where providing content to each new reader requires the production of an additional copy, but online it makes much less sense to charge for content when it is possible to provide access to all readers anywhere in the world.

Open Access (OA) means immediate, permanent, free online access to the full text of all refereed research journal articles. (2.5 million articles a year, published in 24,000 refereed journals, across all disciplines, languages and nations).

We have concentrated on journals which publish research results and findings. Virtually all are now published online, and they increasingly include sophisticated navigation, linking and interactive services. Making them freely accessible at the point of use, with minimal if any limitations on how they can be used, offers the potential to reap the full social, economic and cultural benefits that can come from research have concentrated on journals which publish research results and findings. Virtually all are now published online, and they increasingly include sophisticated navigation, linking and interactive services.

2. DOAJ

The Directory of Open Access Journals (DOAJ) is website that lists open access journals and is maintained by Infrastructure Services for Open Access (IS4OA). Until January 2013, the DOAJ was maintained by Lund University. The project defines open access journals as scientific and scholarly journals that meet high quality standards by exercising peer review or editorial quality control and "use a funding model that does not charge readers or their institutions for access. The Budapest Open Access Initiative's definition of open access is used to define required rights given to users, for the journal to

be included in the DOAJ, as the rights to "read, download, copy, distribute, print, search, or link to the full texts of these articles".

As of January 2013, the database contains 8536 journals, with an average of four journals being added each day in 2012.The aim of DOAJ is to "increase the visibility and ease of use of open access scientific and scholarly journals thereby promoting their increased usage and impact."

3. OBJECTIVES

The main objective was to study how open access journals in the field of LIS are experimenting with features like publishing origin, publishing models, language usage, format-visibility, article processing, and status concerns.

The present study has been undertaken with the objective of analyzing the following aspects

i. Year-wise distribution of the journals
ii. Country-wise distributions of the journals
iii. Language- wise distribution of journals
iv. publisher –wise distribution of journals
v. Frequency-wise distribution of journals
vi. Format -wise distribution of journals
vii. Subject-wise distributions of journals
viii.License-wise -wise distribution of journals
ix. Keyword wise distribution of journals

4. SCOPE AND METHODOLOGY

The study is restricted to the DOAJ only. The Directory was accessed to get study related data. The data is tabulated and analyzed to get better understanding of the various facets under study. Percentage calculations have been used for interpretation of data.

4.1 Year-wise Growth of OA Journals

The growth in number of OA Journals during last 40 years was analyzed. The journals in library and information science are mostly new journals. Based on the existence date in DOAJ, there are 3 journals in 1970s, 3 in 1980s, 34 in 1990s, 72 in 2000s and the remaining 29 have started in 2010s. It is to be noted that, the existence in DOAJ is not necessarily the year of the founding of the journal, as older journals often have back issues that have not yet been digitized and placed online. Table 1 shows the year-wise growth of OA journals in Library and Information Science. It may be observed from the year-wise analysis of open access journals that at the end of 1980s there were a few OA journals in Library and Information Science, but this number increase in to 72 at the end of 2009. The 21st century saw a proliferation of OA journals in Library and Information Science.

4.2 Country-wise Distribution of OA Journals

Open access journals in Library and Information Science are published from 40 different countries. United States and Brazil are the leading countries in OA Journals publishing, while there is only one journal published from 18 countries. As shown in Table 2, the majority of OA journals were published from united states with 36(25.35%) ,followed by Brazil 13(9.15%) followed by the Spain 12(8.45%) followed by the Germany, India, united kingdom 6(4.22%) Spain, followed by Canada and Taiwan 5(3.52%) followed by Iran 4 (2.81%) and rest of the journals published in the sequence of Croatia, France, Netherlands, Poland and Switzerland , Australia, Cuba, Denmark, Italy, Lithuania, Romania, South Korea and Turkey. It was seen that a minimum of 1 (0.70%) journals published OA journals from 18 countries in the sequence of Argentina, Bulgaria, Chile, Chinese, Colombia, Costa Rica, Czech Republic, Egypt, Mexico, New Zealand , Pakistan, Peru, Puerto Rico, Singapore, Slovenia, South Africa, Sweden and Venezuela respectively. It is important to note that only six open access journal in Library and Information Science is published from India.

Table 1 Year-wise Growth of Open Access Journals in LIS

Sl.No.	Decade	Year of Publications	Total Number of Publications	% of Publications
1	1970s	1911	1	0.7
2		1939	1	0.7
3		1975	1	0.7
4	1980s	1985	2	1.4
5		1987	1	0.7
6	1990s	1991	2	1.4
7		1992	1	0.7
8		1993	1	0.7
9		1995	4	2.81
10		1996	7	4.92
11		1997	4	2.81
12		1998	6	4.22
13		1999	9	6.33
14	2000s	2000	6	4.22
15		2001	2	1.4
16		2002	4	2.81
17		2003	7	4.92
18		2004	8	5.63
19		2005	11	7.74
20		2006	15	10.56
21		2007	9	6.33
22		2008	6	4.22
23		2009	5	3.52
24	2010s	2010	5	3.52
25		2011	14	9.85
26		2012	7	4.92
27		2013	3	2.11
Total			**142**	**99.84**

Table 2 Country-wise Distribution of Open Access Journals in LIS

Sl.No.	Country	No. of Journals	% of Publications
1	Argentina	1	0.7
2	Australia	2	1.4
3	Brazil	13	9.15
4	Bulgaria	1	0.7
5	Canada	5	3.52
6	Chile	1	0.7
7	Chinese	1	0.7
8	Colombia	1	0.7
9	Costa Rica	1	0.7
10	Croatia	3	2.11
11	Cuba	2	1.4
12	Czech Republic	1	0.7

13	Denmark	2	1.4
14	Egypt	1	0.7
15	France	3	2.11
16	Germany	6	4.22
17	India	6	4.22
18	Iran	4	2.81
19	Italy	2	1.4
20	Lithuania	2	1.4
21	Mexico	1	0.7
22	Netherlands	3	2.11
23	New Zealand	1	0.7
24	Pakistan	1	0.7
25	Peru	1	0.7
26	Poland	3	2.11
27	Puerto Rico	1	0.7
28	Romania	2	1.4
29	Singapore	1	0.7
30	Slovenia	1	0.7
31	South Africa	1	0.7
32	South Korea	2	1.4
33	Spain	12	8.45
34	Sweden	1	0.7
35	Switzerland	3	2.11
36	Taiwan	5	3.52
37	Turkey	2	1.4
38	United Kingdom	6	4.22
39	United States	36	25.35
40	Venezuela	1	0.7
Total		**142**	**99.81**

4.3 Language-wise Distribution of OA Journals

The Table 3 represents the language wise distribution of OA Library and Information Science journals. The above table showed the majority of the journals published under English language with 102 (51%), Spanish with 27 (13.5%), Portuguese with 18 (9%), French & German with 10 (5%), Chinese with 5 (2.5%), Italian with 4 (2%), Catalan & Polish with 3 (1.5%), Croatian, Danish, Lithuanian, Romanian & Turkish with 2 (1%), Arabic, Bulgarian, Czech, Farsi, Persian, Slovak, Slovene & Swedish with 1 (0.5). It is evident that English is the predominant language for researchers to publish their findings.

Table 3 Language-wise Distribution of Open Access Journals in LIS

Sl. No.	Languages	No. of Journals	% of Publications
1	Arabic	1	0.5
2	Bulgarian	1	0.5
3	Catalan	3	1.5
4	Chinese	5	2.5
5	Croatian	2	1
6	Czech	1	0.5
7	Danish	2	1
8	English	102	51
9	Farsi	1	0.5
10	French	10	5
11	German	10	5
12	Italian	4	2
13	Lithuanian	2	1
14	Persian	1	0.5
15	Polish	3	1.5
16	Portuguese	18	9
17	Romanian	2	1
18	Slovak	1	0.5
19	Slovene	1	0.5
20	Spanish	27	13.5
21	Swedish	1	0.5
22	Turkish	2	1
Total		**200**	**100**

Note: some of the journals are published more than one language; below the table show the details of multiple language wise distribution of open access journals in library and Information Science in DOAJ

Table 3.1 Language-wise Distributions of Open Access Journals in LIS

Sl. No.	Languages	No. of Journals	% of Publications
1	One language	100	70.42
2	Two Languages	31	21.83
3	Three Languages	8	5.63
4	Four Languages	1	0.7
5	Five Languages	2	1.4
Total		**142**	**99.98=100**

The Table 3.1 represents the language wise distribution of OA Library and Information Science journals. When it comes to the content language(s) 100 (70.42%), are are unilingual, 31 (21.83%), are bilingual,

8 titles (5.63%), in three language, 1 titles (0.70%), in four language and a single title with 2 (1.40%). is published in a maximum of Five languages. Overall, OA LIS journals are represented in 22 different languages. It is evident that single language covers mostly English, is the predominant language for researchers to publish their findings.

4.4 Publishers–wise Distribution of OA Journals

The characteristics of any literature study involve publishing pattern as the basic analysis. Table 4 envisages the publishers wise distributions of OA JOURNALS. These sectors have been grouped into ten district categories for the convenience of the study. It is found that universities are the leading publishers of OA Journals which publish 62 titles (43.66%) of the total, followed by library/librarians with 24 (16.90%), library association with 18 (12.67%), institute/academic with 14 (9.85%), research institute with 10 (7.04%), documentation centre/ group with 5 (3.52%), society/publication with 4 (2.81%), college and information centre with 2 (1.40%) titles respectively. The remaining 1 journal (0.70%) was contributed by conference.

Table 4 Publishers-wise Distribution of Open Access Journals in LIS

Type of Publishers	No. of Journals	% of Publications
Conference	1	0.7
Library Associations	18	12.67
Society/Publications	4	2.81
Universities	62	43.66
College	2	1.4
Documentation Centre/Group	5	3.52
Institute/Academic	14	9.85
Library/Librarians	24	16.9
Research Institute	10	7.04
Information Centre	2	1.4
Total	**142**	**99.95**

4.5 Frequency-wise Distribution of Journals

It may be observed from Table 5, that the frequency of 52 journals is twice a year, frequency of 27 journals is quarterly, frequency of 14 journals is annually, frequency of 6 journals is thrice in a year, frequency of 4 journals is six time a year and the frequency of 2 journals is monthly. The frequency of 1 journal is fort nightly. The frequency detail of 36 journals could not be traced, and the Publication of these journals was irregular.

Table 5 Frequency-wise Distribution of Open Access Journals in LIS

Sl. No.	Frequency	No. of Journals	% of Publications
1	Annual	14	13.2
2	Bi-Annual	52	49.05
3	Monthly	2	1.88
4	Bi-Monthly	4	3.77
5	Quarterly	27	25.47
6	Yearly Three	6	5.66
7	Fort Nightly	1	0.94
8	Not – Mention	36	25.35
Total		**142**	**99.97**

4.6 Format of OA Journals

When identifying the modes of delivery of the articles of OA journals, it may be observed from Table 6 that 75(81.52%) journals provide articles in PDF format, followed by 8 (8.69%) journals provide articles in both PDF & HTML format, followed by 3 (3.26%) journals provide articles in HTML format, followed by 2(2.17%) journals provide articles in both PDF, HTML & XML and also EPUB format, followed by 1 (1.08%) journals provide articles in both PDF & XML and HTML & XML format for reading and downloading purposes. Whereas 50 (35.21%) number of journals not mentioning the format. most of the journals are published in PDF format only, because its user friendly format for readers.

Table 6 Format-wise Distribution of Open Access Journals in LIS

Sl. No.	Format	No. of Journals	% of Publications
1	PDF	75	81.52
2	HTML	3	3.26
3	PDF & HTML	8	8.69
4	PDF & XML	1	1.08
5	PDF, HTML & XML	2	2.17
6	HTML & XML	1	1.08
7	EPUB	2	2.17
8	NOT MENTION	50	35.21
Total		**142**	**99.97**

4.7 Subject Covered of OA Journals in LIS

The Table 7 above showed the majority of the Open Access journals subject appeared under library and information science, with 114 (80.28%) followed by Computer Science-Library and Information Science with 10 (7.04%), Library and Information Science -Medicine (General) with 8 (5.63%), Library and Information Science-Media and communication with 3 (2.11%), Social Sciences-Library and Information Science with 2 (1.40%), Library and Information-Science Business and Management, History-Library and Information Science, Library and Information Science-Philosophy, Library and Information Science-Religion, Library and Information Science-Technology (General) with1 (0.70%).

Table 7 Subject Covered of Open Access Journals in LIS

Subject	No. of Journals	% of Publications
Library and Information Science - Business and Management	1	0.7
Computer Science - Library and Information Science	10	7.04
History - Library and Information Science	1	0.7
Library and Information Science	114	80.28
Library and Information Science - Media and communication	3	2.11
Library and Information Science --- Medicine (General)	8	5.63
Library and Information Science --- Philosophy	1	0.7
Library and Information Science --- Religion	1	0.7
Social Sciences --- Library and Information Science	2	1.4
Library and Information Science --- Technology (General)	1	0.7
Total	142	99.96

4.8 Licence-wise Distribution of DOAJ Journals in LIS

Here the above table 8 show License-Wise Distribution of DOAJ journals in LIS 18 (12.96%) of CC BY Which can be used to legally protect the status of a free work.It is not a license; it ia a tool to determine whether a work or license should be considered free.followed by CC BY-NC-ND 17 (26.98%) creative common attributions No Derivatives license.followed by SPARC Europe 15 (23.8%) promotes & supports OA.We advocate change in scholarly communications for the benefit of researchers libraries developed.followed by CC BY-NC-SA 8 (12.69%).the journalis being released under a CC BY-NC-SA license and is available for free in wiki format (also available for purchase here).Followed by CC BY-NC 4 (6.34%) the journal does indeed prevent many kinds of commercial re-use,hence the name “non-commercial”/ followed by CC BY-SA 1(1.58%) share-copy and redistribute the material in any medium or format and adapt remix transform and build upon the material for any purpose,even commercially.

Table 8 License-wise Distributions of Open Access Journals in LIS

License	No. of Journals	% of Publications
CC BY	18	12.6
CC BY-NC	4	2.8
CC BY-NC-ND	17	11.9
CC BY-NC-SA	8	5.6
CC BY-SA	1	0.7
SPARC EUROPE	15	10.5
Not-mention	79	55.6
Total	**142**	**99.7**

4.9 Key Words in Journal Title

From the above table 9,it is found that more key words in journal title is library and information 80 (56.33%),there were fewer keywords are related to library subject like bibliography, bibliometrics, informatics, webmetrics, scientometrics, communications, documentation, research, management and science & technology also.

Table 9 Key Words in Journal Title

Key Words in Journal Titles	No. of Journals	% of Publications
Bibliography	20	14.08
Bibliometrics, Informatics, Webometrics, Scientometrics	1	0.7
Communications	3	2.11
Documentation	4	2.81
Library And Information	80	56.33
Research	13	9.15
Science And Technology	14	9.85
Management	7	4.92
Total	**142**	**99.95**

5.CONCLUSION

The OA journals are now clearly and broadly being recognized as essential vehicle for scholarship in the digital world. This is evident based on the continuous growth of OA journals in different disciplines around the world. The OA journals in library and information science were mostly new journals started during late 1990s and published in 40 different countries, where USA tops the rank. It is surprising to note that India's contribution towards OA journals in Library and Information Science is 4.22% only. it clearly show in India LIS JOURNALS is published very less in print & very poor in OA journals in LIS.

At present, most of the OA journals in LIS are published from universities, libraries and library associations. So, it is now time for Indian universities to take initiatives in publishing LIS journals. At the same time researchers, lecturers, and practitioners within institutions need to convince the value and immense potential of OA journals. The continued development of OA journals depends a great deal on our continuing to overcome cultural, legal and financial barriers to their acceptance and use. Most of the public funding research institutions in India have started providing free access to their journals over the internet. It may be expected that in the next few years we will see sustainable growth of OA Journals as some leading publishers are also taking interest in OA journals publishing.

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Information seeking Behaviour of Students in Digital Environment A Survey of Arts and Science Colleges in Kovilpatti

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Abstract

The present era is called an "Information era" Information has become the most important element progress in Society Nowadays, information is a basic necessity of everyday life. For anything and everything information is required. Information can be obtained or retrieved from a variety of sources. Libraries serve as a centre for providing the right information to the right people at the times. In India, the need for reforms in education by harnessing information and communication technology is increasingly being accepted as essential by universities and colleges across India. Computers have played a vital role in our day to day life. Today in this modern world, from childhood to old age are using internet in everywhere, right from home to research centres, Internet is used. Internet has become a global source of information resources accessible at anytime by anyone from anywhere in this world. The ICT sector is consisting computer, internet, networking, database, Powerpoint. Management information system. Web designing e-journal, Digital Library etc. The paper presents the results of a survey of the information seeking behavior of students in Arts and Science Colleges in Kovilpatti. The purpose of the survey was to explore the use of information technology by the college students for seeking information and to know how they access e- resources. The study made an effort to determine the sources of accessing e- resources in particular. It was found that the students of the College use search engines as a major source to access e- resources for their information needs and for purpose of updating knowledge on their on their subjects of interest. In order to overcome the hindrances in accessing the e-resources, the study recommends awareness programmes for the students and to provide training on web searching and retrieval skills.

Keywords : *Digital Library, E- Resource, Information seeking behaviours,Internet, Search engine*

1. INTRODUCTION

Information plays a significant role in our professional and personal lives. People need information to work properly in their fields. Questions that provoked this study include :

i. What constitutes a need for information?
ii. What people think at that particular time?
iii. What actions people take? and
iv. What problems are faced while seeking information?

User studies are to be recognized as an important part of the information packages. Information providers like the library and information centres need to be aware of their users' information requirements as well as their information seeking and information retrieving methods in order that they might be able to provide better services. Knowledge and information are vital for career development and growth . In the modern society, the types of Information and the media which present them have become manifold and multifarious, offering a vast selection for the academic community in particular. The increase in information on the Web has affected information seeking behaviour. Information seeking behaviour involves personal reasons for seeking information, the kinds of information which are being sought, and the ways and sources with which needed information is being sought. Information seeking behaviour is the purposive seeking for information as a consequence of a need to satisfy some goal. In the course of seeking, the individual may interact with manual information systems (Such as a newspaper or a library) or with computer based system (Such as the web).
Academic libraries have along history, starting with the chained and closed –access libraries of earlier times to the present –day hybrid, digital, and virtual libraries that use the latest technology for the provision of information through various services. Today, these libraries are surrounded by networked data that is connected to vast ocean of Internet- based service to make desired

information source accessible to the academic community- students and the faculty alike. The present paper focuses, how the college students seek information in digital environment at Arts and science Colleges in Kovilpatti.

2. REVIEW OF LITERATURE

A number of studies in the recent past were carried out to find out the information seeking behaviour of user in different types of libraries all over the world. Some of the surveys in the context of students are reviewed here.

Fidzani (1998) surveyed 144 students to determine the information seeking behaviour and use of information resources by graduate student at the University of Botswana. The purpose of the study was to find out what their information requirements were and determine their awareness of library service available to them. The findings of the study indicated that the guidance in the use of library resource and services was necessary to help students to meet some of their information requirements.

Findings by Bavakutty and salih Muhamad (1999) revealed that students, research scholars, and teachers use the internet for the purpose of study, research, and teaching at Calicut University.

Majid and Tan(2002) investigated the information needs and information seeking behaviour of computer engineering undergraduate students at Nayang Technological University, Singapore. The purpose was to identify the types of information sources used by the students, their preferred information formats and the use of various electronic information sources. It was found that the use of databases and electronic journals was quite low.

Kakai(2004)observed that the information seeking behaviour of students involved active or purposeful information as a result of the need to complete course assignment, prepare for class discussions, seminars, workshops, conferences and for writing final year research papers.

Fatima and Ahmad (2008) investigated the information seeking behaviour of college students to find out the awareness and usage of library resources. The findings of the survey indicated the need to increase the usage of library resources and services.

Nicholas,(2009) carried out a study to provide the evidence on the actual information seeking behavior of students in a digital scholarly environment. The study showed that undergraduates and postgraduates were the most likely user of library links to access scholarly databases, suggesting an important “hot link” role for libraries.

Purnima Devi and Herojit Singh (2009) suggested that, maximum number of computers with internet facility should be installed in libraries in order to make aware of the importance of ICT and importance of library in education.

Thanuskodi (2011) suggested that some orientation training programmes should be organized by the college at regular intervals so that the maximum users can improve their excellence in the use of the internet for academic purposes.

3. OBJECTIVES

The main objectives of this study were,

i. To examine the information seeking behaviour.
ii. To know the purpose for which students are using internet.
iii. To ascertain the users preference search engine.
iv. To determine the frequency of internet usage
v. To examine the usefulness of internet based information resources.
vi. To know how much time is spent in using internet.
vii. To know the hindrances in seeking information from e- resources.

4. HYPOTHESIS

The present research is being carried out to verify the following hypothesis.

i. There is a significant difference among the respondents by their frequency of internet using with regard to the type of users.
ii. There is a significant difference among the respondents by the purpose of seeking information with regard to the types of users.
iii. There is a significant difference among the respondents by using e-resources with regard to the types of users.

5. METHODOLOGY

For the present study, a questionnaire was used for data collection .A random sampling technique was adapted to the students of arts and science colleges in Kovilpatti .the researcher has prepared well structured questionnaire for collecting the primary data from the users of various colleges. Questionnaires ere received from 140 students only out of 200 students after which were filled by them. This constitutes 70% of the response.

6. DATA ANALYSIS AND INTERPRETATION

The data collected from the respondents through questionnaire were analyzed using simple percentage technique and presented in the following table.

6.1 College-wise Distribution of Respondents

Table 1 College-wise Distribution of Respondents

Sl. No.	College Name	No. of Questionnaires Distributed	Respondents	%
1	GVN College	80	62	31.00
2	K.R. College of Arts and Science	60	36	18.00
3	SSDNM College	60	42	21.00
Total		**200**	**140**	**70.00**

Source : Primary Data

Table 1 Show that out of 200 questionnaires distributed 140 students (70%) have responded.

6.2 Graduate-wise Distribution of Respondents

From the Table -2 it is seen that majority of the students (67.86%) are under graduate students and 32.14% of them post Graduate students.

Table 2 Graduate-wise Distribution of Respondents

Sl. No.	Graduate	No. of Respondents	(%)
1	Under Graduate	95	67.86
2	Post Graduate	45	32.14
Total		**140**	**100.00**

Source : Primary Data

6.3 Gender-wise Distribution of Respondents

The Study of data in table-3 indicates the Gender distribution of respondents. It Could be noted that out of 140 respondents , 52 % are belong to the male student users and rest of them (48%) are female.

Table 3 Gender-wise Distribution of Respondents

Sl. No.	Gender	No. of Respondents	(%)
1	Male	73	52.14
2	Female	67	47.86
Total		**140**	**100.00**

Source : Primary Data

6.4 Knowledge of Information Technology

The above Table 4 indicates that 45% students indicate that, their status of Knowledge of information technology being Average while 31.43% mentioned as Good . Only 23.57% students had very Good knowledge of Information technology.

6.5 Frequency of Using Internet

From the Table 5 and Figure 1 this study indicates the ratio of PG student in using internet on a daily and alternative basis (76%) is more than UG students (44%).

6.6 Hours Spent for Using Internet

From the table 6 we can conclude that most of the user spent only between less than one hour and 1to2 hours.

6.7 Types of E-Resources Accessed

Table 7 Shows the types of e- resources accessed by the students to seek information for their needs. The CD-ROM was preferred by 33.57% students , followed by E Journals which was accessed by 30% Students. The E books and Bibliographic databases were the other e-resources accessed by 24.29 % students and 12.14% students, respectively.

Table 4 Knowledge of Information Technology

Sl. No.	Purpose	Under Graduate	(%)	Post Graduate	(%)	Total	(%)
1	Very Good	23	24.21	10	22.22	33	23.57
2	Good	28	29.47	16	35.56	44	31.43
3	Average	44	46.32	19	42.22	63	45.00
Total		**95**	**100.00**	**45**	**100.00**	**140**	**100.00**

Source : Primary Data

Table 5 Frequency of Using Internet

Sl. No.	Frequency	Under Graduate	(%)	Post Graduate	(%)	Total	(%)
1	Daily	21	22.11	21	46.67	42	30.00
2	Alternative Day	23	24.21	11	24.44	34	24.29
3	Once a week	28	29.47	6	13.33	34	24.29
4	Alternative Week	15	15.79	4	8.89	19	13.57
5	Once a Month	8	8.42	3	6.67	11	7.86
Total		**95**	**100.00**	**45**	**100.00**	**140**	**100.00**

Source : Primary Data

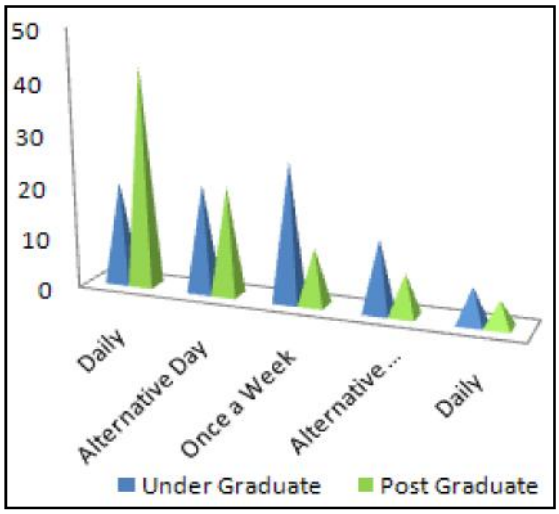

Fig.1 Frequency of Using Internet

6.8 Purpose of Using E-Resources

The purpose, for which the e- resources were used by the students, as shown in Table-8 indicated that majority of the students, ie 33.57% e-resources for preparing their academic assignments and for themselves updating on their subjects of interest. While 32.86% students used e- resources for the purpose of career development and growth, followed by 19.29% students who used e- resources for General information.

6.9 Frequently Used Search Engines

Table 9 shows that Google (42.11%) is most favourable search engine among the under graduates follwoed by yahoo(28%). Among the Postgraduate Google is most desirable search engine (43.57%) followed by yahoo(30%).

Table 6 Hours Spent for Using Internet

Sl. No.	Time Spent	Under Graduate	(%)	Post Graduate	(%)	Total	(%)
1	Less than 1 Hour	35	36.84	15	33.33	50	35.71
2	1-2 Hours	26	27.37	21	46.67	47	33.57
3	2-3 Hours	28	29.47	8	17.78	36	25.71
4	More than Hours	6	6.32	1	2.22	7	5.00
Total		**95**	**100.00**	**45**	**100.00**	**140**	**100.00**

Source : Primary Data

Table 7 Types of E-Resources Accessed

Sl. No.	E-Resources	Under Graduate	(%)	Post Graduate	(%)	Total	(%)
1	E- Journals	26	27.37	16	35.56	42	30.00
2	E-Book	22	23.16	12	26.67	34	24.29
3	CD-ROM Databases	34	35.79	13	28.89	47	33.57
4	Bibliographic Databases	13	13.68	4	8.89	17	12.14
Total		**95**	**100.00**	**45**	**100.00**	**140**	**100.00**

Source : Primary Data

Table 8 Purpose of Using E-Resources

Sl. No.	Purpose	Under Graduate	(%)	Post Graduate	(%)	Total	(%)
1	For Academic Assignment	34	35.79	13	28.89	47	33.57
2	Career Information	29	30.53	17	37.78	46	32.86
3	General Information	19	20.00	8	17.78	27	19.29
4	Entertainment	13	13.68	4	8.89	17	12.14
5	Research	0	0.00	3	6.67	3	2.14
Total		**95**	**100.00**	**45**	**100.00**	**140**	**100.00**

Source : Primary Data

Table 9 Frequently Used Search Engines

Sl. No.	Purpose	Under Graduate	(%)	Post Graduate	(%)	Total	(%)
1	Yahoo	28	29.47	14	31.11	42	30.00
2	Google	40	42.11	21	46.67	61	43.57
3	MSN	15	15.79	7	15.56	22	15.71
4	Alta Vista	7	7.37	1	2.22	8	5.71
5	Rediff	5	5.26	2	4.44	7	5.00
Total		**95**	**100.00**	**45**	**100.00**	**140**	**100.00**

Source : Primary Data

6.10 Problems in Accessing E-Resources

The students were asked to indicate the problems they encountered for accessing e- resources as shown in Table-10 At the majority of the students, 58% complained that limited access to computers and slow access speed was the major problem for unable to use the e-resources, while 19% students mentioned that due to the lack of IT knolwedge and 16% are agreed that they have lack of IT knowledge.

Table 10 Problems in Accessing E-Resources

Sl. No.	Problems	Under Graduate	(%)	Post Graduate	(%)	Total	(%)
1	Lack of IT Knowledge	21	22.11	6	13.33	27	19.29
2	Limited Access to Computers	26	27.37	15	33.33	41	29.29
3	Power Supply	17	17.89	5	11.11	22	15.71
4	Slow Access Speed	23	24.21	17	37.78	40	28.57
5	Poor Library Facilities	8	8.42	2	4.44	10	7.14
Total		**95**	**100.00**	**45**	**100.00**	**140**	**100.00**

Source : Primary Data

6.11 Areas of Training Required

Table 11 shows the areas of training as required by the students to access the e-resources. 54% of the majority of the students indicated that they required training for learning more about the Internet and search engines in order to access and make use of e-resources. Training in information retrieval skills got the attention of 30% students, while 16.43% students wanted to improve their OPAC searching. Overall, majority of the students indicated that they should be trained for accessing e-resources.

Table 11 Areas of Training Required

Sl. No.	Problem	Under Graduate	(%)	Post Graduate	(%)	Total	(%)
1	Learning More About Internet	52	54.74	23	51.11	75	53.57
2	Information Retrieval Skills	27	28.42	15	33.33	42	30.00
3	OPAC Searching	16	16.84	7	15.56	23	16.43
Total		**95**	**100.00**	**45**	**100.00**	**140**	**100.00**

Source : Primary Data

7. SUGGESTIONS

i. Libraries should take steps to make available or increase e-books, e-journals, and abstracts and provide an appropriate data base services in online and offline. Libraries should also subscribe to print versions of the back issues of professional journals to fill in those missing issues or those not earlier subscribed to.

ii. The library should provide an orientation program if necessary. Hence, it is suggested that advanced training for users at different levels should be started. Content of training programs should be: a) basic introduction to library services and facilities; b) using OPAC; c) methods and tools for searching information resources; d) using the internet; e) using online and CD-ROM databases; f) using electronic journals; g) introducing reference books; h) introducing audio/video materials; and i) introducing appropriate indexes and abstracts.

iii. Librarians should take the initiatives to prepare a list of subject web sites that are useful to the users.

iv. Computer print-out and CD writing services should be provided with nominal charges at the college libraries.

8. CONCLUSION

The college students are loaded with assignments and learning on their own in the present day competitive academic environment. Information seeking and gathering could be a challenging task to these college students with limited resources and services available in a college library. The Internet has attracted the attention of the students as an easy source of accessing information and e-resources as is as is evident from the above study. Yet, only a sizeable number of students could frequently seek information from e-resources. Most of the students access e-resources for updating their knowledge on their respective subjects and for academic assignments. A majority of the students found that limited access to computers being the problem to use e-resources and indicated their willingness to get trained to learn more about using the Internet and e-resources. The college library should play a pivotal role in facilitating the students in the use of Internet and e-resources and other library and information services. The college library should organize the awareness programmes and seminars to educate the students on seeking information from e-resources and to maximize the use of library resources and services. As there will be growing dependence on the Internet by the students for their information needs, the college library should strive to have the facilities and resources required.

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A Study on Use Pattern of Electronic Information Resources by the Scholars of Social Sciences in Madurai Kamaraj University, Madurai

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Abstract

This paper discusses the use of electronic information resources by Social Science scholars of Madurai Kamaraj University. Thirty three percent of the scholars use Internet every day. Thirty two percent of scholars seek information for Academic Improvement. Eighty seven percent of the Scholars use E-mail for communication. More than half of the respondents use Google for searching the information on Internet. Slow access speed is the prime problem felt by 29.33 percent of the Internet users. Hence more than half of the respondents visit the University Library every day.

Key words: *Electronic Information Seeking, Internet use, Internet users' survey*

1. INTRODUCTION

In the age of science, the computers can make the libraries and society paperless in future. The world famous futurist, Alvin Tofler predicts the 21st century "Space age", "Computer age", "Information age" and "Electronic era". The developing countries have reached a stage where the communication technology threatens the very existence of traditional libraries and it is true with the fact that libraries are being digitalized and traditional libraries are slowly waning and give place to emergence of a new type of library known as digital library in other words "Virtual library". A developing country like India with sparse resources needs to educate millions of its library users in conceptualizing their information needs and matching them with resources of the library by comprehending the methodology of the library. It is generally felt that any invention which does not reach the last man would die a natural death. But in the case of information technology the impact of computer and telecommunication technologies have already become one with the people. Most of the libraries of educational and research institutions are now connected to the Internet. There are systems that connect user to all sites or digital libraries having information on the area of interest. The internet facilities speed up document retrieval services from libraries around the world. Information in any form located anywhere in the world can be accessed by any user. With the emergence of digital libraries and E-journals, internet has become as inseparable part of the library.

2. OBJECTIVES OF THE STUDY

The main objectives of the study are:

i. To analyze the use of electronic information access pattern among the scholars of Social Sciences in Madurai Kamaraj University.
ii. To find out the satisfaction on the availability of Internet facilities.
iii. To study the frequency of use of Internet by the scholars
iv. To identity by the Purpose of utilization of the Electronic information resources by the Scholars.
v. To study the perception of the scholars regarding use of electronic resources.

3. REVIEW OF LITERATURE

Asemi and Riyahiniya conducted a survey on awareness and use of digital resources in the libraries of Isfahan University of Medical Sciences, Iran. Results of the study are that 70% students are aware of digital resources available in the university databases; 87.2% of students feel that the available digital resources meet their information needs. Authors conclude that users are facing some problems like low speed connectivity and shortage of inadequate hardware facilities.

Bidyut and Bajpal conducted a study about the Impact and use of Electronic resources by faculty members in VBS Purvanchal Universiy Library. The study concluded that all faculty members are familiar

about e-resources as well as that of searching for literature through Internet. The main purpose of the use of e-resources of a large number of faculty members is publication and research. Most of the faculty members are facing the problem of slow access speed at the time of accessing e-resources. Majority of the faculty members access e-journals, e-books, e-databases and all of them access Internet. All faculty members use partially and are least satisfied with e-resources section. Most of the faculty members strongly agreed to subscribe relevant e-resources, some of them agreed to subscribe more e-resources whereas some demand more opening time and printing facility of downloaded matters. In a user study, Kumbar et al analysed the use of electronic resources by 70 research scholars in central food and technological research institute (CFTRI), Mysore. The study showed many aspects on the use of electronic resources. It revealed that majority of them use FSTA (Food Science Technology Abstracts) database and the users felt that their research works have been improved upon by the use of electronic resources.

Parameshwar and Patil conducted a survey on use of electronic resources in university libraries of Karnataka. Gulbarka University was taken for case study. In this study 73.27% of respondents search for information by electronic journal, 9.79% of respondents do not know how to use UGC-INFONET Consortium and 37.95% of respondents know the UGC-INFONET Consortium by Library staff members. In this study 62.05% of the respondents revealed that bibliographical database is essential. In this study 59.19% respondent needed training or orientation programme on how to search for information under UGC-INFONET.

4. METHODOLOGY

For collecting primary data, questionnaires were issued to Scholars of Social Sciences directly in order to elicit the required information from the Scholars. Stratified sampling method was adopted for collecting primary data. The size of the sample chosen is Seventy five. Secondary data are collected from various books, journals, theses and records of Madurai Kamaraj University.

5. PROFILE OF MADURAI KAMARAJ UNIVERSITY

Madurai Kamaraj University was established in 1966 and currently it has 20 Schools comprising 77 Departments. The University has 87 affiliated Colleges (19 Autonomous) including other approved institutions (15) 5 evening colleges and 7 constituent colleges. Extension activities are carried out through Department of Youth Welfare, NSS, SC/ST cell, Equal opportunity cell and Adult Education programmes.

6. ANALYSIS AND INTERPRETATION OF DATA

6.1 Gender-wise Distribution of Respondents

Table 1 discusses the Gender-wise distribution of respondents. Among the overall respondents, 42 respondents (56%) are male and 33 respondents (44%) are female. Therefore majority of the male respondents access the electronic information sources in Madurai Kamaraj University than female respondents.

Table 1 Gender-wise Distribution of Respondents

Sl. No.	Gender	No. of Respondents	%
1	Male	42	56
2	Female	33	44
Total		**75**	**100**

Source: Primary data

6.2 Residing Sector-wise Distribution of Respondents

Table 2 indicates that 49 respondents (65.33%) belong to rural areas. This is followed by 26 respondents (34.67%) who belong to urban. That is, most of the respondents belong to rural who use electronic sources in Madurai Kamaraj University.

Table 2 Residing Sector-wise Distribution of Respondents

Sl. No.	Residing Sector	No. of Respondents	%
1.	Rural	49	65.33
2.	Urban	26	34.67
Total		**75**	**100**

Source: Primary data

6.3 Frequency of Use of Internet

Data presented in able 3 describes that 25 respondents (33.33%) use the Internet every day. This is followed by 16 respondents (21.33%) who use the Internet two to three times a day, whereas 12 respondents (16) use the Internet once in a week. Seven respondents (9.33%) use the Internet two to three times

a month, whereas 9 respondents (12%) use the Internet once in a month. Six respondents (8%) use the Internet occasionally. Therefore one third of the respondents use the internet every day. Hence the librarian inculcates the importance of the internet to the respondents to use the Internet every day.

Table 3 Frequency of Use of Internet

Sl. No.	Frequency	No. of Respondents	%
1	Everyday	25	33.33
2	Two to Three Times a Week	16	21.33
3	Once in a Week	12	16
4	Two to Three Times a Month	7	9.33
5	Once in a Month	9	12
6	Occasionally	6	8
Total		**75**	**100**

Source: Primary data

6.4 Purpose of Seeking Electronic Information Resources

Table 4 elicits the purpose of seeking Information among the scholars. Sixteen percent of the respondents seek information for Developing Knowledge and 32 percent of respondents seek information for Academic Improvement. Twenty eight percent of the respondents use the Internet for employment information, 9.33 per cent for Project work and 14.67 percent for entertainment information. Hence nearly one third of the scholars seek the information for Academic improvement. Hence it is proof that most of the respondents use the Internet for useful way.

Table 4 Purpose of Seeking Electronic Information Resources

Sl. No.	Purposes	No. of Respondents	%
1.	Developing Knowledge	12	16
2.	Academic Improvement	24	32
3.	Employment Information	21	28
4.	Project Work	7	9.33
5.	Entertainment Information	11	14.67
Total		**75**	**100**

Source: Primary data

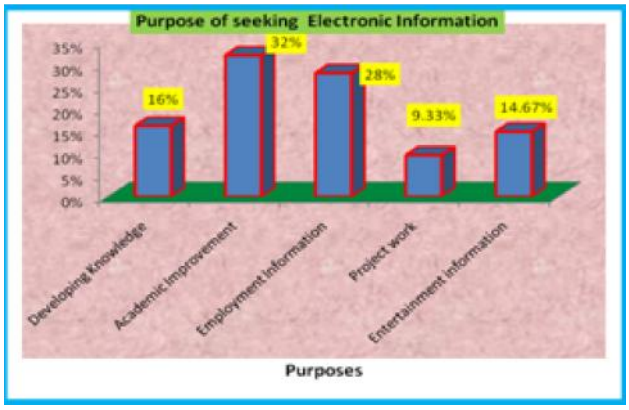

Fig.1 Purpose of seeking Electronic Information

6.5 Use of Email

Table 5 describes that 86.67% of the respondents use E-mail for communication. It is easy to send the communication to any part of the world in the shortest span of time. Ten respondents (13.33%) do not use Email. Therefore Majority of the respondents use E-mail for communication. It also suggests that the authority of the university should encourage all respondents to use the E-mail for their academic purpose.

Table 5 Use of Email

Sl. No.	Option	No. of Respondents	%
1	Yes	65	86.67
2	No	10	13.33
	Total	75	100

Source: Primary data

6.6 Use of Search Engine

Table 6 shows the use of search engine. Forty three respondents (57.33%) use Google Search engine and 31 respondents (41.33%) use Yahoo. Eight respondents (10.67%) use MSN and 2.67 percent use Altavista. This is followed by, 4 percent of the respondents use Hotbot whereas 5.33 percent of the respondents use Khoj. Besides all cited above, there are some other search engines also (2.67%). Hence most of the scholars use the Google for searching the information on Internet.

Table 6 Use of Search Engine

Sl. No.	Search Engine	No. of Respondents	%
1	Google	43	57.33
2	Yahoo	31	41.33
3	MSN	8	10.67
4	Altavista	2	2.67
5	Hotbot	3	4
6	Khoj	4	5.33
7	Others	2	2.67
Total N=75			

Source: Primary data

6.7 Devices Prefer to Store the Information from Internet

Table 7 discusses that 20 per cent of the respondents use CD-ROM, 10.67% of the respondents use floppy, 54.67% of the respondents use pen drive and 12% of the respondents use hard disc. Besides cited above all, there are some other devices also. Hence more than half of the respondents use the Pen drive for storing information. Second rank goes to CD-ROM.

Table 7 Devices Prefer to Store the Information from Internet

Sl. No.	Devices	No. of Respondents	%
1	CD-ROM	15	20
2	Floppy	8	10.67
3	Pen drive	41	54.67
4	Hard Disc	9	12
5	Others	2	2.66
Total		**75**	**100**

Source: Primary data

6.8 Problem Facing while Using Internet

Table 8 shows that slow access speed is the prime problem felt by 29.33 percent of the Internet users. Overload of information on the Internet (26.67%) goes to second rank, problem of privacy goes to third rank (16%), Difficulty in finding relevant information on the Internet (14.67%) goes to fourth rank and takes too long to view download pages (10.67%) goes to rank fifth. Besides all the problems cited above, there are some other problems also (2.66%). Hence the authority of university should increase the speed of the Internet.

Table 8 Problem Facing while Using Internet

Sl. No.	Problems	No. of Respondents	%
1	Slow Access Speed	22	29.33
2	Difficulty in Finding Relevant Information On The Internet	11	14.67
3	Overload of Information On the Internet	20	26.67
4	Takes Too Long to View Download Pages	8	10.67
5	Privacy Problem	12	16
6	Others	2	2.66
Total		**75**	**100**

Source: Primary data

6.9 Ways of Browsing the Required Information from the Internet

Table 9 Express the various ways of browsing the required information from the Internet. Among the 75 respondents, 32 percent of the respondents are directly entered into the web sites, 41.33 percent use Search engine and 21.33 percent use subscription databases. Therefore majority of the respondents use search engine for browsing the required information from the Internet.

Table 9 Ways of Browsing the Required Information from the Internet

Sl. No.	Ways of Browsing from Internet	No. of Respondents	%
1	From the Web Address Directly	24	32
2	Use Search Engine	31	41.33
3	Use Subscription Databases	16	21.33
4	Any Other	4	5.33
Total		**75**	**100**

6.10 Methods of Learning Internet Skills

Table 10 shows the methods of learning Internet skills. In this study, 14.67% of the respondents learn internet from their friends, 52% learn from Educational institution, 16% learn through Trial and Error method and 17.33% learn through External courses. Hence most of the scholars learn Internet through their Educational Institutions.

Table 10 Methods of Learning Internet Skills

Sl.No.	Methods	No. of Respondents	%
1	Guidance from friends	11	14.67
2	From Educational Institution	39	52
3	Trial and Error method	12	16
4	External courses	13	17.33
Total		**75**	**100**

Source: Primary data

6.11 Chi-square Analysis of Satisfaction of Internet Facilities by Male and Female Scholars

Table 11 discusses the satisfaction of Internet facilities by male and female scholars. Among the 42 male respondents, 50% of them are very satisfied the internet facilities of the Madurai Kamaraj University, 23.81% are satisfied, 14.29% are less satisfied and 11.90% of the respondents are dissatisfied with the internet facilities. In this study, among the overall female respondents, 36.36% of the respondents are very satisfied the internet facilities of the Madurai Kamaraj University, 24.24% are satisfied, 21.21% are less satisfied and 18.18% of the respondents are dissatisfied with the internet facilities provided by the Madurai Kamaraj Universiy.

Table 11 Chi-square Analysis of Satisfaction of Internet Facilities by Male and Female Scholars

Gender / Satisfaction	Very Satisfied	Satisfied	Less Satisfied	Dissatisfied	Total (N)
Male	21(50%)	10(23.81%)	6(14.29%)	5(11.90%)	42
Female	12(36.36%)	8(24.24%)	7(21.21%)	6(18.18%)	33
Total	**33**	**18**	**13**	**11**	**75**

Source: Primary data

6.12 Testing of Hypothesis

6.12.1. Ho: Null Hypothesis

There is no association between the Gender and their level of satisfaction of Internet facilities.

6.12.2. H_1: Alternative Hypothesis

There is an association between the Gender and their level of satisfaction of Internet facilities.

6.13. Chi-Square Summary Result

The table value of χ^2 for 3 degrees of freedom at 5% level of significance is 7.815. The calculated value of is less than this table value and hence the Null hypothesis is accepted and hence Alternative hypothesis is rejected. It is concluded that there is no association between the Gender and their level of satisfaction of Internet facilities.

Chi-Square Calculated Value	Degrees of Freedom	Chi-Square Table Value @ 5%
1.79	3	7.815

6.14 Frequency of Visit to the University Library

Table 12 presents the frequency of visit to the University Library. In this study, 53.33% of respondents are daily visitors, 20 per cent of respondents visit once in a week, 9.33% of respondents visit once in a fortnight, 12% of the respondents visit once in a month and 5.33% of respondents visit occasionally. Hence more than half of the respondents visit the University Library every day.

Table 12 Frequency of Visit to the University Library

Sl. No.	Frequency	No. of Respondents	%
1	Every day	40	53.33
2	Once in a Week	15	20
3	Once in a Fortnight	7	9.33
4	Once in a Month	9	12
5	Occasionally	4	5.33
Total		**75**	**100**

Source: Primary data

7. FINDINGS AND CONCLUSION

Following findings are derived from Scholars of School of Social Sciences.

i. Majority of the male respondents (56%) use the Electronic information resources than female.
ii. 65.33% of the respondents belong to rural who use the Electronic information.
iii. One third of the respondents use the Electronic information every day.
iv. More than one fourth of respondents seek electronic information resources for Academic Improvement.
v. 86.67% of the respondents use E-mail for their communication.
vi. 44% of the respondents use Google Search engine.
vii. 54.67 Percent of the Respondents use pen drive for storing the information from the Internet.
viii. Slow Access speed is the prime problem (29.33%) while using Internet.
ix. 41.33 Percent of the respondents use search engine for browsing the required information from the Internet.
x. 52% of the respondents have learnt Internet from their Educational Institution.
xi. There is no association between the Gender and their level of satisfaction of Internet facilities.
xii. Majority of the respondents are very satisfied with Internet facilities (59.33%), 24.67% are satisfied, 12 % are less satisfied and 4% are dissatisfied.
xiii. More than half of the respondents visit the University Library every day.

The issue of quality in higher education has become more paramount now and to achieve this and the Internet play a vital role. Though there are certain limitations, the study shows that,

i. Most of the Scholars of Social Sciences in Madurai Kamaraj University use the Electronic information resources for academic improvement.
ii. Majority of the scholars are satisfied with the Internet facilities provided by the University.
iii. Majority of the Scholars use E-mail for communication.
iv. Majority of the Scholars are satisfied with the quantum and quality of electronic information.

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E-Resources and Institutional Repository Facilities at Dhirajlal Gandhi College of Technology Salem: A Case Study

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Abstract

Providing an effective approach for facilitating the users (research scholars) is one of the most prominent research issues in the field of library and information science. Saving the time of users is one of the quite challenging issues for librarian. Hence it is important to develop a simplified access method of e-resource materials and Online Public Access Catalogue (OPAC) service in a library. This paper describes a case study about the e-resources facility designed in Library ofDhirajlal Gandhi College of Technology, Salem. It elaborates about theunique methodology used to present e-resource materials of digital library using intranet services.

Dhirajlal Gandhi College of Technology Library has collections of18PC's with Multimedia facilities, CD's, NPTEL video lectures previous year question papers and rare video materials for engineering and architectural education. At present repository haves 8 e-resources package with 2911 periodicalsand 105 titles of video lecture Classes each titles has 35 to 45 lecture classes. These facilities are available to users inside the campus. Hence bringing these facilities to user is a challenge one for librarian. This paper describes how to present the e-resource to users to access the e-resources as per there research requirement.

Keyword: *Digital library, Digitization, Dhirajlal Gandhi College of Technology Library, E-Resources*

1. INTRODUCTION

In this digitized era multitude of the students and professionals tend to access e-journals, e-books and video lecture. Simplifying the access methodology of digital library and e-resource materials helps to save the users' time. Back volumes of the journals or magazines are taken care by publisher. In case of professional college libraries, these e-resource materials are obtained as yearly subscription terms of business. Availability of information in the digital mode helps the user to access and search their relevant information in a very easy and fast manner.The main purpose of using digital format is to retrieve the needed information via easy channel. Borrower may not be supposed to procure entire journal to avail the needed article. The user can pay only for the article needed alone. It helps the user to save the money and time.

In order to save the time of users effectively, it is optimal to design the intranet facilities available in the college campus with the help of database. This database of e-resources helps the user to search the needed information in quickly in single window system.Digital library of Dhirajlal Gandhi College of Technology has been designed using intranet facility to share the e-resource materials throughout the college campus. The intranet website describes the method of accessing the e-resource like, CD's, NPTEL, E-Journals, and Question Papers etc.

2. METHODOLOGY

The methodology of the proposed work shows the design to present the available e-resource facilities in the library as per the users' requirement and attracts the users' attention. It helps the user to utilize the library facilities very interestingly.

We are using following six methods to present the e-resource via intranet.

i. IP based subscription of e-journals,
ii. Use of URL to access the e-resources,
iii. Procedure of How to Access e-resource,
iv. Easy access to NPTEL video lectures,
v. OPAC service through intranet,
vi. Enabling Flash drive facility in digital library.

2.1 IP Based Subscription of E-Journals

Subscription of e-resource is mandatory to all engineering library as per norms. So IP based subscription is very useful for users as well as publishers. It makes user to access the e-resource in a faster and easier way which saves their valuable time. Giving the IP address to publisher at the time of e-resource subscription will help the publisher to connect their e-resource database directly with organization quickly. IP based subscription helps the user to access the e-resource from anywhere inside the campus. When the user enters into the subscribed e-resources website, the journal environment automatically becomes ready to search the article and download it without any problem and delay. This method needs the Librarian to ensure whether there exists any changes in IP address every day. If it happens for the organization to change the IP address, it is essential for the Librarian to intimate the changed IP address to particular publisher.The advantage of IP based subscription is that it is the secure method to subscribe the e-resources. And also this method blocks interference of the third party.

2.2 Use of URL to Access the E-resources

Generally user may not be aware of types of e-resources subscribed in the parent library, various facilities available in library and the methods to access the resource materials. Hence it is the Librarians responsibility to build the gap between the users' awareness about the library environment. Hence, in Dhirajlal Gandhi College of Technology, Intranet website was designed exclusively for library as illustrated in figure1.This Intranet facility helps the users to access e-resources inside the college campus and to view the e-resource facilities throughout college network.

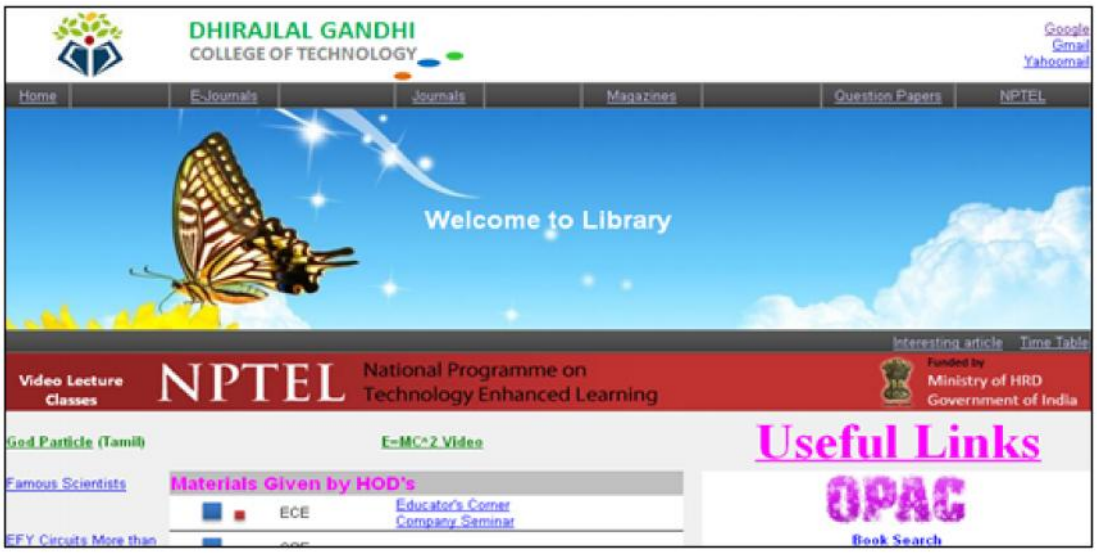


Fig.1 Screen shot of the intranet home page

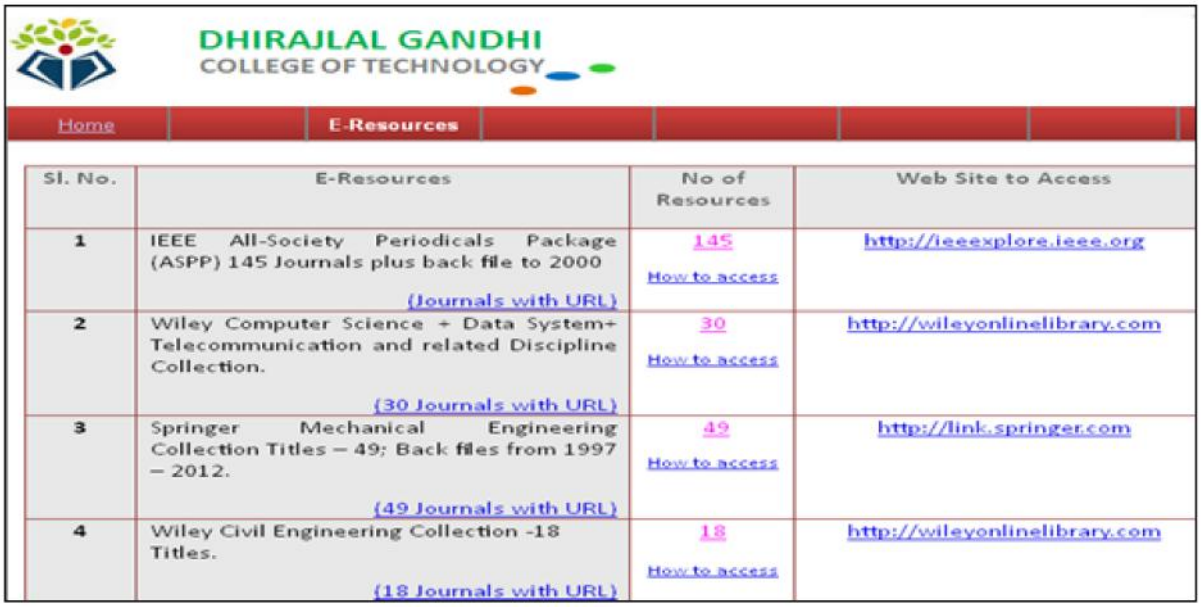
In this intranet website, the following details are given for users view.

i. Holdings of Books
ii. Print Periodicals subscribed \ Department Wise
iii. E-Resources Packages
iv. OPAC
v. Anna University Previous Year Question Papers
vi. EFY Circuits
vii. NPTEL
viii. Useful Links
ix. Materials Given by HOD's(Institutional Repository)
x. Motivational Videos
xi. Interesting Articles, etc.

Producing this kind of information through intranet attracts the user very much by saving their time and making them happy.

2.3 Procedure of How to Access E-Resource

Sometimes the user may not be aware of searching their required materials after entering into the library intranet page.Hence, here we attach the materials and procedures that explain how to access the e-resources with step by step approach. Hence, user can become self-reliance and easily access the e-resource without the need of any help. The availability of this approach in the proposed work is illustrated in figure 2. Figure 3 shows the list of periodicals with URL links.



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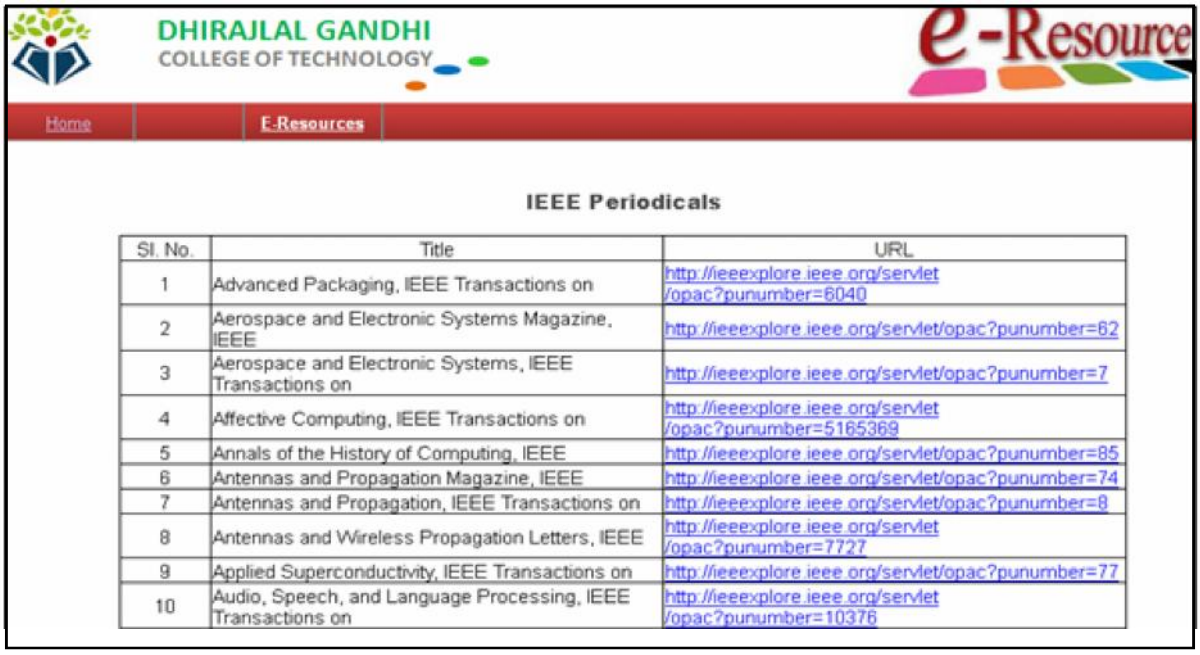
Home | E-Resources

Sl. No.	E-Resources	No of Resources	Web Site to Access
1	IEEE All-Society Periodicals Package (ASPP) 145 Journals plus back file to 2000 (Journals with URL)	145 How to access	http://ieeexplore.ieee.org
2	Wiley Computer Science + Data System+ Telecommunication and related Discipline Collection. (30 Journals with URL)	30 How to access	http://wileyonlinelibrary.com
3	Springer Mechanical Engineering Collection Titles – 49; Back files from 1997 – 2012. (49 Journals with URL)	49 How to access	http://link.springer.com
4	Wiley Civil Engineering Collection -18 Titles. (18 Journals with URL)	18 How to access	http://wileyonlinelibrary.com

Fig.2 List of e-resource with URL links



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e-Resource

Home | E-Resources

IEEE Periodicals

Sl. No.	Title	URL
1	Advanced Packaging, IEEE Transactions on	http://ieeexplore.ieee.org/servlet/opac?punumber=6040
2	Aerospace and Electronic Systems Magazine, IEEE	http://ieeexplore.ieee.org/servlet/opac?punumber=62
3	Aerospace and Electronic Systems, IEEE Transactions on	http://ieeexplore.ieee.org/servlet/opac?punumber=7
4	Affective Computing, IEEE Transactions on	http://ieeexplore.ieee.org/servlet/opac?punumber=5165369
5	Annals of the History of Computing, IEEE	http://ieeexplore.ieee.org/servlet/opac?punumber=85
6	Antennas and Propagation Magazine, IEEE	http://ieeexplore.ieee.org/servlet/opac?punumber=74
7	Antennas and Propagation, IEEE Transactions on	http://ieeexplore.ieee.org/servlet/opac?punumber=8
8	Antennas and Wireless Propagation Letters, IEEE	http://ieeexplore.ieee.org/servlet/opac?punumber=7727
9	Applied Superconductivity, IEEE Transactions on	http://ieeexplore.ieee.org/servlet/opac?punumber=77
10	Audio, Speech, and Language Processing, IEEE Transactions on	http://ieeexplore.ieee.org/servlet/opac?punumber=10376

Fig.3 List of periodicals with URL link

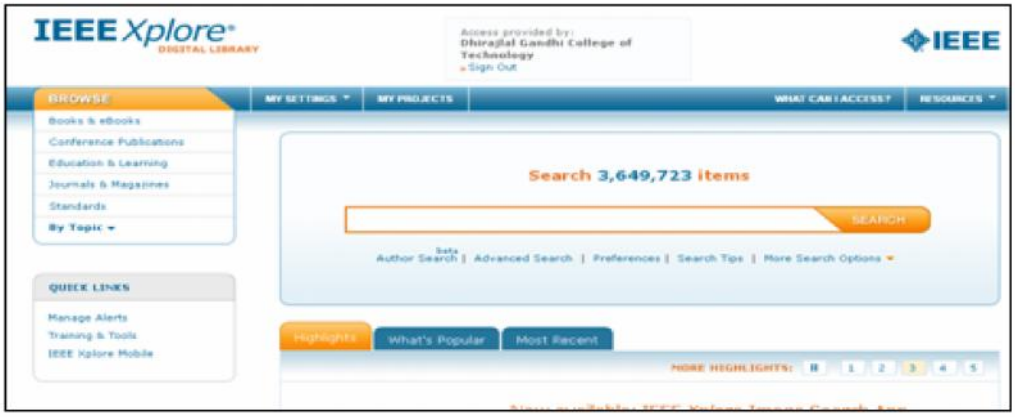

Fig. 4 IP based subscription of e-resource

When the user clicks upon the URL of the corresponding e-resource, it automatically logs in into the e-resource website without asking username password because of the use of IP based subscription methodology used in the digital library. This is illustrated in figure 4.

2.4 Easy Access to NPTEL Video Lectures

NPTEL video lectures are the E-learning provided through online web for Engineering, Science and humanities streams. The mission of NPTEL is to enhance the quality of engineering education in the country by providing free online courseware. These video lectures are arranged in a subject wise profession method, which helps the user to search for the required topic and learn easily. This is shown in figure 5.

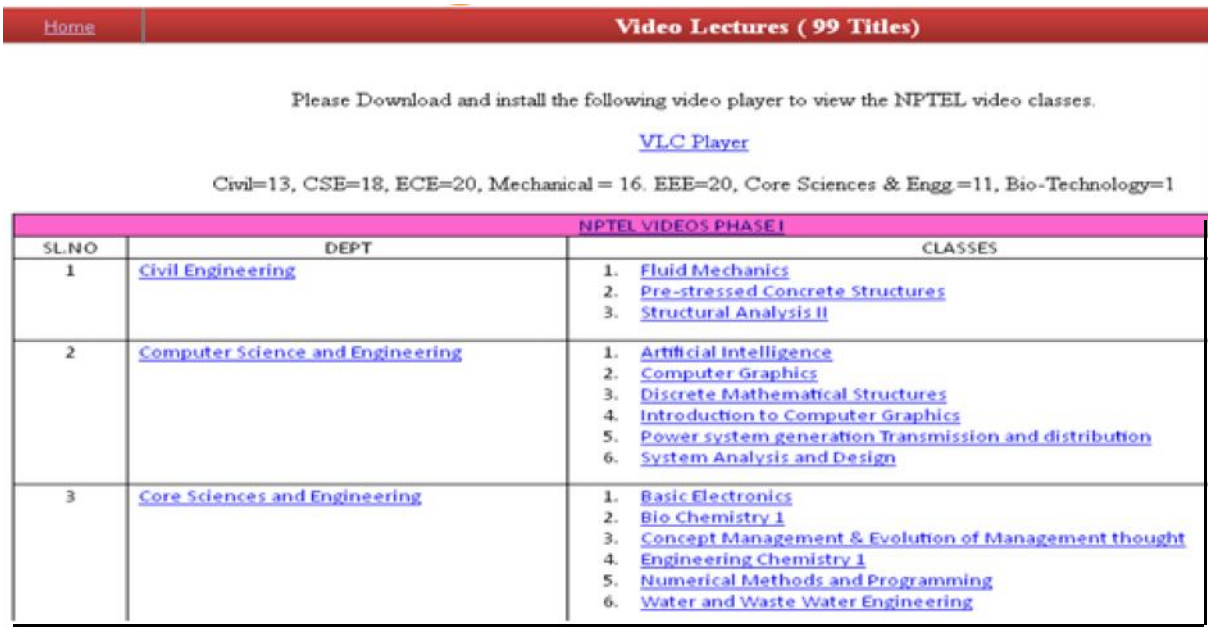

Fig.5 NPTEL Video lecture list-subject-wise

2.5 OPAC Service through Intranet

OPAC is abbreviated as Online Public Access Catalogue. It is required by the library user to get information about library collection which they require.Library user can search books, thesis and periodicals by keyword of title, author, publisher, ISBN/ ISSN No., Subject and Accession number etc. at anywhere of world through internet connection and get information about searched collection like status of books(available or issued) no. of copies and location (books stocked in which Institute library) and other bibliographical details.Library user are get information of his/her library account like issued items, due date of book etc. and registered user of library can send request for require book by Web OPAC. The intranet facility designed shows the OPAC service as illustrated in figure 6.

2.6 Enabling Flash Drive Facility in Digital Library

Most of the digital library not allow the students to make use of pen-drives in digital library. If the user is not allowed to copy the downloaded material in the pen-drive means, it disappoints them and makes them to avoid the use of digital library. Hence including this facilities with antivirus may help the user to make use of digital library in an enthusiastic manner.

3. CONCLUSION

The proposed work of intranet website facility included in the Digital library of Dhirajlal Gandhi College of Technology was made very successful by attracting many users for the library. It is obvious that the use of the above mentioned techniques in the library makes the library more efficient and saves the time of users.

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Design and Development of Subject Gateway for Physics

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Abstract

This paper explains the need and scope of creating a subject based gateway related to domain specific content physics. There are several resources coming up for the emerging fields both in open sources and in conventional methods. In this paper, the goal, principle and contents for constructing Physics related information on key disciplines are presented. The resource selection criteria and standards for web-based resource description are also described.

1. INTRODUCTION

Subject gateways are services that provide access to Internet resources that have been reviewed, selected and described by subject specialists. The exact selection criteria largely depend on the perceived usage base of the gateway, but typically include factors relating to the content and presentation of the resource and the integrity of the information and site provider . Subject gateways are almost always based on the manual creation of descriptive metadata and usually provide end users with both search and subject-browse facilities. The existence of rich metadata means that gateways can offer more sophisticated search options than other Web indexes. The application of subject classification schemes means that gateway services often provide hierarchical browse structures for browsing (Koch, 2000). As the Internet itself is constantly evolving, subject gateways also need robust collection development policies that include the regular checking and updating of resources included in the database.

2. OBJECTIVES OF THE STUDY

The study is concentrated with the following objectives

i. As an aid to browsing, it is especially useful for users that are none experienced or familiarized with the subject.
ii. To provide the information exhaustively on physics to satisfy the subject specific needs of users.
iii. To filter and organize the scholarly open access resources on Physics.
iv. To identify the web links of scholarly open access resources on Physics.
v. To boost the traditional library services with the Internet oriented services that can offer current resources to user community.

3. METHODOLOGY

Making of the gateway for physics Resources is an information consolidation product and its preparation demands certain skill and knowledge.

i. Identification of target users
ii. Planning of the gateway
iii. Study of subject as discussed with Experts.
iv. Identification of several information items available in Internet using various search engines.
v. Selection of information sources
vi. Categorization and arrangement of information sources
vii. Finally presentation of sources i.e. subject gateway designed with the help of Webnode.com.

3.1 Steps in developing a subject gateway

i. **Planning**: The purpose , goal(s), target audience, content needed and the overall style wanted are outlined. Hosting service free or commercial is also picked up.
ii. **What to Use:** What colors do we want to use? How to keep the look of our site consistent? Why content is so important? What graphics should we add? How will visitors navigate our site? How can we layout our pages?
iii. **COLORS:** One should learn about using color on the website, what the key to using color is, what are browser safe colors, and what colors to use and not to use.

iv. **Consistency:** One should learn why Website consistency is important and what roles our one's, colors, image styles, layout styles, navigation style, and footers play.

v. **Content:** One should learn why one's Website content is considered the most important aspect building of a Website.

vi. **Graphics:** With a careful selection of icons, bullets, and bars one can give the site a personality all its own. One should learn how to use graphics properly on Website.

vii. **Navigation:** One should learn how to create a simple and effective system to navigate the website.

viii. **Gateway Style:** Style is defined through layout, design and personalization of Web pages. One should learn about the basic styles used for Website design and which style is best suited according to the requirement.

4. DESIGNING AND DEVELOPMENT OF PHYSICS GATEWAY

The following screen shot shows that the Physics Subject Gateway Home Page. This page contains links to the e-books, e-journals, e-theses , databases, course material, funding agencies, web tools, events and job opportunity. http://bdu-phy.webnode.com/

4.1 Open Access E-Books and E-Journals

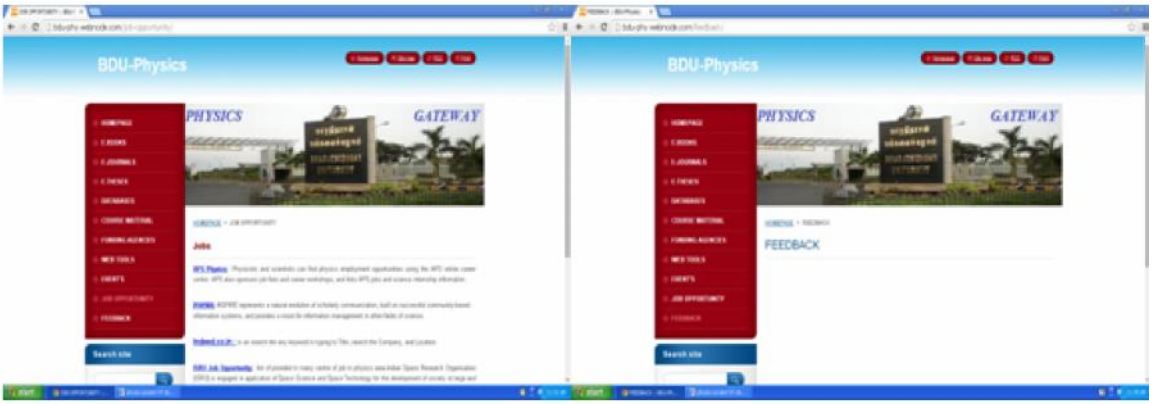
E-books and E-journals pages provides the links to the various full text accesses of scholarly journal and books sites and that has been categorized by various subject headings in Physics for the easy access of users.

4.2 Open Access E-Theses and Dissertation and Database

E-Theses page is provides the links to the various full text accesses of scholarly Electronic Theses and Dissertation sites and that has been categorized by various publishers in Physics, the easy access for users.

4.3 Jobs and Feedback

In this page is many available of job oriented website see their, users click the website go to in our resume uploaded and email id then any job vacancy in the job announced the sent the our e mail id.



4.4 Features of Subject Gateways

i. Each resource selected is evaluated against explicity defined quality selection criteria.
ii. Resources are classified using a range of Schemes,e.g.-DDC, MESH.
iii. Metadata are provided based on a particular standard e.g. – Dublin core
iv. Written resourse descriptions are provided for each resource, often by library subject specialists.
v. Currency of resources is checked by link checking software (e.g.ROADS), databases such as OMNI.

5. CONCLUSION

The development of subject gateways in the Religious physics can be fulfilling the original purpose of providing resource descriptions, a trend towards additional services like providing content in form of articles or primary sources as well as providing specialized communications platforms in form of discussion forum and mailing lists can be observed.

The designed gateway on Gateway linked with Bharathidasan University Library website in addition to direct access through web. Regular updates and Maintenance to be maintained by the University library

as it will be one of the by Product of the web enabled Information Services.

Future plans include the updating of the Physics portal on a regular basis so as to include new information to meet the demands of the users. After the success of this portal, a demand has already come from other departments of the university to provide this service in their subject area as well.

Subject gateways have a short period of existence. All of them are in continuous evolution and improvement. They are very useful services, so it is essential that we make them known to our users and we favour their use in the search of information.

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Use of Information and Communication Technology Among the Faculty Members of Leading Engineering Colleges in Namakkal District

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Abstract

This present study deals with Frequency of accessing ICT based resources for using ICT based resources, Places of highly accessing ICT based resources, Search engines used, Satisfaction level of ICT based resources andHindrances faced while accessing ICT based resources by the faculty members of leading engineering colleges inNamakkal district.

Key words: *E-mail,Faculty members, ICT, Internet, Search engines.*

1. INTRODUCTION

In recent years, Information and Communication Technology (ICT) has been regarded to have a pervasive influence on the economy as well as other parts of society. The ICT is widely considered as the most important revolution humankind has experienced since the industrial revolution and the development of movable type printing techniques. A country's development depends on the extent of use, speed of access, and skill application of ICT systems. The utilization of ICT has become an indicator of the level of the nation's wealth. Countries, which are not using the ICT, are likely to lose their global competitiveness. Research on ICT based resources in library users has attracted the attention of various scholars and researches (Chifwepa, 2003; Rahman et al. 2004; Obioha, 2005; Igben et al, 2007, Abdullah Almobarraz 2009). They have contributed to various research outputs and on analysis of these research findings. It enables the researchers to concentrate on a new area of research.

2. OBJECTIVES OF THE STUDY

In order to pursue this study, the following objectives have been framed, in according with the scope of this investigation.

i. To analyse the utility of ICT in terms of respondent's frequency of assessing ICT with respect to information needs and requirements of the faculty members of a leading engineering colleges in Namakkal district..
ii. To identify the respondent's highly accessed places for ICT based resources in the collection of information for their academic and research purposes.
iii. To know the extent of respondent's satisfaction with ICT available in their own institutional libraries for the academic and research purposes.
iv. To find out the impact of ICT for teaching and research among the faculty members of engineering colleges.
v. To identify the problem faced while accessing ICT based resources by the faculty members of engineering colleges in Salem and Namakkal Districts.

3. METHODOLOGY

This study attempts to examine the use of Information and Communication Technology towards the acquisition of knowledge among the faculty member with reference to leading engineering colleges in Namakal District.

In order to study the use of Information and Communication Technology by the faculty members of leading engineering colleges in Namakkal District, the researcher has chosen the leading engineering colleges, which are started in the 20th century in Namakkal district. The researcher has collected data from the faculty members of engineering colleges in Namakkal District. The data were collected from the faculty members of the concerned colleges by employing mailed questionnaire method. .

4. RESULTS AND DISCUSSION

The questionnaire was issued to the staff members of various departments of the colleges and the collected data's were statistically analyzed.

The distribution of faculty members according to their frequency of using the ICT based resources shown in table 1. It is evident from the table that 53.63% of the faculty members are using the ICT based resources every day; 22.03% once in a week; 13.65% once in a month; 6.82% less than once in a month and the remaining 4.10% of respondents once in a fortnight. Hence it can be concluded that most of faculty members are using the ICT based resources everyday. With regard to 84 Professors, a maximum of 65.47% of them using every day and 2.38% of them using ICT based resources once in fortnight. Among 154 Associate professors, a maximum of 51.29% of them using daily and a minimum of 4.54% of them using ICT based resources once in a fortnight. From the total of 315 Assistant professors, 47.61% of them using daily and 4.76% of them using ICT based resources once in a fortnight. Out of 810 Lecturers, 55.18% of them using ICT based resources every day and 3.95% of them using ICT based resources once in a fortnight.

Table 1 Distribution of Respondent's Frequency of Accessing ICT based Resources

User Category	No. of Respondents and their Percentage					Total
	Every Day	Once in a Week	Once in a Fortnight	Once in a Month	Less than Once in a Month	
Professor	55 (65.47)	18 (21.47)	2 (2.38)	6 (7.14)	3 (3.57)	84
Associate Professor	79 (51.29)	36 (23.37)	7 (4.54)	20 (12.98)	12 (7.79)	154
Assistant Professor	150 (47.61)	70 (22.22)	15 (4.76)	55 (17.46)	25 (7.93)	315
Lecturers	447 (55.18)	177(21.85)	32 (3.95)	101 (12.46)	53 (6.54)	810
Total	**731 (53.63)**	**301(22.03)**	**56 (4.10)**	**182 (13.65)**	**93 (6.82)**	**1363**

(Figures in Parentheses denote Percentage)

Table 2 shows the result of place from where the faculty member of engineering colleges had access to ICT based resources. There were five options viz. in the library, department, browsing centers, at home and other places. The result reveals that 476 (34.92%) faculty members accessed ICT based resources available at the department 347 (25.45%), faculty members accessed at the library 339 (24.87%), faculty members accessed at home 118 (8.65%), faculty members accessed at browsing centers and 83 (6.08%), faculty members accessed ICT based resources at other places.

Thus the data shows that most of the faculty members of all the leading colleges accessing the ICT based resources at their department. According to the user category 45.23 % of the Professors, 31.81 % of Associate professors, 37.46 % of Assistant professors and 33.45 % of Lecturers are accessing the ICT based resources at their department.

The data on the search engines used of the respondents are presented in the table 3. The data indicates that out of 1363respondents, 585 (42.92%) respondents have used Google;195 (14.30%) respondents have used AltaVista; 430 (31.54) respondents have used Yahoo; 117 (8.58%) respondents have used MSN and 36 (2.64 %) respondents have used other search engines. It is clearly observed from the above discussion that majority of the respondents have used Google.

Table 4 shows the designation wise distributions of respondent's satisfaction level of ICT based resources. It could be noted that out of 1363 respondents, 252 (18.48%) respondents are highly satisfied; 481 (35.28%) respondents are satisfied, 365 (26.77%) respondents are somewhat satisfied; 168 (11.95%) respondents are dissatisfied and 97 (7.11%) respondents are highly dissatisfied. Among the total number of 84 Professors, 46.42% of them are satisfied and 3.57% of them are highly dissatisfied. Out of 154 Associate professors, 35.71% of them satisfied and 5.84% of them are highly dissatisfied. With regard to 315 Assistant professors,

Table 2 Distribution of Respondent's Places of Highly Accessing ICT based Resources

User Category	No. of Respondents and their Percentage					Total
	In the Library	Department	Browsing Centre's	At Home	Other Places	
Professor	18 (21.42)	38 (45.23)	3 (3.57)	22 (26.19)	3 (3.57)	84
Associate Professor	37 (24.02)	49 (31.81)	15 (9.74)	45 (29.22)	8 (5.19)	154
Assistant Professor	73 (23.17)	118 (37.46)	37 (11.74)	58 (18.41)	29 (9.20)	315
Lecturers	219 (27.03)	271 (33.45)	63 (7.77)	214 (26.41)	43 (5.30)	810
Total	**347 (25.45)**	**476 (34.92)**	**118 (8.65)**	**339 (24.87)**	**83 (6.08)**	**1363**

Table 3 Distribution of Respondent's Search Engines Used

User Category	No. of Respondents and their Percentage					Total
	Google	AltaVista	Yahoo	MSN	Any other	
Professor	45 (53.57)	10 (11.90)	24 (28.57)	5 (5.95)	0 (0)	84
Associate Professor	73 (47.40)	29 (18.83)	35 (22.72)	10 (6.49)	7 (4.54)	154
Assistant Professor	112 (35.55)	40 (12.69)	119 (37.77)	35 (11.11)	9 (2.85)	315
Lecturers	355 (43.82)	116 (14.32)	252 (31.11)	67 (8.27)	20 (2.46)	810
Total	**585 (42.92)**	**195 (14.30)**	**430 (31.54)**	**117 (8.58)**	**36 (2.64)**	**1363**

29.20% of them satisfied and 9.52% of them are highly dissatisfied. Out of 810 Lecturers, 36.41% of them are satisfied and 6.79% of them are highly dissatisfied. Hence it can be concluded that most of the faculty members are satisfied.

Table 4 Distribution of Respondent's Satisfaction Level of ICT based Resources

User Category	No of Respondents and their Percentage					Total
	Highly Satisfied	Satisfied	Somewhat Satisfied	Dissatisfied	Highly Dissatisfied	
Professor	15 (17.85)	39 (46.42)	18 (21.42)	9 (10.71)	3 (3.57)	84
Associate Professor	30 (19.43)	55 (35.71)	43 (27.92)	17 (11.03)	9 (5.84)	154
Assistant Professor	61 (19.36)	92 (29.20)	90 (28.57)	42 (13.33)	30 (9.52)	315
Lecturers	146 (18.02)	295 (36.41)	214 (26.41)	100 (12.34)	55 (6.79)	810
Total	**252 (18.48)**	**481 (35.28)**	**365 (26.77)**	**168 (11.95)**	**97 (7.11)**	**1363**

Table 5 shows the distribution of respondent's hindrances faced while accessing ICT based resources. It shows that, 35.71% of the Professor respondents faced slow access speed; 37.66% of the Associate professor respondents also faced slow access speed; 18.73% of the Assistant professor respondents faced slow access speed and 27.16% of the Lecturer respondent's faced slow access speed.

Table 5 Distribution of Respondent's Hindrances Faced While Accessing ICT based Resource

User Category	No. of Respondents and their Percentage							Total
	Slow Access Speed	Finding Relevant Information	Accessing Full Text	Read from Computer	Excess Retrieved Information	Limited Access Terminal	Others	
Professor	30 (35.71)	14 (16.67)	13 (15.48)	11 (13.09)	9 (10.71)	4 (4.76)	3 (3.57)	84
Associate Professor	58 (37.66)	29 (18.83)	23 (14.93)	19 (12.34)	13 (8.44)	4 (2.59)	8 (5.19)	154
Assistant Professor	59 (18.73)	62 (19.68)	58 (18.41)	45 (14.29)	53 (16.83)	18 (5.71)	20 (6.35)	315
Lecturers	220 (27.16)	147 (18.15)	138 (17.04)	116 (14.32)	112 (13.83)	35 (4.32)	42 (5.19)	810
Total	**367 (26.92)**	**252 (18.49)**	**232 (17.02)**	**191 (14.01)**	**187 (13.72)**	**61 (4.47)**	**73 (5.36)**	**1363**

5. CONCLUSION

From this study it is revealed that majority of the respondent in the engineering colleges have been used ICT based resources every day (53.63%). Among the search engine, google is the popular and frequently used search engine (42.92%) for fulfilling their information needs. It is also determined that most of the faculty members faced problem of slow access speed (26.92%). At the same time the level of satisfaction of the faculty members with the ICT based resources available in the college library shows a positive result (35.28%). So it is proved that the engineering college libraries providing maximum level of services to its user.

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Open Source Software For Libraries

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Abstract

Open Source Software is a software that users have the ability to run, copy, distribute, study, change, share and improve for any purpose. We need not fear to know about Open Source Software (OSS). It is nothing but software we can modify, fix, add to, and distribute to others. There are many benefits from Open source software. We can create good software that will be helpful to library. The websites help librarians to use Open Source Software. It provides tips to them to implement and evaluate their ideas and suggestions.

Keywords: *Digital Library,Library Automation,Open Source Software, Subject Gateways*

1. INTRODUCTION

Open Source Software, a computer software can be had under a license. The license permits the users to go through to make changes and to make improvements of the software. It can be redistributed and modified. In a collaborative manner it can be developed in a public. It is useful for libraries to organize their books. This software free for anyone to have many large groups of programmers is using this. For acquiring and implementing systems, there are many OSS applications available for librarians. The two important elements of OSS are sharing and collaboration to describe OSS perfectly. On the whole, it is wonderful software for the world.

2. WHAT IS OSS?

OSS is the abbreviation of Open Source Software. It makes the way to source code. So users can easily see how a product is made and they have the right to modify the product according to their likes and dislikes. The two main components of OSS are modifying and redistributing the same. This software does not need the initial cost. Library professional should be aware of the advantages of Open Source Software. They have to involve themselves in their development. They should be well-versed with the selection, installation and maintains. If they do not do so, they will be reluctant to use it. Using this, librarian can deliver services. This software is a model for development and distribution. It is made freely available. It is different from Closed Source Software. There is freedom to modify this software.

3. OPEN SOURCE

It is possible to many a people to contribute to the development of Open Source. This has become a growing trend. It results in distribution of source code for system applications to build source code has become a challenge for software engineers. The source code is self-descriptive. The techniques will make it possible to both customers and developers to know the changes that have been made. It also helps them know the changes that manifest themselves within the software.

3.1 Advantages of OSS:

i. It increases the efficiency and effectiveness
ii. Stops the use of pirated proprietary software
iii. No licensing restriction
iv. Less dependency on software and hardware as compared to commercial software
v. Simplified license management
vi. Lower hardware costs
vii. Scaling/consolidation potential
viii. Untied Management

3.2 Disadvantages of OSS

i. Less user friendly
ii. Lack of functionality
iii. In due course of time, it will increase the support cost
iv. The codes are too complicated for novice users to understand
v. There is no particular official monitoring the works of a programmer improving the codes

3.3 Reason for Use Open Source Software

i. It promotes creative development
ii. Little to no upgrade costs
iii. Little to no viruses
iv. Those who cannot afford proprietary software can download open source programs for free
v. Can easily modify your software to suit patron's needs and your needs
vi. The price makes it easier to change your mind when the software does not live up to its expectations

4. LIMITATIONS

Open Source Software are discussed in the following area:

4.1. Library Automation Software
4.2. Digital Library Software
4.3. Subject Gateways

4.1 Library Automation Software

4.1.1 Koha

Koha is the first open source fully featured integrated library system used by a considerable numbers of libraries. Koha was developed in 1999 and the first library went live in January of 2000. Koha's code has been in production since then and is continuing to move towards higher levels of functionality and standards compliance, including embracing the international records and cataloguing standards MARC and Z39.50. The koha ILS includes catalogue, OPAC, circulation, member management, and acquisitions package.

4.1.2 PhpMyLibrary

PhpMyLibrary is a web-based library automation application meant for smaller libraries. The system consists of cataloguing, circulation and the OPAC module. The system also has an import export feature. It strictly follows the USMARC standard for adding materials. Online reservation system for library patron with their own login is possible. It supports the import from ISIS database with an ISIS2MARC program and Apache, PHP, MySQL, Python are needed for PhpMyLibrary.

4.1.3 OpenBiblio

Is an easy to use open source, automated library system written in PHP containing OPAC, circulation, cataloguing, and staff administration functionality. The purpose of this project is to provide a cost effective library automation solution for private collections, schools or public libraries.

4.1.4 NewGenLib

NewGenLib (New Generation Library) is the result of collaboration between a charitable trust called Kesaven Institute of Information and Knowledge Management (KIIKM), Hyderabad and Vens Solutions Pvt Ltd. Completely web based and adheres to international standards, supports web services and allows networking of unlimited number of libraries.

4.1.5 GNU Library Management System (GLIBMS)

GLIBMS is Library management software developed using PHP and PostgreSQL to automate the different activities carried out in the library. The project is currently inactive at sourceforge. It is renamed as Karuna and hosted at sarovar.org. It will support in Linux, UNIX platform. Apache, PHP, Perl, PostgreSQL are needed for GLIBMS.

4.1.6 Avanti: An Open Source Library Computing System

Avanti MicroLCS is an open source general purpose library computing system that is small, simple, and easy to install and use. Written in Java, it is platform independent and can run on any system that supports a Java runtime environment. Although it targets small libraries, it has a powerful and very flexible architecture that allows it to be adapted for use in libraries of any type. It had more special features like 100% pure java platform implementation, easy to install and use.

4.1.7 Karuna

Karuna is a library management system designed to automate a library. It is taken into consideration all the aspects of a library like search, issue/retrieval, acquisition and other aspects of a library. This is Apache, PHP, PostgreSQL dependency and Linux, UNIX supported platforms.

4.1.8 Evergreen

Evergreen ILS is another option while researching open source ILS options. Developed by Equinox Software, Evergreen is a robust, enterprise level ILS solution developed to be capable of supporting the

workload of large libraries in a fault-tolerant system. It too is standards compliant and uses the OPAC interface, and offers many features including flexible administration, work-flow customization, adaptable programming interfaces, and because its open source, cannot be locked away and can benefit from any community contributions.

4.1.9 Liblime

Liblime provides full vendor services (migration assistance, staff training, and software maintenance support and development) to libraries for open source software like koha. Their mission is to make open source software more accessible to libraries. Liblime, an open source library automation system, is the most trested open source software solution to the library communites. It provides full vendor services to libraries to make open source software more accessible to libraries is their mission.

4.2 Digital Library Software

4.2.1 Dspace

Dspace was designed and developed by Massachusetts Institute of Technology and Hewlett-Packard Company. Dpsace is a specialized type of digital asset management or content management system. Dspace software is a used world widely for institutional repository software that captures, stores, indexes, preserves and redistributes the intellectual output of a university's research faculty in digital formats. Many of the libraries in India use Dspace software. Dspace supports submission, management, and access of digital content.

4.2.2 Greenstone

Greenstone is produced by the New Zealand Digital Library project at the University of Waikato and developed and distributed in Cooperation with UNESCO and the Human Info NGO. Greenstone is a suite of software for building and distributing digital library collections. It provides a new way of organizing information and publishing it on the internet of on CD-ROM.

4.2.3 EPrints

Eprints is an open source software package for building open access repositories that are compliant with the Open Archives Initiative Protocol for Metadata Harvesting. It shares many of the features commonly seen in Document Management systems, but is primarily used for institutional repositories and scientific journals. EPrints has been developed at the University of Southampton School of Electronics and computer Science and released under a GPL license.

4.2.4 Fedora

Fedora open source software gives organizations a flexible service-oriented architecture for managing and delivering their digital content. At its core is a powerful digital object model that supports multiple views of each digital object and the relationships among digital objects. Digital objects can encapsulate locally managed content or make reference to remote content. Dynamic views are possible by associating web services with objects. Digital objects exist within a repository architecture that supports a variety of management functions. All functions of Fedora, both at the object and repository level, are exposed as web services. These functions can be protected with fine-grained access control policies. This unique combination of features makes Fedora an attractive solution in a variety of domains. Some examples of applications that are built upon Fedora include library collections management, multimedia authoring systems, archival repositories, institutional repositories, and digital libraries for education.

4.2.5 iVia

iVia is an open source internet subject portal or virtual library system. As a hybrid expert and machine built collection creation and management system, it supports a primary, expert-created, first-tier collection that is augmented by a large, second-tier collection of significant internet resources that are automatically gathered and described. It has special features like search/browse interface options that provide users with great flexibility in finding resources and which support all levels of user search skills and support for the following standards: OAI Protocol for Metadata Harvesting (OAI-PMH), Dublin Core, MARC (Machine-Readable Cataloging), Library of Congress Subject Headings (LCSH), and Library of Congress Classifications (LCC).

4.2.6 DjVuLibre

DjVu (pronounced "deja vu") is a compression technique, a file format, and a delivery platform that is specifically designed to enable the creation of digital libraries of printed material, either scanned from paper

or digitally produced. For scanned document, DjVu file sizes are typically 3 to 10 times smaller than TIFF or PDF in black and white, and 5 to 10 times smaller than JPEG in color. DjVu documents are displayed within web browsers through a very lightweight plug-in (available for all major platforms). Server-side full-text search can easily be provided using free indexing tools and a few Perl scripts.

4.3. Subject Gateways

Subject gateways, as the name suggests typically focus on a particular subject area. These are online services and sites that provide that catalogues the internet based resources available in a specific field of study. The libraries have an important role in the building of subject gateway in the area it specializes. Building such kind of services demanded high level of technical adeptness in the past. But with availability of good quality public domain OSS tools has removed that fear. Most of these tools comply with well-accepted metadata standards like Dublin Core, MARC, etc.

4.3.1 Roads

ROADS (Resource Organization and Discovery in Subject-based Services) are a set of software tools to enable the set up and maintenance of web based subject gateways. ROADS is a software tool-kit allowing gateway managers to pick and choose what parts of the software they require whilst allowing the integration of other software according to requirement. ROADS include advanced features for linking distributed cooperative databases together using the IETF's WHOIS++ search and retrieval protocol, and their Common Indexing Protocol (CIP).

4.3.2 iVia

iVia is an open source Internet subject portal or virtual library system. As a hybrid expert and machine built collection creation and management system, it supports a primary, expert-created, first-tier collection that is augmented by a large, second-tier collection of significant Internet resources that are automatically gathered and described. It has some special features like core system that is fast, robust, reliable and scalable to millions of records and users, an array of web crawlers capable of fully- to-semi-automating the identification of significant internet resources, Classifiers that enable semi-automated metadata content creation providing expert/machine interaction throughout the record building process, Search/browse interface options that provide users with great flexibility in finding resources and which support all levels of user search skills, support for single or multiple subject virtual library projects which can share data and efforts on any of several levels of cooperation and Support for the following standards: OAI Protocol for Metadata Harvesting (OAI-PMH), Dublin Core, MARC (Machine-Readable Cataloging), Library of Congress Subject Headings (LCSH), and Library of Congress Classifications (LCC).

4.3.3. IMesh Toolkit

The IMesh Toolkit is a coherent set of tools and standards being developed for use by subject gateway software developers and technically savvy subject gateway implementers. These tools and standards will make use of established open protocols and interfaces wherever possible to insure interoperability. The toolkit will include reference implementations for all standards. It has many components such as metadata exchange tools, RDF query tools, OAI normalization tools, Reading Lists, etc.

5. CONCLUSION

Open Source Software is essential if libraries are to develop software and systems that meet their patrons' needs. With OSS the IT infrastructure that is essential to library operations and services can be built according to open standards and as such potentially inter operable with other essential software and systems, ubiquitously available to libraries, capable of being tailored to suit the needs and circumstances of individual libraries. Documented errors can more effectively be identified and corrected. It ensures that library systems and online services will be more functional for libraries and their patrons and as such be good for library patrons.

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Mapping of Medical Physics in Global Level: A Scientometric Study

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Abstract

This study to investigate about the medical physics research publication output to observe the performance of medical physics in global level. Data has been drawn from the web of science database 1764 records were downloaded from the database during 1999- 2013(13 years) of medical physics research area. It analysis the exponential growth rate, most productive authors journals and citations were also analyzed.

Keywords: *Citations author productivity, Medical Physics, Scientometrics*

1. INTRODUCTION

In medical physics is a vision the idea of having data on the web defined and linked in a way that it can be used. Medical physics is the use of physics principles in the practice of medicine. It is most often used to describe physics applications related to the use of radiation in medicine or example, the physics of diagnostic radiology, radiation oncology, and nuclear medicine. More broadly defined, medical physics may include the physics of other electromagnetic waveforms used in medical procedures such as electrocardiography (the study of electrical impulses in the heart) and laser surgery. Medical Physics uses physical tools, including optical and ionizing radiation, ultrasound, lasers, thermal and magnetic technologies, in the diagnosis and treatment of disease. The high technology equipment used in diagnostic and therapeutic applications is often designed and maintained by medical physicists. We have taken this study to analyze the research performance of medical physics, as reflected in the publication output in web of science database during 1999 – 2013.

2. OBJECTIVES

This study is to analyze the research output in the field of medical physics during the period 1999-2013.The analyses included year wise growth, exponential growth rate, author wise contribution, share of top scholarly journals and major collaborative partner countries. It also analyses the characteristics of most productive institutions, authors and Citations.

3. METHODOLOGY

Data was collected from the Web of Science Database (WoS). The WoS is the search platform provided by Thomson Reuters (the former Thomson Scientific emerged from the Institute for Scientific Information (ISI) in Philadelphia) SCI database is one of the very comprehensive databases covering all aspects of science. The study period 1999-2013 is selected. The search string "Medical Physics" in the basic research field of for the years 1999-2013 to download the records on the subjects "Medical physics". A total of 1764 records published in global level were downloaded and analyzed by using the web of Science website application as per the objectives of the study.

4. ANALYSIS AND DISCUSSION

4.1 Year-wise Global Level Output of the Medical Physics

Table 1 reveals the year wise output of the Medical physics research there is a linear growth in the year wise output and it reached 1764 records in 2013 from only 67 records in the year 1999 which is an indication of increasing importance of Medical Physics. In case of global level stands ahead in TLCS as well as TGCS with 64 and 5836 citations respectively in 2003. In research output of 2006 121 records increased citations are 42 and 2659 and continuing the year wise Increasing the 210 records in 2012 total local citations and total global citation are 16 and 164 citaions respectively.

4.2 Exponential Growth Rates of Medical Physics Research Output

Table 2 reveals that the exponential growth rate of publications in Medical Physics output at global level. An Exponential growth in number of publications was observed and during from 1999- 2013, average growth at comprehensive level is 0.98%. The highest growth rate at comprehensive level of 210 records of 1.29 % during the year 2012.

Table 1 Yearly Global Level Output in Medical Physics

Sl.No.	Yearly Output	Records	Percentage	TLCS	TGCS
1	1999	67	3.8	25	1722
2	2000	78	4.4	30	1706
3	2001	75	4.3	31	1811
4	2002	95	5.4	39	1269
4	2003	**89**	5	64	**5836**
6	2004	110	6.2	48	1454
7	2005	110	6.2	40	1176
8	2006	121	6.9	42	2659
9	2007	127	7.2	38	1275
10	2008	158	9	30	1348
11	2009	135	7.7	22	978
12	2010	148	8.4	27	905
13	2011	162	9.2	11	395
14	2012	210	11.9	16	164
15	2013	79	4.5	0	13

The total exponential growth rate value is 14.65% at global level. With this data we can say observe the linear growth at global level except the year 2013 everywhere contribution is less than 2009.

Table 2 Exponential Growth Rates of Medical Physics Research Output

Sl. No.	Publication Year	Records	Percentage/ Year
1	1999	67	-
2	2000	78	1.16
3	2001	75	0.96
4	2002	95	1.27
5	2003	89	0.94
6	2004	110	1.24
7	2005	110	1
8	2006	121	1.1
9	2007	127	1.05
10	2008	158	1.24
11	2009	135	0.85
12	2010	148	1.09
13	2011	162	1.09
14	2012	210	1.29
15	2013	79	0.37
Total		**1764**	**14.65 (0.98%)**

4.3 Top 10 Authors Productivity of Medical Physics Research Output

Table 3 divulge the contribution of top most productive authors in Medical Physics Research articles. Hendee WR top the list with the contribution of 25 records in global level and LONGO R and CASTELLI E contribution of 14 , 13 records in the top most productive contribution in global level of 177 each documents. Remaining authors in the list have contributed for with more or less difference but with greater difference in global citations.

4.4 Collaboration Pattern of Authorship in Medical Physics Research Output

Table 4 reflects the collaboration pattern of authorship in Medical Physics research. Out of 1764 records 431 are contributed by single author which are 24.43 percentage of total output of top percentage wise contribution. 278 records are contributed by double authors which are 15.75 percentage of total output. Remaining 60 percentage contribution came from three and four authors. Analysis of this collaborative pattern in though quite good collaboration but as compare to other areas of research it demands still more collaboration. In this medical physics research output 10 above authors is less than 98 articles published.

Table 3 Top 10 Authors Productivity of Medical Physics Research Output

Sl.No	Yearly Output	Records	Percentage	TLCS	TGCS
1	Hendee WR	25	1.4	9	32
2	KITAGAWA A	18	1	15	71
3	[ANONYMOUS]	17	1	0	0
4	MURAMATSU M	16	0.9	14	66
4	DREOSSI	14	0.8	32	161
6	LONGO R	14	0.8	41	177
7	ARFELLI F	13	0.7	39	172
8	CASTELLI E	13	0.7	41	177
9	OLIVO A	13	0.7	33	142
10	ORTON CG	13	0.7	3	7

Table 4 Collaboration Pattern of Authorship in Medical Physics Research Output

Sl. No.	No. of Articles	%
1	431	24.43
2	278	15.75
3	273	15.48
4	205	11.62
5	147	8.33
6	116	6.58
7	86	4.88
8	61	3.46
9	27	1.53
10	42	2.38
Above 10	98	5.56

4.5 Most productive Journals of Medical Physics

Table 5 these top 10 most productive journals have contributed 699 papers, with an average contribution of 69.9papers per journal publications output 1999-2013 among the top 10 most productive journal, only one journal have higher number of papers than the groups average. The journal are Medical Physics (183), Nuclear instruments & methods in physics research section - a - accelerators spectrometers detectors and associated equipment (109). In case of total global citation journal of Medical Physics dominated usage of journal of medical followed by review of scientific instruments dominates the list by having 13.43 percent of citation which indicates the dominated usage of journal of medical physics followed by the IEEE transactions on nuclear science.

Table 5 Most productive Journals of Medical Physics

Sl. No	Journal	Records	Percentage	TLCS	TGCS
1	Medical Physics	183	10.4	73	1553
2	Nuclear Instruments & Methods In Physics Research Section - A	109	6.2	99	4972
3	Review of Scientific Instruments	92	5.2	23	897
4	Journal of Applied Physics	71	4	4	835
5	Applied Physics Letters	61	3.5	7	1201
6	Health Physics	49	2.8	19	131
7	Radiation Protection Dosimetry	41	2.3	7	79
8	Physics in Medicine And Biology	32	1.8	31	651
9	IEEE Transactions on Nuclear Science	31	1.8	30	1210
10	Japanese Journal of Applied Physics	30	1.7	0	33

4.6 Top 10 Institutions Contributed Medical Physics Research

Table 6 reflects the research profile of the most productive institutions in medical physics research output. The 10 most productive institutions in research in medical physics are identified out of these two universities in case of records and citation are IST NAZL FIS NUCL and CERN which are from IST NAZL FIS NUCLEAR which shows the importance of medical physics research output. Here the focusing point is medical physics research output is concentrated in universities and it demands specific research centre for medical physics which can further boost the medical physics.

Table 6 Top 10 Institutions Contributed Medical Physics Research

Sl.No.	Institutions	Records	Percentage	TLCS	TGCS
1	Unknown	83	4.7	9	27
2	Ist Nazl Fis Nucl	59	3.3	104	5479
3	Cern	25	1.4	62	5120
4	University Wisconsin	25	1.4	13	318
5	Mayo Clin	24	1.4	8	335
6	Harvard University	20	1.1	2	234
7	Univ Trieste	19	1.1	44	219
8	Natl Inst Radiol Sci	18	1	15	70
9	Univ Florida	18	1	3	275
10	Chinese Acad Sci	17	1	1	107

4.7 Top 10 Countries Contribution of Medical Physics Research

Table 7 the global publications shares of the 10 most productive countries in medical physics research during from 1999 to 2013 varied between 45 and 499 records. United States of America (USA) topped the list with global publications (1764) share of 499 records during the year 1999-2013. Unknown ranked 2nd with the contribution of 282 records, followed by United Kingdom (UK), Italy, Germany, Japan, Canada, France, peoples China and Australia. In case of TGCS and TLCs there is little variation of UAS topped the TGCS followed by the Unknown and United Kingdom (UK).

The citation analysis shows that UK and USA though with fewer record that UK managed to get more citation which is a healthy sign quality research in USA and UK. Here the concern is that the research is concentrated in developed world and it need to promote in developing world including India and developed world.

Table 7 Top 10 Countries Contribution of Medical Physics Research

Sl.No.	Country-wise	Records	Percentage	TLCS	TGCS
1	USA	499	28.3	167	11267
2	Unknown	282	16	46	1523
3	UK	161	9.1	113	7031
4	Italy	125	7.1	79	2003
5	Germany	114	6.5	54	2003
6	Japan	110	6.2	67	5841
7	Canada	87	4.9	91	6281
8	France	75	4.3	69	6459
9	Peoples R China	74	4.2	11	353
10	Australia	45	2.6	9	380

5. CONCLUSION

In this study on the literature of medical physics research output, a capable new material has been analyzed by scientometrics analysis. The overall number of citations reveals that the impact increase total 1764 records of yearly output of TLCS and TGCS is 89 records are 64 and 5386 citations in 2003 and less than the 210 records is TLCs and TGCs is 210recrods in 2012 and 164 TGCs only. The country wise distribution is higher records in USA 499records TLCS and TGCS 167 and 11267 respectively. There should be a substantial increase in institutional collaboration to increase the output and also to improve the quality of research. In addition there should be more collaboration among the institutions of UNIVERSITY WISCONSIN.

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A Scientometrics Study of Solar Energy in India with Special Reference to Authors' Productivity

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Abstract

The Indian power sector is developing and uprising as thrill grips the nation about connecting Electricity from different sources of renewable energy. In this Study an attempt has been made to measure the research output through Scientometrics analysis of Solar Energy in India to understand the trends of research in terms of H-Index, Collaborative pattern and Citations.

Keywords: *Citation Analysis, H-Index, Solar Energy in India,Solar Energy, Scientometrics*

1. INTRODUCTION

Due to its Geo-Physical location India receives Solar Energy equivalent to nearly 5,000 trillion KWh/ year, which is far more than the total energy consumption of the country. We compare with other energy resources it produces a low power of solar Energy. Government of India's recent policies relating to power sector has given importance to Solar Energy. The great variety of life on earth has provided for man's needs over thousands of years. Science has attempted to classify and categorize the variability in nature and its impact on society and environment for over a century. Scientists, NGOs, Research Institutes, Universities, National Authority of Solar Energy and many others are working on many areas of Solar Energy. Here we made an attempt to study the author's productivity in Solar Energy Research in India with the data obtained from Web of Science Database.

2. OBJECTIVE

This study to analyze the Indian research output in the field of Solar energy during the study period (2000-2012) and the analyses included authors productivity, h-index, collaborative pattern, highly cited papers and year wise growth of the Solar Energy research output in India.

3. METHODOLOGY

Data was collected from the Web of Science (WoS). The WoS is the search platform provided by Thomson Reuters (the former Thomson Scientific emerged from the Institute for Scientific Information (ISI) in Philadelphia). SCI database is one of the very comprehensive databases covering all aspects of science. The study period (2000-2012) is selected as the database is available in machine from since 1982. The search string "Solar energy" in the "Basic search**"** field of for the years 2000-2012 to download the records on the subjects 'Solar Energy' restricted to India. A total of 1832 records were downloaded and analyzed by using the web of science website application as per the objectives of the study.

4. DATA ANALYSIS AND DISCUSSION

4.1 Research Output, h-index of Top 10 Productive Authors of India in Solar Energy

Table 1 reflects the contribution of top ten authors who contributed for the Solar Energy in India. Tiwari GN considered being the most productive author in India in the field of Solar Energy as he tops total records, TLCS, TGCS as well as H-index. In case of number of publications Kumar Sand Sharma GD stands at second and third rank followed by Nagendra H. In case of TGCS, TLCS and H-Index Sharma GD and Gangotri KM stands Third with H-index count 9. This analysis reflects just highest number of publications won't give much credit to the authors if it is not having quality which reflected with H-index.

Table 1 Contribution of Top Ten Authors with H-index

Sl.No	Author	Recs.	Institution	TLCS	TGCS	h-index
1	Tiwari GN	71	Centre for Energy Studies, IIT, New Delhi	153	807	18
2	Kumar S	42	Centre for Energy Studies, IIT, New Delhi	34	505	11
3	Sharma GD	32	R&D Center for Science and Engineering, Jaipur Engineering College, Kukas, Jaipur	19	310	9
4	Gangotri KM	31	Jai Narain Vyas University, Jodhpur Rajasthan	149	202	9
5	Kumar A	28	Tezpur University, Napaam, Sonitpur, Assam	37	175	7
6	Sharma R	24	Dr. Babasaheb Ambedkar Marathwada University, Aurangabad	14	153	6
7	Kumar P	23	Dayalbagh Educational Institute, Dayalbagh, Agra	20	132	8
8	Sodha MS	20	University of Lucknow, Lucknow	67	301	10
9	Lakhina GS	19	Indian Institute of Geomagnetism Kalamboli Highway, New Panvel Navi Mumbai	5	262	9
10	Mikroyannidis JA	19	University of Patras, Patra, GR 26500, Greece	16	247	9

4.2 Authorship Patterns of Contributors

Table 2 and Figure 1, Reflects the collaborative pattern of authors involved in Solar Energy in India. Double authors contribution stands top of the list followed by three, four and single authors. Contribution of double authors is 506 papers which is 27.62 % 0f the total records. The table shows that more than 60% of the contribution came from double, three and four authors which is really a positive aspect in collaboration.

Table 2 Authorship Patterns of Contributors

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Single	5	8	7	5	4	3	9	11	7	9	12	10	10	100
Double	20	17	14	20	33	29	36	41	39	55	63	68	71	506
Triple	11	9	22	28	6	12	38	27	36	52	65	62	92	460
Four	10	8	14	12	9	7	21	19	19	39	38	47	68	311
Five	3	3	3	4	3	3	11	15	17	16	28	37	20	163
Six	-	1	3	3	4	4	5	8	15	10	17	15	25	110
Seven	1	-	2	3	2	2	6	5	3	4	5	19	21	73
Eight	1	-	-	-	1	1	1	1	4	4	3	9	9	34
Nine	1	1	-	1	-	-	2	3	1	4	5	8	4	30
Ten	1	1	-	-	-	1	-	-	-	1	2	1	4	11
>10	1	2	-	-	2	2	4	2	2	6	1	7	5	34
Total	54	50	65	76	64	64	133	132	143	200	239	283	329	1832

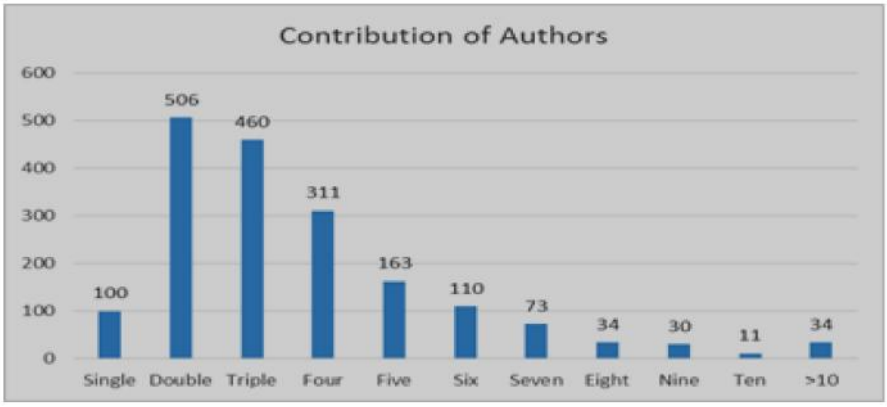

Fig:1 Contribution of Authors

4.3 Single Vs Multi Author Collaboration of Research Output

Table 3 indicates the degree of collaboration in research output of Solar Energy. The degree of collaboration is 0.26 during the study period 2000 to 2012. i.e., out of the total 1832 literature published 1732 are from multiple authors which 94.55 percent is of total output and 100 papers are published by single author which is 5.45 percent of total output. In case of collaboration co efficiency the year 2001 stands ahead of all with 71%.

It could be seen clearly from the above discussion that the degree of collaboration in producing research output on Green computing research has shown in fluctuation trend during the study period; because the researcher has identified the selection area of Solar Energy is a new discipline. Based on this study, the result of the degree of collaboration **C = 0.86** i.e., 86 percent of collaborative authors' articles published during the study periods.

Table 3 Single Vs Multi Author Collaboration of Research Output

Year	Single Author		Multi Authors		Total	Collaborative Co-efficient
	No. of Output	%	No. of Output	%		
2000	5	5	49	2.83	54	0.91
2001	8	8	42	2.42	50	0.84
2002	7	7	58	3.35	65	0.89
2003	5	5	71	4.10	76	0.93
2004	4	4	60	3.46	64	0.94
2005	3	3	61	3.52	64	0.95
2006	9	9	124	7.16	133	0.93
2007	11	11	121	6.99	132	0.92
2008	7	7	136	7.85	143	0.95
2009	9	9	191	11.03	200	0.96
2010	12	12	227	13.11	239	0.95
2011	10	10	273	15.76	283	0.96
2012	10	10	319	18.42	329	0.97
	100	100	1732	100	1832	12.10(0.86)

4.4 Highly Cited Papers (Top 5)

Table 4 indicates ranking of papers by number of Total Citation Scores and average number of citations received per year. The paper "Astrophysical magnetic fields and nonlinear dynamo theory " Brandenburg, A; Subramanian, K stands top in total citation score as it received 466total citations and average it received 51.78 citations per year. In case of average citations per year the paper "Review on thermal energy storage with phase change materials and applications " stands ahead of all the papers as it was published in the year February 2009 and it received totally 322 citations with an average of 64.40 citations which is really a sign of quality and its relevance to others researchers.

Table 4 Top 5 Most Cited Papers

Sl.No	Authors	Title	Total Citations	Average Citations Per year	Published Year
1	Brandenburg, A; Subramanian, K	Astrophysical Magnetic Fields And Nonlinear Dynamo Theory	466	51.78	OCT 2005
2	Sakthivel, S; Neppolian, B; Shankar, MV; *et al.*	Solar Photocatalytic Degradation Of Azo Dye: Comparison Of Photocatalytic Efficiency Of ZnO and TiO2	419	38.09	APR 2003
3	Sharma, Atul; Tyagi, V. V.; Chen, C. R.; *et al.*	Review on Thermal Energy Storage with Phase Change Materials and Applications	322	64.40	FEB 2009
4	Ajayaghosh, Ayyappanpillai; Praveen, Vakayil K.; Vijayakumar, Chakkooth	Organogels as Scaffolds for Excitation Energy Transfer and Light Harvesting	264	44.00	2008
5	Kumar, S	Self-Organization of Disc-Like Molecules: Chemical Aspects	238	29.75	2006

4.5 Top 10 Institution-wise Distribution of Records

Table 5 and figure 2 shows the Institution wise distribution of records, whereas the Indian Instituteof Technology contributes first place total 262 records, 380 local citations and 3015global citation scores followed by Jai Narain Vyas University second place, it contributes 78 records 241 TLCS and 645 TGCS.

Table 5 Top 10 Institution-wise Distribution of Records

Sl.No	Institution	Recs.	TLCS	TGCS
1	Indian Inst. Technology	262	380	3015
2	Jai Narain Vyas University	78	241	645
3	Shivaji University	65	52	915
4	Anna University	51	32	1382
5	Phys Res Lab	47	37	412
6	National Inst Technology	46	23	345
7	Banaras Hindu University	43	24	383
8	Indian Inst. Science	41	17	369
9	Tata Inst. Fundamental Res	40	32	720
10	Indian Inst Astrophysics	39	13	521

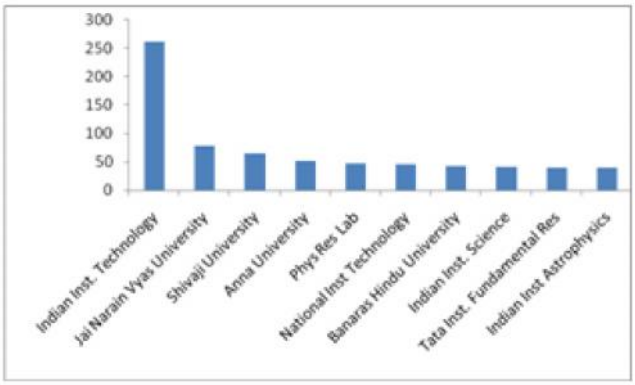

Fig: 2 Institution-wise distribution of Records

5. FINDINGS AND SUGGESTIONS

There is no much variation in the early output up to 2005 but from 2006 onwards there is significant development in the research output of Solar Energy but as compare to the global output India still need to improve research performance in Solar Energy as it is the mega Solar Energy nation.

Contribution of multiple authors is dominating with major contribution of double and three authors; so there

is a need of promoting further collaboration in the field of Solar Energy research in India.

6. CONCLUSION

Solar Energy research in India has shown the importance of understanding the Solar Energy for the sustainable development. Though the study started in recent decade but there is really a optimistic growth in the research. Most of the nations are very enthusiastic to take research in the field of Solar Energy as it is the real asset of the mankind and India is not exception for it but as compare to Indian Solar Energy still we need to improve the research performance in a way to protect our Solar Energy.

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