Indian Journal of
Information Science and Services

A Refereed Research Journal on Library and Information Science

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D-LIB MAGAZINE: A BIBLIOMETRIC STUDY

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Abstract

This paper examines the articles published in online D-Lib magazine for authorship trend, contribution of teaching and professional, country-wise contribution, degree of collaboration and productivity within different facets of digital / electronic libraries. The study carried out for this paper has found that collaborative research is given priority over solo research. The degree of collaboration is found to be 0.625. The study further reveals that most of the contribution comes from the USA and Germany while facet-wise distribution of articles depicts that most of the articles cover digital libraries and preservation followed by metadata / cataloguing.

1. INTRODUCTION

Studies of publication pattern also known as Bibliometric or Quantitative Studies are useful indicators of scientific productivity, trends, emphasis of research in various disciplines and researchers preference for publication [1]. It reveals interesting information about knowledge producers and their interactions. Authorship of a paper has become important for scientists and researcher and understandably it has become an important area of study and debate in recent years [2]. Articles published in scholarly journals, including those in the library and information sciences reflect changes in the interests and concern of their author constituencies and the discipline can be documented through bibliometric analyses of journal content [3]. There are thousands of journals devoted to the field of library and information science.

Although sizeable work on bibliometrics has been carried out in the field of Library and Information Science, there has been little effort towards bibliometric analysis of online journals [4]. Thus the present study chooses D-Lib magazine for bibliometric analysis.

2. D-LIB MAGAZINE

D-Lib Magazine is a solely electronic publication with a primary focus on digital library research and development, especially for new technologies, applications, and contextual social and economic issues. The magazine is currently published six times a year. The full contents of the magazine, including all back issues, are available free of charge at the D-Lib website (http://www.dlib.org/) as well as multiple mirror sites around the world [5]. D-Lib Magazine is produced by Corporation for National Research Initiatives (CNRI). Before April 2006, the magazine was sponsored by the Defense Advanced Research Project Agency (DARPA) on behalf of the Digital Libraries Initiative under Grant No. N66001-98-1-8908, and by the National Science Foundation (NSF) under Grant No. IIS - 0243042. Currently, the magazine is supported by the D-Lib Alliance [6].

3. OBJECTIVES OF THE STUDY

The following objectives are laid down for the study.

i.   To assess authorship pattern;
ii. To determine the degree of collaboration among the authors;
iii. To find year-wise contribution of articles;
iv. To find country-wise distribution of contributors; and
v.   To study distribution of papers over various facets of digital / electronic libraries.

4. METHODOLOGY

The data base for the present study comprises 368 articles published in D-Lib Magazine from January 2000 to December 2007. Each article is evaluated for number of authorship, nature of the authors' work, subject of the article and authors' country affiliation. All the relevant data is arranged systematically supported with tables.

5. RESULTS AND DISCUSSION

The authorship pattern analyzed to determine the percentage of single and multi-authorship is denoted in Table 1.

Table 1 Authorship Pattern of Articles in D-Lib Magazine

Number of Authors	Number of Papers	%
One	138	37.5
Two	95	25.82
Three	55	14.94
More than Three	80	21.74
Total	368	100

The results depict that majority of papers are multi-authored. Articles having single authors constitute only 37.5 % of the total paper, followed by 25.82 % by two authors,   21.74% by more than three authors respectively. Papers having three authors constitute   14.94%. Thus, it clearly brings out collaborative research in the field.
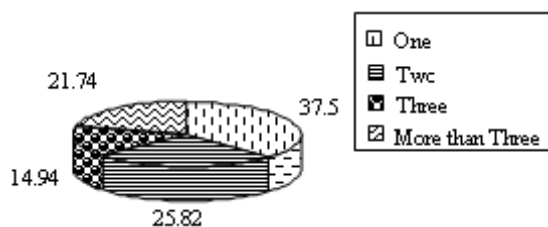
Fig.1 Authorship pattern

The formula given by K.Subramanyam is useful for determining the degree of collaboration in quantitative terms. The study followed the same formula which is mathematically put as:

$$C = \frac{NM}{NM + NS}$$

Where C = Degree of Collaboration
NM = Number of multi authored papers
NS = Number of single authored papers

In the present study,

NM = 230
NS = 138
Thus C = 0.625

Thus the degree of collaboration in D-Lib Magazine is 0.625 which clearly indicates its dominance upon individual contribution.

Table 2 Year- wise Publication of Articles

Year	Total No. of Articles	%
2000	51	13.85
2001	45	12.22
2002	49	13.31
2003	52	14.13
2004	40	10.86
2005	54	14.67
2006	45	12.22
2007	32	8.69
Total	368	100

Table 2 shows that the highest publication is in 2005 with 54 publications followed by 52 papers in 2003 and 51 papers in 2000. The lowest publication is 32 papers in 2007.
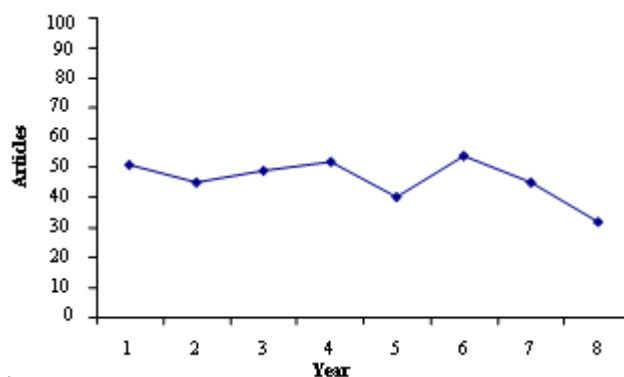
Fig. 2 Year-wise publication of article

(1-2001, 2-2002, 3-2003, 4-2004, 5-2005, 6-2006, 7-2007, 8-2008)

Table 3 Geographical Distribution of Papers

Sl.No.	Country	No. of Articles
1	USA	246 (66.85)
2	UK	62 (16.85)
3	GERMANY	10 (2.7)
4	SPAIN	6 (1.6)
5	MULTINATIONAL	11 (2.9)
6	NEW ZEALAND	5 (1.36)
7	AUSTRALIA	9 (2.45)
8	CHINA	4 (1.08)
9	NETHERLANDS	4 (1.08)
10	NORTH AFRICA	3 (0.81)
11	CANADA	2 (0.54)
12	BRAZIL	2 (0.54)
13	SWEDEN	1 (0.27)
14	AUSTRIA	2 (0.54)
15	INDIA	1 (0.27)
	Total	368 (100)

Figures in parenthesis indicate percentage

Table 3 indicates that most of the articles (66.85%) are contributed by the USA followed by the UK (16.85%) and Germany (10). There is no contribution from Asian Countries except China and India. China has contributed four papers (2.07%) and India one paper (0.27%) during the stipulated period.
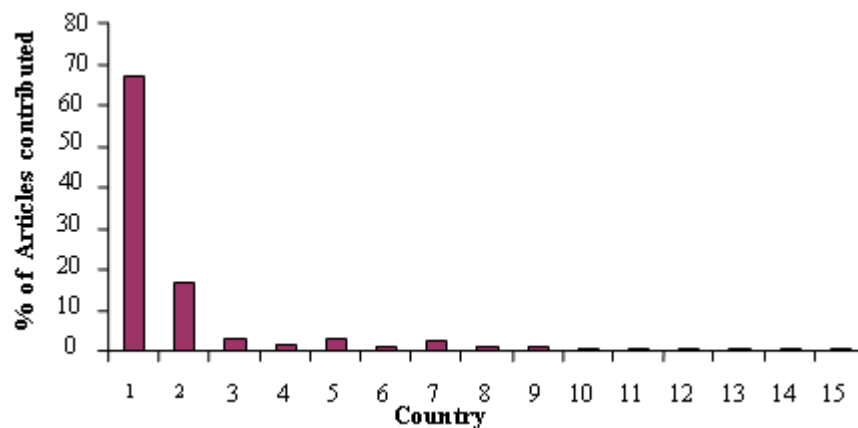
Fig.3 Geographical distribution of papers
(The numbers in X axis i.e., country indicates the country as given in Table 3)

Table 4 Facet-wise Distribution of Article

Subject Area	% of Article
Digital Libraries and Preservation	48.45
Metadata / Cataloguing	12.24
E- Documents	6.65
Databases / Software	9.86
Web Access	3.65
Others	19.15
Total	100

It is evident from Table 4 that most of the articles (48.45%) cover digital libraries and preservation followed by metadata / cataloguing (12.24%) and databases / software (9.86%). The other facets together constitute 19.15%.
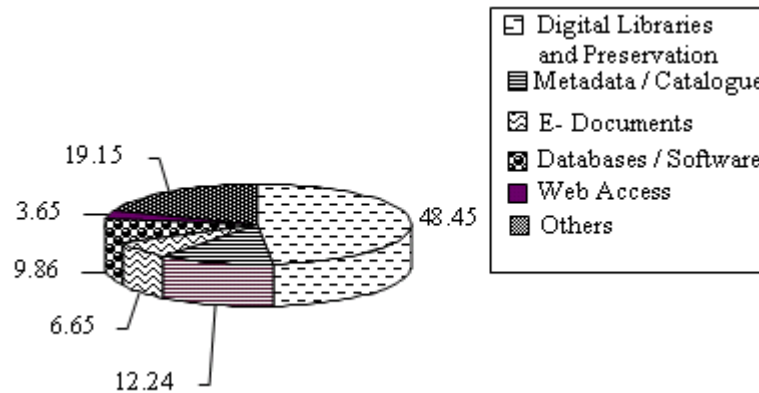
Fig.4 Facet-wise distribution of articles (in percentage)

6. CONCLUSION

The trend towards collaborative research is gaining currency day-by-day. Now- a-days each and every work of researcher depends purely on the library because it contains more sourceable data. The research in the field of library and information science has become a collective entity wherein more and more researchers help to make it innovative. The result depicts that the journal is dominated by the host country (USA) as most of the articles are contributed by the professionals from the USA. The results further reveal that the journal is wholly and solely devoted to digital / electronic libraries and its associated facets.

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ADJUSTMENT BEHAVIOUR AMONG ENGINEERING COLLEGE LIBRARIANS IN TAMIL NADU: A STUDY

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Abstract

The concept of adjustment is as old as human race on Earth. Systematic emergence of this concept starts from Darwin. These two types of the demands come to conflict with other and resultantly make an adjustment to complicate process to the individual conflict among the various needs or demands of a person in the present social problem of adjustment. The article studies the adjustment problems among engineering college librarians in Tamil Nadu. It highlights the problem like Health, Emotion, Home, Social, and Self related with Librarians. It lists the results drawn on the basis of objectives framed. It is found that the librarians have low adjustment behaviour towards their profession.

Keywords: Adjustment Behaviour, Library Professionals

1. INTRODUCTION

Library and society are interlinked and interdependent. Society without libraries has no significance, and a library without society has no origin, commenting on the role of library in society [1]. J.H. Shera writes "The library is a product of our cultural maturation" [2]. Early libraries were essentially archival-storage places for the preservation of records that were necessary for the transactions of business or commerce. Thus, beginning the library has been a product of social organization and it was almost to the sole resource of the philosophers, the scholars, the servants the wiseman and the probes of the unknown [3].

Today, we look upon library as a social agency. The library has been created by actual necessities in modern civilization. It is now a necessary unit in the social fabric. It is a product of society for its cultural advancement. Not only to the libraries conserve our culture but also as agencies of communication they play an important role in its dissemination [4].

Adjustment is referred to "as individual experience of well being, life satisfaction and depression" [5].

2. ADJUSTMENT PROBLEMS
2.1 Health Adjustment

One is seems to be the adjusted to one's physical development.

2.2 Emotional Adjustment

Emotion plays an important part in one's adjustment to self and environment. An individual seems to be emotionally adjusted if he is able to express his emotions in proper way to a proper time, it requires one's balanced emotional development and proper training in the outlet of emotions.

2.3 Social Adjustment

How far one is adjusted can be ascertained by one social development and adaptability to the social environment. Social adjustment requires the development of social qualities and virtues in an individual. It also requires that one should be social enough to live in harmony with others and feed responsibility and obligations towards his fellow being society and country.

2.4 Home Adjustment

Home is the source of greatest satisfaction and security to its members. The relationship among the

members and their ways of behaviour plays a leading role in the adjustment of an individual. All problematic and delinquent behaviour is the result of maladjustment, which is caused on account of faulty rearing and uncongenial atmosphere at home [6].

3. NEED FOR THE STUDY

The library profession is different from teaching. The librarian acts the dual role of a teacher and a guide to the invaluable resource available in the premises of a library. He mostly deals with human beings every day. He has to satisfy the information demands of both teachers and students. He also has to manage his subordinates, make them work to the fulfillment of the total objectives of the library. In this process he may get bruised with stressful situations which would cause emotional, physical and mental problems. Hence, it is essential that a study has to be attempted to analyze the adjustment behaviour of the librarians.

4. OBJECTIVES OF THE STUDY

The following objectives are framed for this study.

i. To study the different types of adjustment problems (Social, Self, Home, Health and Emotion)
ii. To study the health adjustment behaviour among the librarians.
iii. To study the social problems among the librarians faced in the library.
iv. To cite how for the home situations affect the librarians in their career.
v. To find the psychological difficulties faced by the librarians.
vi. To find out the association and relation between socio-demographic variables and the areas of adjustment problems.

5. METHODOLOGY

The librarians who are working in various engineering colleges constitute the sample for the study. Ramamurthy's Adjustment inventory is used to collect data.

The inventory consists of 25 items. The score is given on the basis of the answer given in the inventory. The mark or score is given if the respondent's answer matches with the answer given in the inventory. Two

marks is given to the correct answer. According to this inventory, the score secured by respondents are is ranked as low or high.

A questionnaire method [7] is adopted to collect data from the librarians of various engineering college libraries in Tamil Nadu. 100 questionnaire were distributed to librarians and 75 filled questionnaires were received back.

6. ANALYSIS AND DISCUSSION

Table 1 Classification of Respondents by their Educational Qualification

Qualification	No. of Respondents	Percentage
Ph.D	10	13
M.Phil	22	30
MLIS	43	57

Table 1 shows   the educational qualification of the respondents. It is observed that 57% of respondents are MLIS degree holders, 30% of respondents are M.Phil holders and remaining are Ph.D holders. It is good trend to see that in present era, professionals working in the field of Library Science are interested to do higher studies like M.Phil, and Ph.D. The awareness of studying higher education definitely brings close adjusment among the librarians.

Table 2 Classification of Respondents by Experience

Years of Experience	No. of Respondents	Percentage
< 10	10	23
11 to 20	45	50
>20	20	27

Table 2 infers that 50% of respondents have 11 to 20 years of experience, 27% of respondents have about 20 years of experience, 23% of respondents have up to 10 years of experience. The study indicates that 50% of respondents have 11 to 20 years of experience.

Table 3 Classification of Respondents by their Monthly Income

Income in Rupees	No. of Respondents	Percentage
< 15.000	25	33
16,001 to 20,000	30	40
> 20,001	20	27

With regard to monthly income 40% of respondents earn Rs.16,001 to 20,000, 33% of respondents earn below Rs. 15,000 per month. This may be due to the fact that majority of librarians are working in self-financing engineering colleges. The remaining 27% of respondents who earn above Rs. 20,000 are working in government and aided institutions (Table 3).

Table 4 Classification of Respondents Based on Various Dimensions of Adjustment

Sl. No.	Various Dimensions of Adjustment	No. of Respondents n =75	Percentage
	Health Adjustment		
1	Low	46	61
	High	29	30
	Emotional Adjustment		
2	Low	71	94
	High	4	06
	Self adjustment		
3	Low	34	45
	High	41	55
	Home Adjustment		
4	Low	59	78
	High	16	22
	Social adjustment		
5	Low	70	93
	High	5	07
	Overall Adjustment		
6	Low	43	57
	High	32	42

From Table 4, analysis regarding health adjustment reveals that 61% of respondents have low health adjustment and remaining 39% possess high adjustment.

Regarding emotional adjustment, majority of respondents (93%) experiences low emotional adjustment.

With regard to self-adjustment, 55% of respondents have high self-adjustment and remaining 45% of respondents have low level of self-adjustment.

Regarding home adjustment, 75% of respondents experiences low level of adjustment. Remaining 22% of librarians have high level of home adjustment.

In the case of social adjustment, majority of respondents (93%) have very low social adjustment and 7% have shown high level of social adjustment.

The overall adjustment analysis reveals that 57% of college librarians have low level of various adjustment factors and it is followed by 43% of respondents who have high level of adjustment factors. In fact , the study reveals that all librarians working in engineering colleges have low level of adjustments.

Chi-Square tests have been applied to identify whether there is a significant association between the sex and the various dimensions of adjustment. It has been found that the dimensions namely health, emotion, home, social and self have significant relationship between genders.

There is a significant relationship showing female respondents have higher level of adjustment in their profession.

The overall adjustment has revealed that sex has significant relationship to all the dimension of adjustment problems.

Table 5 Classification between Respondents Sex and Various Dimension of Adjustment

Sl.No.	Sex	Various Dimension of Adjustment		Statistical Inference
		Low	High	
1	Health Adjustment	n=46	n=29	t=3.84
	Male	26	10	x2=1.5,
	Female	20	19	df=1,at.05Significant
2	Emotional Adjustment	n=71	n=04	t=3.84
	Male	38	01	x2=1.2
	Female	33	30	df=1at.05Significant
3	Self Adjustment	n=34	n=41	t=3.84
	Male	17	21	x2=1.1
	Female	17	20	df=1at.05Significant
4	Home Adjustment	n=59	n=16	t=3.84
	Male	35	06	x2=1.5
	Female	24	10	df=1at.05Significant
5	Social adjustment	n=70	n=05	t=3.84
	Male	45	02	x2=1.4
	Female	25	03	df=1at.05Significant
6	Overall Adjustment	n=43	n=32	t=3.84
	Male	20	07	x2=1.4
	Female	23	25	df=1 at.05,Significant

Table 6 Classification between Monthly Income of the Respondents and Various Dimension of Adjustment

Sl. No	Monthly Income in Rupees	Various Dimensions of Adjustment		Statistical Inference
		Low	High	
1	Health Adjustment	N=46	N=29	t=5.99
	Up to 10,000	8	6	X2=1.3
	11,000 to 20,000	25	13	df=2
	Above to 20,000	13	10	at.05**Significant**
2	Emotional Adjustment	N=71	N=4	t=5.99
	Up to 10,000	11	1	X2=1.2
	11,000 to 20,000	46	2	df=2
	Above to 20,000	4	1	at.05**Significant**
3	Self Adjustment	N=35	N=40	t=5.99
	Up to 10,000	6	12	X2=1.25
	11,000 to 20,000	20	21	df=2
	Above to 20,000	8	8	at.05**Significant**
4	Home Adjustment	N=59	N=16	t=5.99
	Up to 10,000	10	4	X2=1.3
	11,000 to 20,000	30	8	df=2
	Above to 20,000	19	4	at.05**Significant**
5	Social Adjustment	N=70	N=5	t=5.99
	Up to 10,000	15	1	X2=1.2
	11,000 to 20,000	45	3	df=2
	Above to 20,000	10	1	at.05**Significant**
6	Overall Adjustment	N=43	N=32	t=5.99
	Up to 10,000	10	3	X2=1.3
	11,000 to 20,000	25	20	df=2
	Above to 20,000	8	9	at.05**Significant**

The analysis shows the relationship between monthly income of the respondents and various dimensions of adjustment.

In all dimensions the respondents earning income with the following groups, up to Rs.10, 000, Rs.10, 000 to 20,000 above Rs.20, 001 have revealed low level of adjustment behaviour.

7. FINDINGS

* The study has revealed that both the gender categories are equally respondents to the questionnaire.
* The study has cited that 50% of the respondents are having 11 to 20 years of experience.
* The study has indicated that 53% of married respondents have adjustment behaviour than unmarried librarians.
* The study has indicated that (regarding overall adjustment) 57% of college librarians have low various dimensions of adjustment behaviour. In fact, the study has also revealed that in near future, the adjustment behaviour pattern among librarians will be a question mark.
* The study has revealed that the adjustment dimensions namely health, emotion, home, social and self have significant relation between genders.
* The study has indicated that the librarians belonging to the various income groups like Rs.10, 001 to 20,000 and above Rs.20, 001 have low level of adjustment behaviour.
* Majority of librarians have good social adjustment with equal or high level friends with low or poor status people.
* Regarding friendship traits most of them have kept away from friends with the habits like stealing and lying. They have indicated that selection of friends on personal characteristics are followed by academic standards and social status.
* The study has revealed that choosing friends by self have higher impact than the selection by parents and friends.
* In general it is concluded that the adjustment behaviour among the librarians is very low.

8. CONCLUSION

Adjustment behaviour if not handled properly will lead to long term impairment of emotional, physical and mental health of the respondents. It would be useful if short term course training programmes be conducted for librarians. Stress management methods also could be taught to them.

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INFORMATION SEEKING BEHAVIOUR OF USERS AT DIRECTORATE OF DISTANCE EDUCATION LIBRARY, MADURAI KAMARAJ UNIVERSITY, TAMIL NADU

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Abstract

This paper attempts to study the information seeking behaviour of the users of the Directorate of Distance Education Library, Madurai Kamaraj University, Tamil Nadu and thereby using the data collected from the users. It proposes that such studies can be used as a parameter for measuring the services of a Library. This paper justifies the fact that the services of the Directorate of Distance Education Library are exemplary.

Keywords: Academic Library, Information Seeking Behaviour

1. INTRODUCTION

Nowadays, information is considered as a useful commodity for routine life. For any thing and every thing information is required [1]. This information is available in various sources. Libraries serve as a center for providing right information to the right people at all times. The new information technology has enabled the library and information centers to change their mode of service from traditional to internet based services [2]. This paper discusses the information seeking behaviour of various categories of clientele in different environments and attempts to identify how far the readers and the librarians are keeping in pace with the new information era [3]. Based on the study of the users, this paper attempts to justify the services of the Directorate of Distance Education (DDE) Library, Madurai Kamaraj University, Tamil Nadu.

2. INFORMATION SEEKING BEHAVIOUR

According to Krilelas (1983), Information seeking behaviour refers to "any activity of an individual that is undertaken to identify a message that satisfies a perceived need" [4].

Austerd defines Information seeking behaviour as " the field composed of studies that are concerned with

who needs what kind of information and for what reason, how information is found, evaluated and used and how these needs can be identified and satisfied"[5].

Information seeking behaviour means individual's way and manner of gathering and sourcing for information for personal use, knowledge updating and development. Faire-Wessels refers to it as the way people search for and utilize information. Kakai, et al., observes that often students' information seeking behaviour involves active or purposeful information as a result of the need to complete course assignment, prepare for class discussions, seminars, workshops, conferences or write final year research papers [6]. Various studies show that the information seeking behaviour of various categories of users differ.

For example, postgraduate students may be smart people, but they are still finding the process of research threatening. These students do not learn the basic information skills; they only end up using trial and error methods of research. This limits their capabilities to satisfy their needs [7]. After interacting with the information sources (e.g. library) what a user actually needs may not eventually tally with what is practically available, due to constraints either within the stock or due to the user own inadequacy. Many problems may serve as hindrances for the undergraduates in the process of their search or

using the library. Since this study is conducted in a learning context from students' perspectives, some relevant models are considered.

3. THE INFORMATION SEARCH PROCESS MODEL

It is obvious that students' information seeking behaviour would differ from faculty and graduate students because their information seeking skills are not as well developed. Information seeking process is not a single step process. It is a cyclic one, which involves seven steps.
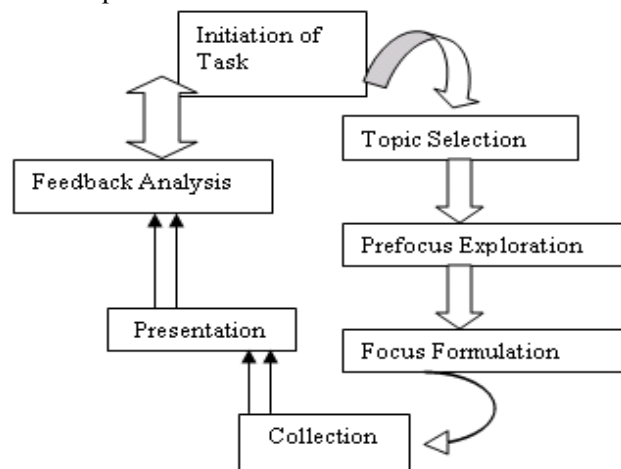
Fig.1 Information seeking cycle

4. METHODOLOGY

This is essentially a survey study. 250 respondents were randomly selected from the students and faculty members of Directorate of Distance Education, Madurai Kamaraj University, Tamil Nadu. A questionnaire tagged Academic Information Seeking Behaviour Scale (AISBS) was used to collect data for the study. The questionnaires were administered to the students and faculty members who visited the DDE Library.

5. ANALYSIS AND DISCUSSION

Table 1 Frequency of Visit to DDE Library

Frequency of visit	Frequency	%
Daily	150	60
Once in a Week	50	20
Twice in a Week	30	12
Very Rarely	20	8
Total	250	100

The DDE Library caters to the information needs of the students and faculty members of DDE. Among the respondents, majority of them visit the DDE Library every day and this forms 60 % of the respondents. Those who visit the library very rarely are negligibly forming 8 %.

Table 2 Predominant Information Required

Information Required	Frequency	%
Health Information	19	7.6
Information for Personal development	25	10
Academic Information	151	60.4
Employment Information	45	18
Global Information	10	4
Total	250	100

Table 2 shows that the predominant information required by students is academic information. This is confirmed with 151 respondents, which forms 60.4 % of the total respondents. The next ranked information need is for employment information. (Other required information by the students but which may not be as vital as academic information for employment (18%); Information for personal development (10%); health information (7.6%); global information (4%)).

Table 3 Opinion about the Services of the DDE Library

Opinion	Frequency	%
Very Good	155	62
Good	70	28
No Comments	10	4
Not Satisfactory	15	6
Total	250	100

Table 3 shows the opinion of the readers about the services of the DDE Library. Among the respondents, majority are very much satisfied with the services of the DDE Library and 62 % and 28 % of the respondents who declare that the services are very good and good respectively.

Among the respondents, 56 % seek their required information from internet while 24 % consult the textbooks.

Table 4 Major Sources Consulted for Academic Information

Sources of Information	Frequency	%
Internet	140	56
Textbooks and other Books	60	24
Thesis/Dissertations	10	4
Newspapers	15	6
Print Journals	25	10
Total	250	100

Though the DDE Library's main focus is to serve the faculty members with required reading materials for their lesson, writing work and their research, the study shows that the faculty and students of DDE are keeping in pace with the new information technology.

Table 5 Level of Satifaction on Information Obtained

Response	Frequency	%
Very Satisfied	165	66
Satisfied	60	24
Less Satisfied	10	4
Dissatisfied	15	6
Total	250	100

The results confirm that 165 participants (66%) who constitute the majority indicated that they are very satisfied with all the information they are getting from the identified sources. Furthermore, 60 (24%) indicated they were satisfied while 10 (4%)and 15 (6 %) indicated less satisfied and dissatisfied respectively.

6. CONCLUSION

The issue of quality in higher education has become more paramount now and to achieve this end the libraries attached to the educational institutions play a vital role. Hence this study is a pioneering effort to identify how far the DDE Library, Madurai Kamaraj University, Tamil Nadu is capable of serving the clientele. Though there are certain limitations, the study shows that

* Most of the clientele of the DDE Library seek mainly academic information.
* Almost all the users are satisfied with the services of the DDE Library.

* Majority of the users are satisfied with the quantum and quality of information available at the DDE Library.
* The users of the DDE Library consult internet sources more than the text books available at the library.

The analysis of the users and their views prove that the Directorate of Distance Education Library, Madurai Kamaraj University is providing information services to the users as Dr.S.R.Ranganathan has pointed out as "Right information to Right user at the Right Essential Time".

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USE OF ELECTRONIC RESOURCES IN UNIVERSITY LIBRARIES OF KARNATAKA: A CASE STUDY OF GULBARGA UNIVERSITY LIBRARY

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Abstract

The present paper explains about the electronic resources and their use by the faculty members and the research scholars in the Gulbarga University, Gulbarga. The data is collected through a questionnaire to study the information needs of the faculty members and researchers in various PG departments in Gulbarga University. The paper has revealed that the electronic resources available in the Gulbarga University Library are much helpful in fulfilling their information needs. There is a need to train the faculty members and the research scholars have to use the electronic resources. Further, there is a need to include more number of journals in the UGC-INFONET Consortium.

1. INTRODUCTION

Libraries are described as the 'treasure houses of knowledge'. Though they have grouped under the category of storage of information, they play an important role in the collection, organization and dissemination of information.

In the evolution of human civilization, agricultural revolution, industrial revolution and information revolution have played a major role. Alwin Tofler Peter Procker, Regis Debray, Marshall Mc Luhan, Joel De Rosnay, Mac Curter and others agree that the new information age, we are in, is the process of rapidly replacing the industrial era. In this new phase of information and new technologies, the science and knowledge become the critical factors of the so called "Value Added Economy". Alwin Toffler in his book "Third Wave" has rightly observed that the computer and communication technologies are leading us to the "Third Wave", a change of information age, electronic era or a "Global Village".

Electronic publishing can be defined as the publication process where the manuscripts are submitted in electronic format, edited, printed and even distributed to the users by employing computers and electronic media. An electronic publication refers to any information source published in electronic (machine readable) form. The electronic publication is the fusion of electronic, computer, digital and communication technologies for publishing. These include sources distributed on magnetic tape, optical disks (such as Compact Disk, DVD) and some other means. Internet is a popular media, through which any kind of information is transmitted through its different utilities such as e-mail, search engines, web portals, discussion forums, groups, web logs etc. Hence, internet is also known as a powerful information source in the modern days. Due to the emergence of computers and internet applications in the library, use of digital information is developed. The resource sharing among the libraries has started with the help of consortia. A Consortium is a group of organizations whose purpose is to collectively facilitate and support the work of a service program in ways that add material and human resources beyond those available to each organization individually.

In library science, consortium is a group of libraries or other organizations that form a partnership to achieve a goal, such as shared cataloguing or resource sharing, which cannot be achieved by the individuals alone.

A consortium is helpful in getting co-operation from various libraries in acquiring electronic databases, communication of information and inter library loan.

Now-a-days, many of the special and University libraries formed a group for getting online journals. In India, UGC-INFONET is the biggest Consortium of University and Research Libraries.

Indian Universities constitute one of the largest higher education systems in the world. With 310 Universities, 16000 affiliated colleges around ten million students and five lakhs teachers [1].

INFLIBNET is a national level Inter-University Centre of UGC in India, set up by UGC to promote higher education and research in India. The INFLIBNET centre had already started the subscription of the electronic journals under the consortium for Universities in India. It is planned to extend these facilities to college libraries gradually. The consortium covers almost all subjects such as Arts, Humanities, Social Sciences, Physical and Chemical Sciences, Life Sciences, Computer Sciences, Mathematics and Statistics.

The UGC-INFONET is a boon to higher education in several ways. It is a major electronic information source for research scholars to get pin-pointed and the latest information in their subject area. The Electronic journal programme is a corner-stone of the UGC-INFONET effort which aims at addressing the teaching, learning the Universities. It would facilitate free access to scholarly journals and databases in all areas of learning to the research and academic community [2].

Gulbarga University is also a member of UGC-INFONET Consortium and provides access to e-journals to the users [3]. The present paper attempts to find the use of electronic resources including electronic journals subscribed through this consortium, internet utilities, databases, portals etc., by the faculty members and the research scholars in Gulbarga University, Gulbarga.

2. GULBARGA UNIVERSITY LIBRARY, GULBARGA

This University was started as PostGraduate Centre of Karnataka University, Dharwad in 1970. Later in 1980 it was taken status of the University, vide Karnataka State Universities Act 1976 as amended by the Act of 1980. At present, the University has 34 PostGraduate and Research departments in Social Sciences, Humanities and Science and Technology [4]. The University serves

educational requirements of the Hyderabad-Karnataka region. The University has PostGraduate Centres at Raichur, Bellary, Bidar and Sandur.

The library has a large collection of printed books, periodicals apart from the electronic resources. At present the library subscribe 18 electronic databases in different subject disciplines. About 50 computer systems facilitate the internet and online services to the faculty members, research scholars and the postgraduate students. The library provides access to the full text journals and databases through UGC-INFONET consortium. A new building of Learning Resource Centre is under progress, to accommodate about 120 computer systems with LAN facilities to access electronic books, electronic journals, internet and consortium.

3. OBJECTIVES OF THE STUDY

i. To identify the information needs of the research scholars and the faculty members in Gulbarga University, Gulbarga.
ii. To know the knowledge about electronic resources among the faculty members and the research scholars.
iii. To ascertain whether an orientation programme/ training/workshop is necessary to educate the users in searching databases and e-journals.
iv. To know the extent of the use of electronic resources.
v. To know about satisfaction of the information needs of the research scholars and the faculty members by e-resources such as electronic journals, UGC-INFONET consortium, internet & its utilities, databases, etc. subscribed by the Gulbarga University Library.
vi. To find out the problems in respect of access the e-resources and their use.
vii. To get the valuable suggestions for the improvement of the library.

4. METHODOLOGY

The proposed research study will begin with the literature search. The researcher will refer Library and Information Science Abstract (LISA) from 1969 to 2001, leading regional, national and international journals and books published in the fields of User Studies and Use of Electronic Information Sources.

Therefore the present survey is conducted through questionnaire method. Questionnaires were circulated among the faculty members and the research scholars of different PG Departments in different disciplines of Gulbarga University, Gulbarga. In addition, the information is collected through personal interaction with the researchers. Out of 212 faculty members, about 151 faculty members have responded to the study, and out of 412 research scholars, 268 were responded to the present study. The collected data is analyzed, tabulated, interpreted and presented as under.

5. SCOPE AND LIMITATIONS

The present study covers the faculty members and the research scholars in the Gulbarga University, Gulbarga. Gulbarga University consists of 34 PostGraduate and research departments which are broadly divided into three disciplines i.e. Science and Technology Faculty (Physics, Botany, Mathematics, Computer Science, Chemistry, Material Science, Industrial Chemistry, Biochemistry, Organic Chemistry, Inorganic Chemistry etc), Social Science (Sociology, Social Work, Education, Psychology, Commerce, Management, Women's Studies, History, Political Science, Economics, Library and Information Science, etc) and Humanities (Linguistics, Kannada Literature, Kannada Folklore, Marathi, Hindi, English, Sanskrit, Urdu etc). However, the PostGraduate departments located in various PostGraduate centres of the University are excluded from the survey.

6. ANALYSIS AND INTERPRETATION

6.1 Searching of Information Sources for Information

It is noted that there are different information sources such as Electronic Books, Printed Journals, Electronic Journals, Websites and Other sources. The response of the research scholars about searching these sources is stated in Table 1.

It is observed from Table 1 that 79.85% of the research scholars refer printed journals, followed by 72.01% of the researchers refer electronic journals, 54.10% of the research scholars search general web sites, 30.60% of the research scholars search open archives/e-prints. Only 10.45% of the research scholars covered under the study refer other kinds of information sources for their information needs (search engines, FTP, Institutional Web sites, etc) and only 5.59% of the research scholars refer e-books.

Table 1 Searching of Information from Different Sources

Sl. No.	Information Sources	Respondents		%	
		Research Scholars	Faculty Members	Research Scholars	Faculty Members
1.	Electronic Books	15	18	5.59	11.92
2.	Printed Journals	214	129	79.85	85.43
3.	Electronic Journals	193	114	72.01	75.50
4.	General Web Sources	145	83	54.10	54.97
5.	Open Archives/E-prints	82	54	30.60	35.76
6.	Others	28	33	10.45	21.85

It is also observed from the above table that about 85.43% of the faculty members refer printed journals, followed by 75.50% of the faculty members refer electronic journals, 54.97% of the faculty members search general web sites, 35.76% of the faculty members search open archives/e-prints.

Only 21.85% of the faculty members covered under the study refer other kinds of information sources (search engines, FTP, Institutional Web sites, etc) for their information needs and 11.92% of faculty members refer e-books.

6.2 Knowledge and Use of Different Utilities of the Internet

Internet is a major milestone in sharing, storing and communicating the electronic information. Internet has many utilities such as search engines, portals of organizations / institutes, electronic libraries, open archives, access to institutional repositories, discussion forums, groups of special interest, web logs etc. To a question about whether the respondents use these kinds of utilities, the response is represented in Table 2.

Table 2 Use of Internet Utilities by the Faculty Members and Research Scholars

Particulars	Use the Internet Utilities				Do not use/know Internet Utilities			
	Research Scholars		Faculty Members		Research Scholars		Faculty Members	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
Search Engines	55	20.52	87	57.62	213	79.48	64	42.38
E-mail	124	46.27	77	50.99	144	53.73	74	49.01
Portals of Institutions / Organizations	49	18.28	31	20.53	219	81.72	120	79.47
Discussion Forums / Groups	28	10.45	35	23.18	240	89.55	116	76.82
Mailing List Providers	22	8.21	28	18.54	246	91.79	123	81.46
Web logs	18	6.72	15	9.93	250	93.28	136	90.07
E-prints / Open Archives / Institutional Repositories	72	26.87	46	30.46	196	73.13	105	69.54

6.3 Knowledge about UGC-INFONET Journals

It is noted that electronic resources subscribed under the UGC-INFONET consortium are the major information source for the faculty members and the research scholars in Gulbarga University Library for their information requirements. A question was asked to the research scholars about whether they knew about UGC-INFONET Consortium and Electronic Journals subscribed under the consortium. The response of the research scholars is given in Table 3.

Table 3 Knowledge about the UGC-INFONET Consortium

Particulars	Response		%	
	Research Scholars	Faculty Members	Research Scholars	Faculty Members
Know about UGC-INFONET Consortium	167	99	86.53	86.84
Do not know about UGC INFONET Consortium	26	15	13.47	13.16
Total	193	114	100	100

Among the research scholars, who responded to the survey, 86.53% (167) have responded that they know about the UGC-INFONET Consortium and the remaining 13.47% (26) Researchers do not know about the same. Among the faculty members covered under the study, 86.84% (99) of faculty members have responded that they know about the UGC-INFONET Consortium and remaining 13.16% (15) of faculty members responded that they do not know about the Consortium.

6.4 Source Through which Consortium is Known

It is noted that there are different sources such as guidance of the library professionals and teachers, advertisements or through web searching, the consortium is known to respondents. The following table has stated the responses of the respondents regarding source through which UGC-INFONET Consortium is known.

Table 4 Source through which Consortium is known

Sl. No.	Source	Respondents		%	
		Research Scholars	Faculty Members	Research Scholars	Faculty Member
1	Library Professionals	99	60	59.28	60.61
2	Teacher / Research Guide	39	--	23.35	--
3	Advertisement	7	8	4.19	8.08
4	Co-Research Scholar / Colleagues	11	12	6.59	12.12
5	Web	11	19	6.59	19.19
	Total	167	99	100	100

It is interesting to note that among the research scholars, who responded, 59.28% (99) have responded that they know the Consortium through the library professionals, followed by 23.35% (39) of the researchers know the same by their teacher and research guide, about 6.59% (11) of the research scholars know the consortium by their co-researchers and the remaining 6.59% (11) of research scholars have responded that they know the consortium by searching general web. It is also clear that 60.61% (60) of faculty members know about the Consortium through Library professionals, followed by 12.12% (12) of the faculty members know the same through their colleagues, about 8.08% (8) of faculty members know the consortium through advertisement and remaining 19.19% (19) know about the consortium through web searching.

6.5 Need and Importance of Bibliographic Databases and Portal Services

The Gulbarga University Library has subscribed about 18 databases in different subject disciplines and of which a few are available online. To know about the knowledge of the researchers on bibliographic databases such as INSPEC, Chemical Abstracts, Sociological Abstracts, ERIC database, LISA etc and Portal Services like J-Gate, a question was asked to the research scholars. The response of the researchers of the research scholars is depicted in Table 5.

Table 5 Need for and Importance of Databases and Portals

Database/Portal	Essential				Not Essential			
	Research Scholars		Faculty Members		Research Scholars		Faculty Members	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
Bibliographic Database	171	63.81	89	58.94	97	36.19	62	41.06
Portal Service	122	45.52	78	51.66	146	54.48	73	48.34

Of the research scholars responded, 63.81% (171) are stated that Bibliographic database is essential and the remaining 36.19% (97) of researchers have stated that it is not essential. Regarding Portal Service, only 45.52% (122) of research scholars have stated that portals are essential and the remaining 54.48% (146) of research scholars have stated that portals are not essential. It is noted that about 58.94% (89) of faculty members have expressed that databases are essential and the remaining 41.06% (62) have stated that databases are not essential. About portals, 51.66% (78) of the faculty members agreed that they are essential and the remaining 48.34% (73) have stated that the portals are not essential.

6.6 Need for Orientation Programme / Training Programme

It was asked to the research scholars that any training programme or orientation programme is needed to know and search the electronic resources. The response of the scholars is shown below:

Table 6 Need for Training / Orientation Programme

Particulars	Response		%	
	Research Scholars	Faculty Members	Research Scholars	Faculty Members
Needed Training / Orientation for Searching Electronic Resources	161	87	60.07	57.62
No Need for any Training / Orientation for Searching Electronic Resources	107	64	39.93	42.38
Total	268	151	100	100

It is observed from the Table 6 that 60.07% (161) of the research scholars have responded that there is a need for training or orientation programme to know searching of the e-resources and the remaining 39.93% (107) of the research scholars have responded that they are not in need of such training/orientation programme. It is noted that 57.62% (87) of the faculty members have agreed that there is a need of training for searching e-resources and the remaining 42.38% (64) of faculty members have stated that they do not need any training for the use of the e-resources.

6.7 Need for Printed Journals in Addition to Electronic Journals

There is a question as whether print format of journals is essential in addition to electronic format of the journals. The faculty members and the research scholars have responded to the question as under:

Table 7 Need for Print Journals in Addition to Electronic Journals

Particulars	Response		%	
	Research Scholars	Faculty Members	Research Scholars	Faculty Members
Print format Journals are Needed in addition to E-journals	197	83	73.51	54.97
Print format Journals Not-needed	71	68	26.49	45.03
Total	268	151	100	100

It is surprising to note that print journals are also needed in addition to electronic journals as expressed by a majority 73.51% (197) of the research scholars and only 26.49% (71) of the research scholars have stated that print format of journals is not needed. About 54.97% (83) of the faculty members covered under the study have stated that there is need for printed journals along with the electronic copies of the same and the remaining 45.03% (68) of the faculty members have responded that there is no need for printed journals.

6.8 Need for More Electronic Journals in UGC-INFONET Consortium

It was asked to the faculty members and the research scholars that whether more number of full text journals are needed in UGC-INFONET Consortium. The response of the respondents is as under:

Table 8 Need for More Number of Journals in the UGC-INFONET Consortium

Particulars	Response		%	
	Research Scholars	Faculty Members	Research Scholars	Faculty Members
More Number of Journals are Needed	174	95	64.93	62.91
More Number of Journals are Not-Needed	94	56	35.07	37.09
	268	151	100	100

It is emphasized by all the 1923 research scholars and the faculty members that there is a need for more number of journals to be added in the consortium.

6.9 Need for Other Services

The Gulbarga University Library with UGC-INFONET provides many databases and full text articles to the users. In addition to this service, there are many other services such as Current Article Alert Service, Electronic Document Supply through mail etc. The need for such services is stated in the Table 9. From the Table 9, it is clear that the faculty members and the research scholars need special services such as Current Article Alert Service, Electronic Document Supply, Browsing and such Other services. Among the research scholars covered under the study, 30.60% (82) are in need of Current Article Alert Service, 65.30% (175) have stated that they need Electronic Document Supply and 17.54% (47) research scholars have responded that they need other kinds of services also. About 40.40% (61) of faculty members have responded that they need the Current Article Alert Service, 80.79% (122) of the faculty members have stated the need for the Electronic Document Supply Service and 15.89% (24) of faculty members have stated that there is a need for such other services.

Table 9 Need for Other Services

Services	Respondents		%	
	Research Scholars	Faculty Members	Research Scholars	Faculty Members
Current Article Alert Service	82	61	30.60	40.40
Electronic Document Supply	175	122	65.30	80.79
Other Services	47	24	17.54	15.89

6.10 Satisfaction with Existing Internet Facilities

For browsing electronic journals, there is a need for sufficient internet facilities in the library. The response of the research scholars regarding internet facility is as under:

Table 10 Satisfaction With the Existing Internet Facility in the Library

Particulars	Respondents		%	
	Research Scholars	Faculty Members	Research Scholars	Faculty Members
Satisfied with existing Internet Facility	91	93	33.96	61.59
Not Satisfied with the existing Internet Facility	177	58	66.04	38.41
Total	268	151	100	100

It is surprising to note that of the research scholars responded, 66.04% (177) are not satisfied with the existing internet facility and the remaining 33.96% (91) of research scholars have responded that the internet facility is satisfactory. Regarding the satisfaction with the internet facility in the library, 61.59% (93) of the faculty members have responded that they are satisfied with the existing internet facility in the library and the remaining 38.41% (58) faculty members have stated that they are not satisfied with the existing internet facility.

6.11 Evaluation of UGC-INFONET Consortium

There is a need to evaluate the UGC-INFONET Consortium. By searching information, the users only can decide the usefulness and satisfaction of the services. The responses of research scholars on the usefulness and satisfaction are stated as under:

Table 11 Evaluation of the UGC-INFONET Consortium

Rate/Grade	Respondents		%	
	Research Scholars	Faculty Members	Research Scholars	Faculty Member
Excellent	38	32	14.18	21.19
Good	84	39	31.34	25.83
Satisfactory	104	67	38.81	44.37
Unsatisfactory (Poor)	42	13	15.67	8.61
Total	268	151	100	100

Table 11 has revealed that 14.18% (38) of the research scholars covered under the study have stated that the effectiveness of the Consortium is excellent, followed by 31.34% (84) of research scholars have rated that it is good, 38.81% (104) have rated that it is satisfactory and the remaining 15.67% (42) research scholars have stated that the effectiveness of Consortium is poor. About 21.19% (32) of the faculty members covered under the study have expressed that the UGC-INFONET Consortium is excellent followed by 25.83% (39) rated the same as good, about 44.37% (67) of the faculty members have expressed that it is satisfactory and the remaining 8.61% (13) of the faculty members have rated as unsatisfactory.

7. FINDINGS

Following findings were derived from the combined study of both the kinds of users (i.e. Faculty Members and Research Scholars).

* 73.27% of respondents search information by electronic journals.
* 81.86% of respondents search information by printed journals.
* 9.79% of respondents do not know how to use UGC-INFONET Consortium.
* 37.95% of respondents know the UGC-INFONET Consortium by Library staff members.
* 62.05% of the respondents found that bibliographical database is essential and remaining 37.95% respondents feel that it is not necessary.
* 59.19% respondents needed training or orientation programmes on how to search information under UGC-INFONET.
* 66.83% of respondents needed printed journals for their study in addition to the electronic journals.

* 64.20% respondents have stated that there is need to include more number of journals in consortium.
* 70.88% of the respondents needed Electronic Document Supply Service.
* 56.09% of the respondents are not satisfied with existing internet facility in library.
* 40.81% of respondents have stated that the effectiveness of UGC-INFONET Consortium is satisfactory followed by 29.36% of the respondents expressed it as good and 16.71% of the respondents rated the consortium as excellent.

8. SUGGESTIONS

The following suggestions are made from the present study:

* The faculty members and the research scholars should refer to more electronic journals for getting the latest information.
* The faculty members and the research scholars try to avoid printed version of books because these may be out-dated.
* The University Librarian and the staff members should conduct orientation / training programme to faculty members and research scholars how to search for information from the different kinds of electronic resources available online and databases.
* The faculty members and the research scholars should refer to electronic journals so as to keep themselves fully be aware of the latest developments in their subject discipline.
* There is a need to include more number of journals in UGC-INFONET Consortium.
* There is a need to introduce Electronic Document Supply Service by library.
* There is a need to improve the internet facility in the library.

9. CONCLUSION

From the above study, it is revealed that all the faculty members and the research scholars use the books as a major source of information and majority of the faculty members and the research scholars search for printed journals and electronic resources. UGC-INFONET Consortium is one of the popular sources through which these users are getting information for fulfilling their information needs. There is a need to train the faculty members and the research scholars how to use the electronic resources. Further, there is a need to include more number of journals in the Consortium. Users also expected other kinds of services from the Gulbarga University Library with UGC-INFONET consortium. Majority of the users have rated the Consortium as excellent, good and satisfactory. As expressed by the respondents, there is a need to improve internet facility in Gulbarga University, Gulbarga.

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INFORMATION AND SERVICES IN INDUSTRIES WITH SPECIAL REFERENCE TO GULBARGA DISTRICT, KARNATAKA: A STUDY

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Abstract

Industrial information is one of the vital factors for the success of an industrial organization. The present study was undertaken as part of a survey of selected industrial libraries in Gulbarga District, Karnataka. Twelve industries in the manufacturing sector including MSK Mill, ABB-ABL, CCI, RC, ACC, Vasavdatta Cement, SSKN, SIC, Detergents India Ltd., Gulbarga Agro-extract Gulbarga etc. were covered in the study. The user group covered persons employed in the executive cadres, technical and non-technical in these organizations. Adequate importance of this aspect of information dissemination has been given in developed countries, there is an urgent need to focus attention on meeting the information needs of users in industrial organization in developing countries.

1. INTRODUCTION

The library or information centers have been fulfilling an important role in trade and commerce, industrial setup all over the world. Information resource plays a significant role in the overall development of any nation. 'Liberalization of Indian economy has brought global competition in the market place. Thrust an export has made indian industry to strive for international quality, and timely availability of regulatory information on overseas market has become an essential for surviving in an increasingly competitive market. Requirement of timely information will be felt as never before and industrial librarians are bound to proliferate in coming years. Industrial information is one of the vital factors for success of an industrial organization [1].

The developed countries have been given the adequate importance to dissemination of information. In developing countries like India especially in Hyderabad-Karnataka region that to be Gulbarga district, there is an urgent need to focus attention on meeting the information needs of industrial users in industrial organizations. The importance of industrial libraries can be reinforced by the challenges posed by the competitive market for its every existence. Industrial information centre needs information encompasses several categories of information viz. scientific, technical, engineering, socio-economic, trade and commerce, economics, educational, legal and management. Management of industrial organization is becoming increasing aware of in fact, that the knowledge is commodity and information services are the marketing of knowledge. An understanding of the working industrial libraries is essential for an aspiring professional. The paper makes an effort to bring out the existing condition of industrial libraries in Gulbarga district and attempt has been made to give some appropriate suggestions for future developments [2].

2. NEED FOR THE STUDY

A survey of literature reveals that industrial information is one of the important factors for the success of an industrial organization. Moreover concentration has been given for dissemination of industrial information in developed countries.

In Gulbarga district which will come under the Hyderabad-Karnataka region, there is an urgent need for industrial development. Most of the industries in the district do not have proper information facilities and services. Industrial libraries have to play its dual role to

strength and weakness of industrial libraries in Hyderabad-Karnataka region. In Gulbarga district there is an urgent need of in-depth study of industrial libraries.

The major areas covered by this study include the origin of industrial libraries, organizational structure, number of clienteles, various aspects of collection including kinds, size, budget allocation, library staff and kinds of services provided. The study reveals that the user requirement and demands of information and services in industrial setup, about library committee, management support, application of modern information and communication technology, educational background and technical skills of librarians. Library operation and services in multi unit companies, the use of online and database systems for information retrieval and future plans.

3. OBJECTIVES OF THE STUDY

The following are the main objectives of the present study.

i. To know the chronological establishment of industrial libraries in Gulbarga district.
ii. To examine the nature of work of employees in the industry.
iii. To study the staff pattern of the libraries .
iv. To evaluate the type of management authority of the industry.
v. To examine the annual budget of the industrial library.
vi. To know the information seeking pattern of scientific periodicals.
vii. To know the methods of preservation of information in industrial setup.
viii. To examine information services provided in industrial libraries.
ix. To find out practical difficulties and suggest suitable remedies for improvement of facilities and services to attain future needs of users

4. METHODOLOGY

Research in any discipline is interlinked with methodology. Methodology involves various tools, techniques and approaches. Since the present study is concentrating on industrial libraries in Gulbarga district under the geographical region of Hyderabad-Karnataka, the data has collected for research work from primary and secondary sources. Primary sources data includes the questionnaire, interview schedule, observation and opinion of experts. The secondary sources are collected from various books, journals, annual reports, manuals, conference proceedings, websites etc. The study is based on both primary and secondary data. The techniques used for data collection is to ensure a sound research work.

The following techniques have been used for data collection:

✳ Questionnaire
✳ Interview
✳ Observation and
✳ Opinion of Experts

The collected data by various sources have been analysed, tabulated and graphed, so as to represent the result of present work in scientific and systematic manner.

5. BRIEF HISTORY OF THE GULBARGA DISTRICT

Gulbarga district is located in the northeastern sector of Karnataka. On the northwest, for a short stretch, the district shares its borders with Solapur, and Osmanabad districts of Maharashtra and on the east the districts of Medak and Mahaboobanagar of Andhra Pradesh bound it. On the other three sides, territories belonging to Karnataka state itself surround the district. They have known as Bidar, Bijapur and Raichur districts.

Gulbarga is locally known as Korgi and its muslimised from Kalburgi. Abdur Razzak makes a reference while describing the extent of the Vijaya Nagar Empire as extending up to extremities of the country Kalburgi. The term Kalburgi in Kannada connotes a stony land or a heap of stones and perhaps bears references to the nature of the landscape and the soil of this region. The term Gulbarga perhaps signifies a pace of beauty, like a flower with a leaf. It is also possible that the name Gulbarga is associated with the name of one of its earlier rulers namely Raja Gulchand, according to the historians the fort at Gulbarga was originally built by this raja and was subsequently strengthened by Ala-ud-din Bhamani. Total area of the district is 16224 sq.km. The district head quarter is located at Gulbarga city [3]. Total population of the district according to 2001 census was 31,24,858, comprising of 15,91,379 male and 15,33,479 female. The rural population of the district was 22,76,935 and urban population was 8, 47,923 [4].

6. DATA ANALYSIS

Table 1Chronological Establishment of Industrial Libraries in Gulbarga District

Sl.No.	Name of the Industry	Year of Establishment of Industry / Firm	Year of Establishment of Library
1	M.S.K. Mill, Gulbarga	1884	1884
2	ABB-ABLLtd , Shahabad	1967	1970
3	Association Cement Co., Wadi	1968	1968
4	Cement Corporation of India Ltd., Kurkunta	1972	1972
5	Rajashree Cement, Adityanagar Malkhed	1983	1985
6	Shakari Sakkare Karkhane, Niyamitha (Boosnoor)	1983	1989
7	Karnataka Cement Ltd, Chitapur	1985	1987
8	Vasavadatta Cement, Sedam	1986	1983
9	Bangalore Cement Pvt. Ltd, Vajjal (Shorapur)	1986	1988
10	South India Cements, Malkhed	1987	1989
11	Detergemts India Ltd, Taj-Sultanpur (Gulbarga)	1993	1993
12	Gulbarga Agro-Extract, Gulbarga.	1995	1996

In Gulbarga district the first industry Mahboob Shahi Kulburga Mill (M.S.K.Mill) was established in the year 1884 in Gulbarga city. That reality of M.S.K.Mill came into existence between 1884 and 1893. The establishment of other industry in the district had been only after a long gap of 83 years; during 1964 to 1973 three (25%) industries were established by namely ABB-ABL Ltd. Shahabad in 1967, Associate Cement Co., Wadi in 1968 and Cement Corporation of India Ltd., Kurkunta which set up in 1972.

During 1974 to 1983, two more industries (16.67%) were established those were Rajashree Cement Adityanagar Malkhed in 1983 and Sahakari Sakkare Karkhane Niyamitha, Boosnoor in the year 1983. Five industries were founded during 1984-1993 (41.67%), which was Karnataka Cement Ltd., Chitapur during 1985, Vasavadatta Cements, Sedam during 1986, Bangalore Cements Private Ltd., Vajjal (Shorapur) during 1987, South India Cements Malkhed during 1987 and Detergent India Ltd., during 1993 came into existence. But only one industry (8.33%) was set up after 1994 to 1999 that was Gulbarga Agro-Extract Gulbarga started during 1995.

In fact, majority (58.33%) of manufacturing units/firms in Gulbarga district belongs to Cement manufacturing industries are occupying highest priority. This is followed by only one (8.33%) yarn and cloth industry, and one (8.33%) detergent soap and powder industry and one (8.33%) steel heavy engineering unit. However, one solvent plant: oil industry (8.33%) and one (8.33%) sugar, malaise-manufacturing unit exist. These units are located at different taluka places in Gulbarga district.

The Table 2 shows the work force/employees in the different industrial units as different categories of work forces. The study extracts to the existing condition and future requirements of the industrial libraries in Gulbarga district. In fact, the library/TIC staff are very important factor to evaluate the information resource and their services to the industrial clienteles.

Table 3 shows that one library (8.33%) managed by the librarian and he / she has professional qualification in Library and Information Science. 10 (83.33%) industrial libraries are managed by non-professionals or in-charge librarian. However, one library (8.33%) does not mention whether or not it has any type of library professionals in library.

Table 2 Employees Working in the Industry

Sl. No.	Name of the Industry	Executive	Technical	Non-Technical	Others	Total	%
1	M.S.K. Mill, Gulbarga	12	12	66	786	874	9.79
2	ABB-ABLLtd , Shahabad	100	100	100	-	1050	11.70
3	Association Cement Co., Wadi	123	1000	762	100	1995	22.24
4	Cement Corporation of India Ltd., Kurkunta	35	200	300	15	550	6.13
5	Rajashree Cement, Adityanagar Malkhed	150	900	475	100	1625	18.11
6	Shakari Sakkare Karkhane, Niyamitha (Boosnoor)	08	293	246	-	544	6.06
7	Karnataka Cement Ltd	25	200	275	-	500	5.57
8	Vasavadatta Cement	50	343	370	-	750	8.36
9	Bangalore Cement Pvt. Ltd	18	125	185	50	378	4.21
10	South India Cements	15	140	190	50	395	4.40
11	Detergemts India Ltd	02	07	60	30	100	1.11
12	Gulbarga Agro-Extract Gulbarga.	05	105	100	-	210	2.32
	Total	543	3425	3129	1141	8927	100

Table 3 Staff Pattern of the Library

Sl. No.	Designation	No. of Respondents	%
1	Librarian	1	8.33
2	Asst. Librarian	-	-
3	Documentation Officer	-	-
4	Information Officer	-	-
5	Information Scientist	-	-
6	Computer Programmer	-	-
7	Data Entry Specialist	-	-
8	Classifier	-	-
9	Cataloguer	-	-
10	Non-Professional or in-charge, Library	10	83.33
11	Not Mentioned	1	8.33

Table 4 Type of Management Authority of the Industry

Sl. No.	Type of Management	No. of Library	%
1	Central Government	2	16.67
2	State Government	1	8.33
3	Local Bodies	1	8.33
4	Any Other i. Private Ltd ii. Public Ltd iii. Multi-National Group	 6 1 1	 50.00 8.33 8.33
		12	100

An attempt has been made to conduct a detail study about 12 industrial libraries in the district. Table 4 reveals that out of 12 respondent industries, 2 industries (16%) were managed by the central government and 6 of them (50%) were run by private limited, which occupying the highest priority of management authority.

It shows clear picture that only one (8.33%) industry is running by the state government, one from the public limited and one (8.33%) by the multinational groups. However, the maximum number of industrial managements 6(50%) are owned by the private limited companies.

Table 5 Annual Budget of the Industrial Library/TIC

Sl. No.	Annual Budget (Rs.)	No. of Industrial Libraries	%
1	30000-49000	6	50.00
2	50000-69000	2	16.07
3	70000-89000	1	8.33
4	90000-109000	-	-
5	110000-129000	2	16.67
6	Not mentioned	1	8.33
		12	100

In fact, the budget is very important factor for library/technical information center in industrial entrepreneur's environment. Of course, there is more financial requirement in specialized libraries like industrial library and R&D institutes. But in this study, Table 5 reveals that 6 (50%) industrial libraries spend between Rs. 30,000/- to 40,000/- per annum.

Considering the library budget, two Libraries (16.33%) have budget amount of Rs. 50,000/- to 69,000/- and two libraries have alloted the budget of Rs. 1,10,000/- to 1,29,000/-. One library (8.33%) alloted the budget of Rs.70,000/- to 89,000/- and the remaining one industrial library has not mentioned its budget specification.

Table 6 Methods of Seeking Information of Scientific Periodicals

Sl.No.	Method of Searching Information	No. of Industrial Libraries	%
1	By Consulting Content Pages, By Consulting Cumulative Index	9	75.00
	By Consulting Content Pages, By Consulting Cumulative Index	1	8.33
	By Consulting Content Pages, By Scanning Through the Periodicals and By Consulting Cumulative Index	1	8.33
2	Not Mentioned	1	8.33
	Total	12	100

In fact the methods of seeking information will vary from different categories of clienteles which may be the technical or non-technical scientists. As per Table 6 nine industrial libraries/TIC (75%) have the methods of consulting content pages and scanning the periodicals for the acquisition of information. One library (8.33%) users search information from scientific periodicals through the

indexing sources and by consulting content pages. Another one (8.33%) library clienteles search information by consulting content pages and cumulative index and by going through the periodicals. The remaining one (8.33%) industrial library/TIC has not mentioned any types of method for seeking information.

Table 7 Preservation of Different Kinds of Information

Sl.No.	Kinds of Information	No. of Libraries / TIC	%
1	Development Information and Technological Information	1	8.33
	Technological Information, and Socio-Economic Impact on Employment Generation	2	16.67
	Technological Information, Socio-Economic Impact on Employment Generation, Regulatory Information and Marketing Information	2	16.67
	Technological Information, Regulatory Information and Marketing Information	2	16.67
	Development Information, Technological Information, Regulatory Information and Marketing Information	2	16.67
	Development Information, Technological Information, Socio-Economic Impact on Employment Generation, Regulatory Information and Marketing Information	1	8.33
	Technological Information, Socio-Economic Impact on Employment Generation and Marketing Information	1	8.33
2	Not mentioned	1	8.33
	Total	12	100

The industrial libraries should meet the information requirement of the parent organization/industry/firm. The industrial library/TIC to collect the required and latest information, then organize and disseminate to their user groups. The information or resource, which is collected and stored in the library, is valuable only if it is properly utilized by their clienteles. Table 7 reflects the holdings of different kinds of information in industrial libraries in Gulbarga district. Two libraries (16.67%) possess technological and marketing information while 9 (75%) have different kinds of information in combination of two or more modes. They use development information, technological information, and socio-economic impact on employment generation, regulatory information and marketing information. But one library (8.33%) does not mention the types of information it uses in its industrial library.

To make the libraries effective and useful and to exploit the preserved information properly, the librarians need to be well informed of the latest developments in the universe of knowledge as well as the requirements of the parent organizations and the users community. Industrial information plays a vital role in effective industrial management.

Industrial libraries have to play a major role as effective centers of dissemination of knowledge; they act as channels for information transmissions with a variety of information services to support industrial management. This has lead to an increasing interest in the functioning of industrial libraries.

Table 8 Services Provided in Industrial Libraries in Gulbarga District

Sl.No.	Name of the Industry/Firms	CAS	SDI	Indexing Service	Abstracting Service	Retro-spective Service	Translation Service	Repro-graphic Service	News Clipping	Online Service	Inter Lib. Loan
1	M.S.K Mill Gulbarga	-	-	-	-	-	-	-	-	-	-
2	ABB-ABL Ltd. Shahabad	+	+	+	-	-	-	-	+	-	-
3	Associated Cement Co. Wadi	+	+	+	+	-	+	-	+	-	-
4	Cement Corp. of. India Ltd. Kurkunta	+	-	-	-	-	-	-	+	-	-
5	Rajashree Cements Adityanagar, Malkhed	+	-	-	-	-	-	-	+	+	-
6	Sahakari Sakkare Karkhane, Niyamitha	+	-	-	-	-	-	-	+	-	-
7	Karnataka Cement Ltd. Chitapur	-	-	-	-	-	-	-	+	-	-
8	Vasavadatta Cement Sedam	-	-	-	-	-	-	+	+	-	-
9	Bangalore Cement Pvt.Ltd. (Shorapur)	+	-	-	-	-	-	+	-	-	-
10	South India Cements	+	-	-	-	-	-	-	+	-	-
11	Detergents India	+	+	-	-	+	+	-	+	-	-

Note : In the above table + sign indicates that the above services are provided and the – sign indicates that the particular services are not provided in the industrial libraries .

7. SOURCES OF INFORMATION

It is essential for any industrial librarian to be aware of diverse resources that one has to use from time to time to meet the peculiar information needs that arise in industries. There is a large number of industrial information source that many not necessarily be used in one company only. The major information sources relevant to an industrial activity may be grouped as follows.

Internal Sources →
- Documents
- Personnel (Information Gate Keepers / Opinion leaders)

External Sources →
- Documents : Monographs, Periodicals, and Official Publication Catalogues.
- Personal : Information Gatekeepers, Experts, Consultants.
- Organizations : Research centers, Trade Association, Consultancy Firms, Universities, International Organizations etc.
- Others : Visits, Exhibitions, Workshops, Trade, Industrial fairs and Conferences etc.
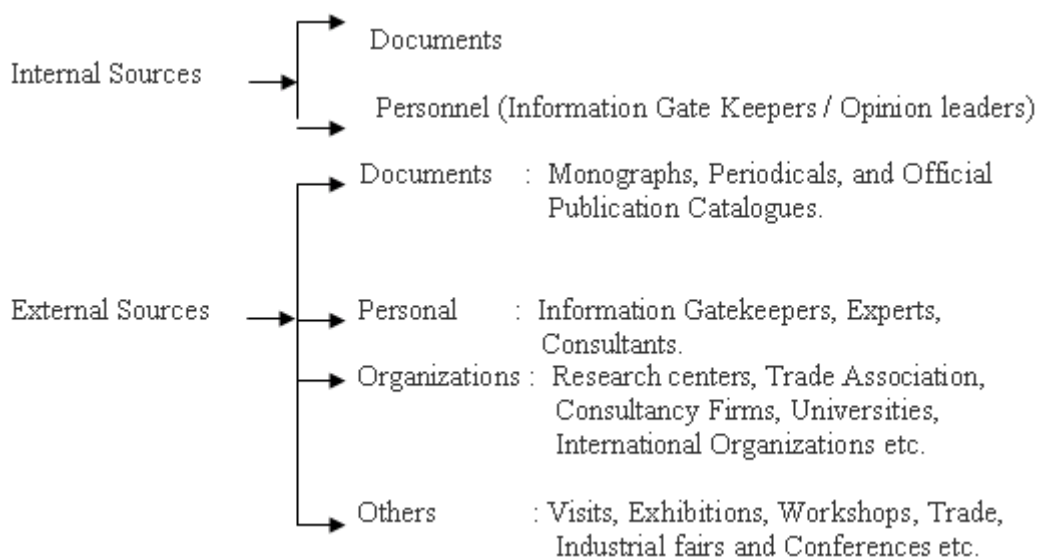
Fig. 1 Sources of information

Industrial user may have access to these sources either by conviction means through booksellers, publishers, libraries, or by using modern information facilities like computers and telecommunication networks. Industrial library should provide timely, accurate and appropriate information to the organization to succeed in its technical and business operation [5].

8. CONCLUSIONS

From the analysis, it is evident that the overall scenario of the industrial libraries in Gulbarga district is not a conducive environment, in fact it presents a sad and pathetic condition. It is felt that industrial information is required in order to achieve real industrial development and growth. Information services are hardly available in our industrial establishments. To correct this anomaly is a challenge that required action and not sermons. Action is required to bring out positive attitudes towards industrial information to establish the required information services.

Information professionals and other appropriate bodies of government and non-government, should indeed initiate and propagate the required action that would lead to establishment of widespread industrial information services in the district and as well as the country [6]. The Government of India has a leading role to play in an industrial information development. The Ministry of Industries, Trade, and Commerce has overall responsibility for industrial policy formulation and implementation needs to establish a giant industrial information center as a matter of urgency. The following remedial measures may be taken to improve the existing deplorable conditions of the industrial libraries in Gulbarga district.

* Effective dissemination of information is the main objectives of any industrial library through all possible means. Once the information has been acquired and procured its existence is to be brought to the attention of appropriate users so that it can be utilized productively. Further, information resources should generate and stimulate the use of the service provided by the library to meet the information needs of the users.
* The collection of industrial information should be comprehensively on a worldwide scale, because of an industrial library will be able to fulfill the needs and requirements of their user community and support the parent organizations. However, well qualified

professionals, skilled in the field of LIS, technical staff are expected to perform a wide range of services in library.

* At least 10-20 percent of the industrial total budget allocation should be year-marked for library budget so that it can play the efficient role of a resource center for information collection, processing, storage, retrieval and transfer to the users with least possible delay as and when they are needed. Further, library should be kept under planned budget items so that steady increase in subscription price of journals may not at least jeopardize the purchase of existing scientific periodicals.
* To attract scholarly young people with adequate subject background, research aptitude and thorough training in scientific documentation, the status; salary and service conditions of the librarian should be made on par with the working scientists of the organization. This will not only help to minimize the prevailing communication gap between the users and the library personnel. But it will help in establishing a fruitful dialogue between them which in turn, will assist the librarian to identify the actual information needs of the users.
* To overcome the financial constraint, every research and industrial library should co-operate at least with their local counterparts and form some sort of consortium to share their resources with one another and try to avoid duplicate purchase of costly library materials. Further, wherever possible co-operative acquisition policy and inter-library loan facilities should be initiated with right earnest to make maximal use of the limited library budget.
* Regular in-service training may be arranged by deputing library personnel to INSDOC, DESIDOC, and DRTC etc, to make them conversant with the modern library technology under man-power development programme.
* Regular seminars and workshops may be arranged as a part of users education and orientation programme for technical and non-technical staff and scientists of the parent organization.
* Statistics of daily used materials may be maintained regularly to assess the usefulness of various library documents. This will facilitate in streamlining acquisition and weeding policy of the library.

- With the advent of low cost, mini and microcomputers are very essential in every research and industrial library to convert automated library or virtual information center from manual library systems. It saves the time of the users and by this mechanization can provide its various library services for quick and accurate dissemination of knowledge.
- To cope with the demand of the users for xerox copies of articles available within the library provision should be made for modern reprographic equipment.
- Every industrial library should have its own library building for housing the books and non-book materials. It should be located where the future expansion and growth is possible. Industrial libraries should gradually take inititative to procure journals, microfiche, slides and printer as and when demanded by the users. Usefulness of other modern micrographic techniques may also be thought of to combat space problem.
- The materials of the industrial library should be of the requisite size, scope and quality so as to include textbooks and multiple copies of collateral reading materials, journals and other materials.
- The industrial library should be open for longer hours at least 15 hours a day and on holidays. So that it will help the users to make use of the library more effectively.
- Research and industrial libraries should maintain close co-operation and direct telecommunication linkage with the national apex body and sectoral information centers of the national information system for science and technology in order to get immediate help and co-operation from them to satisfy the information requirements of the local users.
- To maintain uniformity, industrial and research libraries try to follow the same library standards evolved by the national body and also to use common code of practices for library activities in order to help the national center in large scale data handling while creating the national databases.
- Provision of various industrial information services, such as SDI, Transaction, CAS, current contents, Abstracting and Indexing services.

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A BIBLIOMETRIC ANALYSIS OF SURVEYING ENGINEERING LITERATURE

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Abstract

Bibliometric studies help to identify the pattern of publications, favoured authorship, citation and / or secondary journal coverage, for such features can provide an insight into the dynamics of the subject under consideration and lead to a better organization of literature. In most cases, bibliometric studies have been carried out on well- established subject areas. In this bibliometric study the Journal of Surveying Engineering has been selected as the source journal and found that there is a need to encourage research in the areas of Imaging Techniques, Aerial Photography, Quality Country, and Aerials Surveys.

Keywords: *Bibliometric Study, Surveying Engineering*

1. INTRODUCTION

Bibliometrics as a sub-discipline in Information Science is known to have been applied by Cole and Easel in 1917 [1]. A subsequent study was conducted by Holmen in 1923 [2]. Both these studies were designated " Statistical Bibliography". The term Bolometric was perhaps first coined by Protected (1969) [3]. However, it may be noted that the term barometry was coined by Dr. S.R. Ranganathan in 1948 during a discussion in the ASLIP conference held in Lamington and the terms was used more or less in the same senses as Bibliometric in India for quite some time. Other terms such as Naukometriji, Scientometrics (used primarily in the USSR), Informatics and Libromatrics are also widely used. Over past seventy years, a sizeable body of literature dealing with bibliometrics has developed.

Bibliometric distribution to measure the scattering of articles over different journal, the frequency of occurrence words in text and the productivity of authors in items of the scientific papers produced by them. These aspects of bibliometric studies have been codified and known as Bradford's law of dealing with the scattering of articles over different journals [4]. Zipfs law is concerned with the frequency occurrence of words in a text [5]. Lotka's law of Scientific Productivity [6].

Bibliometric studies have been gaining momentum in the field of Information Science in recent years. Bibliometric studies have shown that all items of published information are not of equal importance. Generally high quality output can reflect their impact on the basis of content and utility.

The purpose of bibliometric studies is to identify core literature which is potentially useful literature in any discipline. It reflects the quality and worth of the publication. Ranking of journals is an important factor in bibliometric analysis. It highlights the importance and wider utility of some journals in a discipline as also the diminishing importance of some. It helps researchers identity potential journals in their discipline.

Ranking of journals is an important factor in bibliometric analysis because ranking enable one to identity core journals in a specific subject. It aims to identity the most relevant journals according to its productivity. It could be observed that the more journal is cited, the more popular it becomes and it reflects the importance of circulation .

2. SOURCE JOURNAL

Journal of Surveying Engineering has been selected as the source journal. It is a quarterly Surveying Engineering research journal of American Society of Civil

Engineering (ASCE). It contains research papers in English dealing with all aspects of fundamental research and applied research in Surveying Engineering. It encompassed the fields of Surveying Engineering such as Global positioning system, Topographic surveys, Remote sensing. Geodetic surveys, Aerial surveys. Quality control, Aerial Photography, and Imaging Techniques.

So far, the journal has published 132 volumes, but to determine the publication pattern, the number of contribution published during the last ten years 1997-2006 (i.e., from Vol.123 to 132) were large enough.

3. OBJECTIVES OF THE STUDY

The objectives of the present study are listed below:

i. To determine the chronological wise distribution of articles/publications.
ii. To observe the authorship pattern.
iii. To identify the proportion of single and multi-authored publication and the degree of collaboration in Surveying Engineering research publications.
iv. To identify the core journals in the field of Surveying Engineering and to test the suitability of Branford's law of scattering.
v. To find out the form-wise distribution of cited documents.
vi. To know the subject-wise distributions of articles in Surveying Engineering research.
vii. To find the pattern of self-citation.

4. METHODOLOGY

For this study the volumes 123-132 (1997-2006) were taken into consideration. Data were collected with adequate detail such as title of article, name of the contributors, their address and affiliations details for each article. At the same time, the reference appended by the respective authors at the end of each article were also counted and tabulated. Finally, all the collected data were analysed for making observations.

5. ANALYSIS AND INTERPRETATION

Table 1 shows that year wise distribution of articles appeared in Journal of Surveying Engineering. 162 articles were published from 1997 to 2006. A maximum number of 24 (14.81) articles were published in the year 2006 and minimum number of 12 (7.41) articles were published in the year of 1994, 1995 and 1999. It could be seen clearly from the above discussion a maximum number of 24 (14.81) articles were published in the volume of 132.

Table 1 Year-wise Distribution of Articles

Vol. No	Year	No of Publication / Articles	%
123	1997	12	7.41
124	1998	12	7.41
125	1999	16	9.88
126	2000	14	8.64
127	2001	14	8.64
128	2002	12	7.41
129	2003	18	11.11
130	2004	20	12.34
131	2005	20	12.34
132	2006	24	14.81
	Total	162	100

Table 2 shows the authorship pattern of publication. among the total number of 162 articles, more than three authors publication (37.65%) occupy first position , three authors publications (29.63%) occupy second position, two authors publication (17.90%) occupy third position and single author (14.81%) occupy the fourth position .

Table 2 Authorship Pattern

No. of Author	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total	%
Single Author	2	2	2	2	3	2	3	4	2	2	24	14.81
Two Authors	03	2	3	3	2	3	3	2	3	4	29	17.90
Three Authors	03	3	5	4	4	3	5	6	7	8	48	29.63
More than Three Authors	04	04	6	5	5	4	7	8	8	10	61	37.65
Total	12	12	16	14	14	12	18	20	20	24	162	100

It could be seen clearly from the above discussion, that more than three authors contributed publication are more when compared with other authors contributed publication and it is also cleared that Survey Engineering research take collective participation in research and problem solving activities and it has proved that single authored papers have declining trend and thereby multi-authored papers have an increasing performance.

Table 3 Single Vs Multi – Author Articles in Survey Engineering Research

Year	Single Author Contribution		Multi Authored Contribution		Total
	Articles	%	Articles	%	
1997-2001	11	6.76	56	34.57	67
2002-2006	14	8.64	81	50.00	95
Total	25	15.43	137	84.57	162

Table 3 shows that the distribution of single and multi authored articles has published in the field of Survey Engineering. It is found that 15.43 percentage of the articles are published by single authors and 84.57 percentage of the articles are by multi-authors. It is evident from the table that single author contributions; are very less in number compared to multi-authors papers. It could be learnt from the above discussion that the percentage of single authored papers is less than that of multi-authored papers.

Table 4 Degree of Collaboration in Survey Engineering Research Output

Year	Degree of Collaboration
1997-2001	0.83
2002-2006	0.85
	0.84

It is inferred from the Table 4 that the aggregate level of the degree of collaboration is 0.84 percent. The period wise analysis indicate that the level is more or less equal in both first period 1997-2001 and second period 2002-2006. This brings out clearly the level of collaborative research in Survey Engineering Research output is maintained 0.84.

Table 5 Form-wise Distribution of Cited Documents

Sl.No.	Forms of Documents	Total Citations	%
1	Journal	2096	86.61
2	Books	132	5.45
3	Conference proceedings	130	5.37
4	Theses	28	1.16
5	Project Report	12	0.50
6	Year book	10	0.41
7	Monograph	7	0.29
8	Hand book	5	0.21
	Total	2420	100

Table 5 shows that form-wise distribution of cited documents. Among the total of 2420 citations, journals have received 2096 citations (86.61%) whereas books received by only 132 citations (5.45%) and conference proceeding received 130 citations (5.37%) At the same time other documents such as Theses, Projects reports, Year book, Monograph and Hand book reviews have 62 citations only.

It could be seen clearly from the above discussion, journals citation (86.61%) have occupied first position when compared to other forms of citations.

Table 6 Chronological Contribution of Citations

Sl.No.	Vol. No.	Year	No. of Citation	%	Cumulative No. of Citations	%
1	123	1997	250	10.33	250	10.33
2	124	1998	242	10.00	492	20.33
3	125	1999	240	9.92	732	30.25
4	126	2000	238	9.83	970	40.08
5	127	2001	238	9.83	1208	49.91
6	128	2002	236	9.75	1444	59.66
7	129	2003	235	9.71	1679	69.37
8	130	2004	231	9.55	1910	78.92
9	131	2005	254	10.50	2164	89.42
10	132	2006	256	10.57	2420	100

Table 6 indicates the details of chronological contribution of citations. During the period of ten years study, i.e., 1997 to 2006, a total of 2420 citations are appended to 162 articles/publications. The data reveals that more number of citations have appeared in the year 2006 which is 256 citations i.e., 10.57% of total number of citations contributions, followed by 254 and 250 citations (10.50% and 10.33%) appeared in the year 2005 and 1997 respectively. It is also indicated that these years the number of articles published in the journals are also increased compared to other years.

Table 7 shows institution-wise distribution of articles published in Journal of Surveying Engineering.

The institutions are divided in to four categories viz., 1. University 2. Research Institutions 3. Colleges and 4. Polytechnics. Among 162 articles published during 1997 to 2006 in the source journal, University published 102 articles. That shows 62.96% of the total output Research Institution published 28 articles (17.28%), College published 22 articles, which is 13.58% of the total publication. Polytechnics published 10 articles (6.17%).

It is clear from the table that University occupies first position and polytechnics, the last position.

Table 7 Institution -wise Distribution of Articles

Sl. No	Institution	No. of Article	%
1	University	102	62.96
2	Research Institution	28	17.28
3	College	22	13.58
4	Polytechnics	10	6.17
	Total	162	100

Table 8 Countries-wise Distribution of Articles

Sl. No.	Country	Number of Self Article	%
1	USA	30	18.52
2	China	28	17.28
3	Taiwan	21	12.96
4	Thailand	18	11.11
5	Hong Kong	16	9.88
6	Brazil	14	8.64
7	Greece	10	6.17
8	Canada	8	4.94
9	Turkey	7	4.32
10	UAE	6	3.70
11	India	4	2.47
Total		162	100

Table 8 shows the country-wise distribution of article publication in "Journal of Surveying Engineering" during the study period 1997 to 2006.

In the country-wise distribution, USA occupy first position and share its contribution to 30 articles (18.52%) of the total publications.

China is next in order and share 17.28% with 28 articles. Taiwan is the third in order and share its contribution with 21 articles i.e., 12.96% of total output. Thailand, Hong Kong, Brazil, Greece, Canada. Turkey, UAE and India contributed 18,16,14,10,8,7,6 and 4 respectively. It is clear from the table that first three countries share 50% of the total output and occupy first, second and third position.

6. CONCLUSION

The findings of the present study found some measures to be improved on survey research. It is concluded that there is a need to encourage research in the areas of Imaging Techniques, Aerial photography, Quality country, and Aerials surveys.

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USE OF DIGITAL RESOURCES AMONG ENGINEERING PROFESSIONALS IN CUDDALORE DISTRICT, TAMIL NADU

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Abstracts

This paper describes the use of Digital Library resources by the engineering professionals in the engineering colleges at Cuddalore district. The following methods were used to collect the data for the investigation (a) Questionnaire method (b) Semi structured interviews with the librarians (c) Observational visits to the library. The data collected were analysed and inferences were arrived using standard statistical methods. The findings of this study would assist the internet browsers to improve their level.

Keywords: Digital Resources, Engineering Professionals

1. INTRODUCTION

The information has been the basic need of the society always but at no point of time, it has played such a crucial role as it is playing today. A rapid change world, information needs of learners and knowledge seekers have met plethora of sources. The digital resources available in a library playing prominent roles in facilitating access to the required information to the user are an expediency manner. Further one need not go to the library to make use of print formats as the digital resources can be made use by any user through online access via networks or authentication methods at any time by comfortably sitting at their office. As a result of these complexities, information technologies have marked ahead concurrently at a rapid rate to facilitate dissemination of information in digitized media. Libraries are undergoing rapid changes due to the developments in Information Communication Technology and paper based resources are giving way to electronic resources.

2. SCOPE AND LIMITATION

For the successful conduct of any research study and meaningful inferences, an appropriate methodology is indispensable. The main focus of the present study is to analyse the use of digital library resources by the engineers in engineering college in Cuddalore district.

3. LITERATURE SURVEY

Perpetua S. Dadzie has investigated the use of electronic resources, the level of use, the type of information accessed and the effectiveness of the information communication tools for information research by students and faculty of Ashesi University, Ghana, [1]. Stella E. Igun has identified to the challenges faced by the libraries and information centre in Africa in the establishment of electronic publishing [2]. Apart from the information source that can be obtained through the internet and downloaded online, the actual acquisition of electronic books is still not possible. Kumbar Mallinath and Lohar M S, focused the students attitudes to use the digital resources and services. It reveales that the majority of the students are using the digital resources frequently [3].

4. OBJECTIVES

i.   To assess the amount of familiarity frequency in the use of the digital resources by the engineers.
ii. To identify the frequency of using the digital resources by the faculty members and the students of the three engineering colleges in Cuddalore district.
iii. To know the gender-wise utilization of the digital resources.
iv. To identify the purpose of utilization of the digital resources of the faculty and the students.

v. To know the adequacy of information in digital resources.

5. METHODOLOGY AND DATA COLLECTION

The study is mainly based on the primary data collected from the faculty members and the students of the engineering colleges. Besides, the secondary data have been collected from the sources available from the college and the library. The primary data required for this study were collected through a well tested questionnaire. The well tested questionnaire was distributed to the faculty members and the students of engineering colleges in the Cuddalore district. Sufficient time was given to the respondents to furnish the information. Suggestions to improve the library service were also collected from the respondents. The data collected through questionnaire was analysed with simple percentage and average.

6. ANALYSIS AND INTERPRETATION

The present study tries to highlight the use of digital resources by the engineering professionals in Cuddalore district. The results of the analysis of the data collected from the users of the three engineering college libraries viz. Krishnasamy College of Engineering & Technology, Sri Jayaram Engineering College and Dr.Navalar Nedunchezhiyan College of Engineering.

Table 1 Familiarities with Digital Resources

Use	Staff		Students	
	No. of Staff	%	No. of Student	%
Familiarities	35	71.42	90	63.82
Not Familiar	14	28.58	51	36.18
Total	49	100	141	100

n=190

Table 1 indicates the familiarity with digital resources by the engineering professionals in Cuddalore district. Out of 190 respondents only 35 (71.42%) of faculty members are familiar with digital resources. Further 111 (63.82%) of students of the engineering colleges, they are very familiar in the use of digital resources.

Table 2 Sex-wise Distribution of Respondents

Sex	Staff		Students	
	No. of Staff	%	No. of Student	%
Male	29	59.2	111	78.73
Female	20	40.8	30	21.27
Total	49	100	141	100

From the Table 2 it is observed that the sample population consists of 190 respondents. Among the respondents, 49 (25.8%) are staff members and 141 (74.2%) are students. Out of 49 staff members 59.2% are male and 40.8% are female. Among the students category, 78.73% are male and 21.27% are female students.

Table 3 indicates the frequency of library visit by the respondents in terms of daily, several times a week, once in a week, once in a month and rarely are tabulated in the above table. It is evident from the table that in all the three colleges the respondents used to visit the library several times a week when compared to other options. 34 respondents (43.0%) from Krishnasamy College of Engineering & Technology, 35 (51.5%) respondents from Sri Jayaram Engineering College and 22 (51.3%) respondents from Dr. Navalar Nedunchezhian College of Engineering are used to visit the library several times a week.

Table 4 shows the purpose for which the respondents are using digital resources. Among the staff members, the major purpose of using digital resources were found to be online database. Out of 49 respondents, 19 (38.7%) visit the library to utilize the online database, 18 (36.7%) of the faculty members use the digital library to view e-mail. Majority of the students (34%) use the digital resources for CD-ROM databases, 37(26.5%) of them use online journals and 32 (22.7%) repondents use the internet .

Table 3 Frequency of Library Visit

Frequency	KCET		Jayaram		Navalar		Total
	Number	%	Number	%	Number	%	
Daily	30	37.9	20	29.4	18	41.8	68
Several times in a Week	34	43.0	35	51.5	22	51.3	91
Once / Week	8	10.2	6	8.8	3	6.9	17
Once / Month	5	6.4	4	5.9	-	-	9
Rarely	2	2.5	3	4.4	-	-	5
Total	79	100	68	100	43	100	190

Table 4 Purpose of Using the Digital Resources

Sl. No.	Purpose	Staff		Students	
		Number	%	Number	%
1	CD-ROM Database	7	14.3	48	34.0
2	Internet	-	-	32	22.7
3	E-mail	18	36.7	7	4.9
4	Online Database	19	38.7	5	3.5
5	Online Journals	-	-	37	26.5
6	Search Engines	5	10.3	12	8.5
	Total	49	100	141	100

Table 5 Purpose of Visit to Use Digital Resources

SI. No.	Purpose	Staff		Students	
		Number	%	Number	%
1	To Communicate	6	12.24	44	31.20
2	For project work	-	-	32	22.69
3	To Collect General Knowledge	20	40.82	6	4.24
4	To find Subject information	17	34.70	5	3.54
5	To prepare assignments	-	-	40	28.35
6	Career development	6	12.24	14	9.99
	Total	49	100	141	100

Table 5 shows the purpose for which the respondents are visiting the library. Among the staff members, the major purposes to use the digital resources are found to be to accure the general knowledge. Out of 49 respondents, 20 (40.82%) use the digital resources for collect general knowledge. 17 (34.70%) of the faculty members use the digital resources for the purpose of finding of subject information. Majority of the students use the library to communicate to others. 44 (31.20%) of them use the library resources for communication purpose and 40 (28.35%) use the library digital resources to prepare assignment work.

Table 6 Learned to Use Digital Resources

Sl. No.	Learned to Use Digital Resources	Staff		Students	
		Number	%	Number	%
1	Self learning	11	22.44	19	13.47
2	Training provided by the Librarian	20	40.81	56	39.71
3	Assistance from Comp. science staff	9	18.38	25	17.74
4	Trained by Colleagues	7	14.28	21	14.90
5	Attendance of formal training	2	4.09	20	14.18
	Total	49	25.78	141	74.22

Table 6 shows distribution of the respondents according to "learned to use digital resources" from engineering colleges. The format received by the respondents is categorized into five types i.e., self-learning, training provided by the librarian, assistance from computer science department staff, trained by colleagues and attendance of formal training. Among the staff members 20 (40.81%) are in need of training provided by the Librarian, 11 (22.44%) respondents have learned from self learning. From the students category, it is found that 56 (39.71%) are learned through assistance and training provided by the Librarian, 25 (17.74%) of students have learned from assistance from computer science department staff members. It could be noted from the table that training has been provided by the Librarian was very much useful to know about digital resources.

Table 7 Adequacy of Information in Digital Resources

Opinion	KCET		Jayaram		Navalar		Total
	Number	%	Number	%	Number	%	
Always	43	54.4	27	39.7	18	41.9	88 (46.2)
Frequently	9	11.4	6	8.8	3	6.9	18 (9.5)
Some Time	18	22.8	14	20.6	12	27.9	44 (23.2)
Rarely	7	8.9	11	16.2	7	16.3	25 (13.2)
Never	2	2.5	10	14.7	3	6.9	15 (7.9)
	79	100	68	100	43	100	190 (100)

Table 7 indicates adequacy of information in digital resources. It could be noted that out of 190 respondents 88 (46.2%) of them utilize the digital resources always. Out of 79 respondents of KCET library, 43 (54.4%) of them have used the digital resources always. 23.2% of respondents are utilizing the digtal resources sometimes only. 9.5% of the respondents have utilized resources frequently. 13.2% of the users have utilized the digital resources rarely. Only 15 (7.9%) out of 190 respondents have express that they have never used digital resources.

Table 8 Satisfaction of Users in Using Digital Library Resources

Services	KCET		Jayaram		Navalar		Total
	Number	%	Number	%	Number	%	
Satisfied	38	48.1	26	38.2	19	44.2	83 (43.7)
Not Satisfied	14	17.7	21	30.9	11	25.6	46 (24.2)
No Response	27	34.2	21	30.9	13	30.2	61 (32.1)
Total	79	100	68	100	43	100	190 (100)

Table 8 shows the satisfaction of the user for using digital resources. Out of 190 respondents 83 (43.7%) respondents are satisfied with the digital library resources. 61 (32.1%) respondents are no response to the satisfaction of the library resources. There are 46 respondents (24.2%) are not satisfied with digital resources available in three colleges.

Table 9 Problems with Access of Digital Resources

Particulars	KCET		Jayaram		Navalar		Total
	Number	%	Number	%	Number	%	
Lack of Information	34	40.0	14	20.6	16	37.2	64 (33.7)
Lack of skills	12	15.2	28	41.2	8	18.6	48 (25.3)
Lack of quality information	10	12.7	10	14.6	6	13.9	26 (13.7)
Not required	12	15.2	8	11.8	4	9.3	24 (12.6)
Inadequate PCs	4	5.1	4	5.9	3	6.9	11 (5.8)
Other factors	7	8.7	4	5.9	6	13.9	17 (8.9)
Total	79	100	68	100	43	100	190 (100)

Table 9 shows the six different problems with access of digital library resources. Lack of information is a main problem and it has got high percentage. Out of 190 respondents 64 (33.7%) users feel that lack of information is the problems which access of digital library resources. The majority of the respondents from the Krishnasamy College of Engineering & Technology library feel that lack of information to access the digital resources. 28 (41.2%) respondents from Jayaram Engineering College feels lack of skills is the main problem to access the digital resources. 16 out of 43 respondents from Dr.Navalar Nedunchezhiyan Engineering College feels that they have lack of information to access the digital resources. The other factor that the problem to use the digital library resources scores a less percentage in all the three college libraries.

7. CONCLUSION

* 71.42% of staff members and 63.82 % of the students are familiar with the digital resources.
* The population of this study was made among 59% of male and 40.8% of female staff and also studied among 78.7% male and 21.3% of female students.
* Regarding the frequency of visit to the library, majority of the users of the three engineering colleges used to visit the library several times a week. From the analysis of the study, out of 190 respondents, 91 respondents are visiting the library several times in a week.

* Out of 49 staff respondents, 19 (38.7%) visit the library to use the online databases and 48 (34%) of the students use digital resources for CD-ROM database.
* The majority of the staff (40.82%) use digital resources to collect general knowledge and also 31.20% of students used for communication purpose.
* The majority of staff (40.81%) and students (39.71 %) learned digital resources through the training provided by the Librarian.
* Out of 190 respondent, 88 (46.2%) of them have felt that digital information available is adequate.
* 83 (43.7%) users are satisfied with use of digital resources.
* 64 users (33.7%) have observed that lack of information is the problem with the access of digital resources.

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THE GROWTH AND DEVELOPMENT OF RESEARCH ON ECOLOGY IN INDIA: A BIBLIOMETRIC STUDY

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Abstract

This study aims to analyze the research output performance of scientists on Ecology in India. In academic and scientific work, publication is the chief means of communicating research, a primary means of recognition and reward, and hence a central social process in any academic as well as research institutions. Therefore, it is through publication the scientists receive professional recognition and esteem as promotion, advancement, and funding for future research. This study attempts to analyze the performance of scientists working in various institutions in terms of growth rate, areas of research concentration, author productivity and authorship pattern.

Keywords: *Bibliometrics, Ecology Research, FID, Institute of Scientific Information (ISI) Scientometrics, Web of Science (WOS)*

1. INTRODUCTION

Bibliometrics is a type of research method used in Library and Information Science. It is a quantitative study of various aspects of literature on a topic and is used to identify the pattern of publication, authorship and secondary journal coverage with the objective of getting an insight into the dynamics of growth of knowledge in the areas under consideration. This consequently leads to the better organization of information resources which is essential for its most effective and efficient use. Bibliometrics today has attained sophistication and complexity having national, international, and interdisciplinary character. The present study focuses attention on the bibliometric analysis of the pattern of publication, authorship, and journal coverage by the scientist on Ecology [1].

The term "Bibliometrics" was first coined by Pritchard in 1969 and its usage and practice could be traced back to the second decade of this century. A pioneer example of a bibliometric study was a 'Statistical Analysis of the Literature' of comparative anatomy from 1543 to 1860 by counting the number of titles, both books and journal articles, and grouping them by countries of origin within periods [2].

In 1923 the second study was conducted by Hulme entitled "Statistical Analysis of the History of Science". His analysis was based on the original entries in the seventeen sections of the "English International Catalogue of Scientific Literature".

The third study was the pioneering work of Gross and Gross reported in 1927. They used the method of counting and analyzing the citations appended to articles in the Journal of the American Chemical Society and produced a list of journals of Importance in Chemical Education. The fourth and prominent work was of Broadford in 1934 on the distribution and in lubrication research. This research found the backbone of the theoretical foundation of the bibliometrics study known as the "Broadford's Law of Scattering."

Bibliometric is just one of many sciences whose name ends with "metrics". Many scientists used the term under different names, but the concepts were more or less supplementary and complementary to each other with some broader and narrower extension of human ideas. One name that was used quite early but very scarcely was Statistical Analysis of the Literature by Cole and Eales in 1917, while Hulme used the term 'Statistical Bibliography' in 1923.

In 1948, the great Library Scientist, S.R. Ranganathan coined the term "Librametry", which historically appeared first and perhaps seemed proper to streamline the services of librarianship. The term 'Bibliometrics' is just analogous to Ranganathan's Librametrics, the Russian concept of 'Scientometrics', FID's 'Informetrics' and to some other well established sub-disciplines like 'Econometrics', 'Psychometrics', 'Sociometrics', 'Biometrics', 'Technometrics', 'Chemometrics', 'Climetrics', where mathematical and statistical calculus have been systematically applied to study and solve problems in their respective fields. Now-a-days, the term 'Scientometrics' is used for the application of quantitative methods to the history of science and obviously overlaps with bibliometrics to a considerable extent [3].

2. BIBLIOMETRIC LAWS

Bibliometric laws are statistical expressions which seek to describe the working of science by mathematical means. The three basic laws in bibliometrics are:

Lotka's Law is considered as the earliest and most widely applied study in measuring the scientific productivity of an author. He claims that a large proportion of the literature is produced by a small number of authors and it is distributed so as the number of people producing 'n' papers is approximately proportional to $1/n^2$.

Zipf's Law is a statistical distribution of word frequency on a hyperbolic curve which states: "If the words are arranged in their decreasing order of frequency, then the rank of any given word of the text will be inversely proportional to the frequency of occurance of the word" [4].

Bradford's Law is perhaps the best known of all the bibliometric concepts. His law describes how the literature on a subject is distributed in journals. He divides the articles found on a subject into three roughly equal zones, which increase by a multiple of above five. The relation between number of periodicals coming in the first zone of the 'nucleus' and the successive zones could be represented as $1:n:n^2$... Apart from the verbal formula, Bradford also gives a graphical representation of scattering of articles in periodicals [5].

3. APPLICATION OF BIBLIOMETRICS

Bibliometrics as a technique has extensive application in identifying the research trends in a subject, trends in a authorship and collaboration in research, core periodicals, obsolescence and dispersion of scientific literature useful in estimating the comprehensiveness of secondary periodicals, studying the author productivity and impact of research, distribution of scientific publications by Universities, citation studies and so on. Most of these studies pertaining to Universities, Scientists, Disciplines and Documents. Further, bibliometrics could be used in the identification of emerging research areas.

The popularity in the adoption of bibliometric techniques in various disciplines stimulates stupendous growth of literature on bibliometrics and its related areas. The techniques are now being vigorously pursued and as a result, it has been found that on fourth of all the articles published in the Library and Information Science periodicals also carry a large number of articles on bibliometrics. These techniques are being used for a variety of purposes like determination of various scientific indicators, evaluation of scientific output, selection of journals for libraries and even forecasting potential nobel laureates.

In the recent years, there has been an explosive growth in human knowledge. In fact, the nature and tempo of growth has been such as too far outstrip the achievements of the past centuries. Science itself grows in extension and intention and the number of scientists increase. So obviously does the volume of literature generated by the scientific community. The growth of literature itself has caused a fairly widespread alarm and the term that describes explosion is also known as information explosion.

It could be noted that at the global level about 5 million articles are being published annually in about one lakh journals. The 5th edition of the world list of scientific periodicals has shown a two hundred percent increase in the number of scientific periodicals since 1970. De Solla Price claims that the science literature has grown exponentially in the last three centuries with a doubling rate approximately 15 years.

The major focus of the study is to apply the bibliometric analysis with a view to analyse the performance of

research output of Scientists in the Universities of Tamil Nadu. The study has resulted in a special attention on the performance of research output in science. It aims at examining the emergence of research areas, research groups and research department in Universities with a view to map the cognitive or intellectual structure of research.

4. LITERATURE REVIEW

It devotes to examine the review of works relating to various aspects of bibliometric studies. It could be observed that there are various research studies highlighting the importance of bibliometric analysis and their application to library management and administration. This type of analysis enables the researcher to identify the research gap in the previous studies. By considering this efficiency of various dimensions of bibliometric studies, the researcher has presented the literature.

Garg has given an overview of the studies published in the International Journal of Scientometrics during 1978-2000 on cross-national, national and institutional scientometric assessment [6].

Louttit analysed the language performance of writing research papers by psychologists, chemists and physicists. It was observed that reference made by writers in English language journals were 92.5% in English, in German journals 91 percent in German, French journals 64.6% in French. Further it was said that numerous studies in Social Sciences showed reference in American sources having around 90 % in English [7].

Simonton identified that in two language source journals in the field of Fine Arts, more than half of the references were the materials in foreign language references [8].

Ozinonu made an early survey relating to growth of Basic Science in Turkey. The author identified the growth of manpower and frequency of publications in Mathematics, Physics, Astronomy, Chemistry and Bio-Science for the period 1933-1966 [9].

Rangarajan and Poonam Bhatnagar analysed the bibliometric data compiled from Physics abstracts on research papers published in the field of Mossbauer effect studies over a period of two decades from its discovery in respect of media choice [10].

Klaic examined the research activity of chemists from Rugjer Boskovic, Yugoslavia during 1976-1985 covering 2018 research papers of scientific work. The papers were classified according to subfields used in the Journal Citation Reports. In this study he found that over 67 percent of papers corresponded to journal articles [11].

Kannappanavar and Vijayakumar made a study on the authorship trend in International Monitory Fund Literature for a period from 1991-1998 and concluded that collaborative research is in an increasing trend varying from 0.45 - 0.62. The average degree of collaboration was found to be 0.56 - 0.81 by studying five selective journals in geology covering a period from 1987-1996 [12].

Robert Dalpe conducted a study to assess quality for bibliometric studies in relation to collaboration of authors using biotechnology research and revealed the interaction between Science and Technology [13].

Abbas Horri made a bibliometric overview of Library and Information Science research productivity in Iran over the years 1996-1998. In his findings indicate that most contributions to the scientific production of the field are research papers, theses and research reports respectively [14].

5. METHODOLOGY

The present study attempts to find out the pattern of information published by scientific researchers in the field of Ecology. The study is based on the references to analyse quantitatively the growth and development of publication output as reflected in Web of Science database during the period 1990-2006. There are 501 records retrieved from Web of Science, it is the largest abstract and citation database of research literature and quality web sources. It is designed to find the information scientists need. Quick, easy and comprehensive, Web of Science provides superior support of the literature research process.

The Web of Science is an online edition that combines the three databases SCI expanded (an SCI edition with broader coverage), the SSCI and the ACHI in a unique online database published from Institute of Scientific Information (ISI), Philadelphia. The SCIE covers about 5900 journals whereas the SCI covers about 3500, the SSCI covers 1700 journals and 3300 journals selectively.

The ACHI finally covers more than 1100 journals fully and about 7000 journals selectively. The Web of Science, in turn, is part of more comprehensive Web of Knowledge. The Web of Knowledge comprises the above mentioned ISI databases as well as the Derwent Innovations Index, BIOSIS previews, ISI proceedings, CAB ABSTRACTS and INSPEC bibliographic and Patent databases.

The Publications of Scientists are mostly in the form of primary journals, notes, letters, review, editorial materials, meeting abstracts, bibliographic items and discussions. The research papers published by scientists in the field of Ecology covered in the annual version of Science Citation Index database were taken as the prime source for the present study. The papers published from 1990 to 2006 by the scientists are accounted totally 501. They were retrieved from SCI database which is considered to be a prime source of data for the present study.

The Bibliographical details of publications entered in the catalogue cards. Finally the cards were arranged in different ways with a view to identify the research performance of faculty members.

6. ANALYSIS AND INTERPRETATION

The analysis of data received from Science Citation Index Expanded (SCIE) for the period 1990-2006 has been done with a view to measure the growth of literature over the years. The literature has been analysed to ascertain forms of publications, authorship pattern, authorship distribution, author productivity, productivity index to find out transience, institution-wise performance, and distribution of articles in journals. The research output of ecology scientists in India, which comes to 501 publications, has been taken as a base to measure the above mentioned parameters.

It could be clearly seen from the Table 1 that during the period 1990-2006 a total of 501 publications were published. The highest number of publications was 54 in 2005. In the year 2006 there were 47 publications, 46 in 2004, 40 in 2002, 39 in 2000. There were 33 articles published in the year 2001, 32 publications in the year 1998, 24 in the year 1993, 20 each in the years 1996 & 1997, 19 each in 1991 & 1992. Finally, 17 each in 1990, 1994 and 1995.

The average number of publications per year was 29.47. the lowest number of publication was 17 in the years 1990, 1994 and 1995. The highest number of articles were published in the year 2005 with 54 publications.

Table 1 Year-wise Distribution of Research Output on Ecology in India

Sl.No.	Publication Year	Research Output	%
1	1990	17	3.39
2	1991	19	3.79
3	1992	19	3.79
4	1993	24	4.79
5	1994	17	3.39
6	1995	17	3.39
7	1996	20	3.99
8	1997	20	3.99
9	1998	32	6.39
10	1999	21	4.19
11	2000	36	7.19
12	2001	33	6.59
13	2002	40	7.98
14	2003	39	7.78
15	2004	46	9.18
16	2005	54	10.98
17	2006	47	9.40
	Total	501	100

In light of the above discussion, the highest number of publications was 54 (10.98%) published in the year 2005.

Table 2 Authorship Pattern of Research Output on Ecology in India

No. of Authors	No. of Contribution	%	Cumulative Percentage
1	97	19.36	19.36
2	198	39.52	58.88
3	109	21.76	80.64
4	49	9.78	90.42
5	18	3.60	94.02
6	12	2.40	96.42
7	5	0.99	97.41
8	4	0.80	98.21
9	2	0.40	98.61
10 and above	7	1.39	100
Total	501	100	

The Table 2 clearly shows that the authorship pattern among ecology output during the period 1990-2006 by the researchers. Double-authored papers contribution are high (39.52%). Three authored papers account for 109 (21.76%). Single authored papers had a share of 97 (19.36%) among the total number of contributions followed by four authored papers 49 (9.78%), five authored papers 18 (3.60%), six authored papers 12 (2.40%), seven authored papers 5(0.99%), eight authored papers 4 (0.80%), nine authored papers 2 (0.40%) and more than nine authored papers 7 (1.39%).

It could be observed from the above analysis that double-authored papers contribution are high with 198 (39.52%).

Table 3 Ranking of Authors Based on their Publication

Sl.No.	Author	Publication	%
1	SINGH,JS	15	2.99
2	INDERJIT	11	2.20
3	SUKUMAR,R	9	1.80
4	ANIL,AC	7	1.40
5	ANSARI,ZA	7	1.40
6	GADGIL,M	7	1.40
7	CHATTOPADHYAY,J	6	1.20
8	DAKSHINI,KMM	6	1.20
9	RAJU,AJS	6	1.20
10	RAO,SP	6	1.20
11	SARKAR,RR	6	1.20
12	PARULEKAR,AH	5	1.00
13	REDDI,CS	5	1.00
14	SHARMA,BK	5	1.00
15	ANANTHAKRISHNAN, TN	4	0.80
16	ATLURI,JB	4	0.80
17	CHOWDHURY,D	4	0.80
18	JOSHI,A	4	0.80
19	KHAN,MA	4	0.80
20	KHURANA,E	4	0.80
21	KUMAR,A	4	0.80
22	MUKHERJEE,PK	4	0.80
23	RAGHYKUMAR,S	4	0.80
24	SHANKER,K	4	0.80
25	SHANOWER,TG	4	0.80
26	SINGH,SP	4	0.80
27	SRIDHAR,KR	4	0.80
28	STAUFFER,D	4	0.80
29	WATVE,MG	4	0.80
30	AKHTAR,N	3	0.60
31	BARGALI,HS	3	0.60
32	BRAHMACHARY,RL	3	0.60
33	CHAUDHURI,PK	3	0.60
34	CHAUHAN,NPS	3	0.60
35	DANIELS,RJR	3	0.60
36	DAS,S	3	0.60
37	GADAGKAR,R	3	0.60
38	GOWER,DJ	3	0.60
39	GOYAL,SP	3	0.60
40	GUPTA,AK	3	0.60
41	HAZRA,N	3	0.60
42	INGOLE,BS	3	0.60
43	JOSEPH,A	3	0.60
44	MADHUSUDAN,MD	3	0.60
45	MANDAL,S	3	0.60
46	MEASEY,GJ	3	0.60
47	OMKAR	3	0.60
48	OOMMEN,OV	3	0.60
49	PAL,SK	3	0.60
50	PANIGRAHY,RC	3	0.60
51	PERVEZ,A	3	0.60
52	RADDER,RS	3	0.60
53	RAGHUBANSHI,AS	3	0.60
54	ROMEIS,J	3	0.60
55	ROY,PS	3	0.60
56	SAGAR,R	3	0.60
57	SAIDAPUR,SK	3	0.60
58	SHANBHAG,BA	3	0.60
59	SHARMA,S	3	0.60
60	SIHAG,RC	3	0.60
61	SINGH,M	3	0.60
62	SINHA,A	3	0.60
63	SUNDARAMOORTHY,S	3	0.60
64	VENKAT,K	3	0.60
65	VENUGOPALAN,VP	3	0.60
66	VERGHESE,T	3	0.60
67	WILKINSON,M	3	0.60
68	105 Authors 2 Articles	105	0.40
69	860 Authors single Article	860	0.20

The students indicate that most productive authors are highly motivated, committed, and involved in their work. They possess high ego strength, personal dominance, preference for precision strong control of impulse, and preoccupation with ideas rather than social considerations.

In the light of the above, an attempt has been made to analyze the research performance of individual scientist of Ecology. The analysis reveals that the contribution of individual scientists varies from person to person. However, the highest contribution is of 15 papers by J.S. Singh, the second place occupied by Inderjit scored with 11 publications, the third place went to R. Sukumar with 9 publications followed by 7 publications each contributed by A.C. Anil, Z.A. Ansari and M.Gadgil, whereas the lowest contribution is one paper.

It could be concluded from the above Table 3 that J.S. Singh captured the first place with 15 (2.99%) publications during the study period.

Table 4 Collaborative Country-wise Distribution of Research Output

SL.No.	Country / Territory	Record Count	%
1	INDIA	501	100
2	USA	40	7.98
3	ENGLAND	15	2.99
4	GERMANY	11	2.20
5	CANADA	9	1.80
6	FRANCE	6	1.20
7	JAPAN	4	0.80
8	NETHERLANDS	4	0.80
9	SCOTLAND	4	0.80
10	PHILIPPINES	3	0.60
11	SWEDEN	3	0.60
12	DENMARK	2	0.40
13	ITALY	2	0.40
14	MALAWI	2	0.40
15	PANAMA	2	0.40
16	SPAIN	2	0.40
17	AUSTRALIA	2	0.40
18	AUSTRIA	1	0.20
19	BANGLADESH	1	0.20
20	BELGIUM	1	0.20
21	BRAZIL	1	0.20
22	HONG KONG	1	0.20
23	ISRAEL	1	0.20
24	KENYA	1	0.20
25	KUWAIT	1	0.20
26	MALAYSIA	1	0.20
27	MOROCCO	1	0.20
28	NEW ZEALAND	1	0.20
29	NIGERIA	1	0.20
30	NORWAY	1	0.20
31	CHINA	1	0.20
32	SINGAPORE	1	0.20
33	SOUTH KOREA	1	0.20
34	SWITZERLAND	1	0.20
35	TAIWAN	1	0.20
36	THAILAND	1	0.20
37	WALES	1	0.20

There are 501 publication published during the study period 1992 to 2006. Authors have good relation with various countries for research paper contribution like USA, England, Germany, Canada, France, Jappan, Netherland, Scotland, Phillippines, Sweeden, Denmark, Italy and so on.

It could be deduced from the above discussion that the members of faculty have good relation with various countries for research paper contribution like, USA, England and Germany.

Table 5 Source-wise Distribution of Ecology Research Output

SL.No.	Source	Output	%
1	Article	430	86.83
2	Review	51	10.20
3	Note	9	1.80
4	Editorial Material	5	1.00
5	Letter	4	0.80
6	Book Review	1	0.20
7	News Item	1	0.20
	Total	501	100

The highest number of publications were 430 (86.83 %) in journals articles and other publications were 51 (10.20%) in reviews, 9 (1.80%) in notes, 5 (1.00%) in editorial materials , 4 (0.80%) in letters and 1 (0.20%) of each in the book reviews and news items.

It is deduced from the Table 5, the journal articles occupied the predominant place among the other sources of publication.

Table 6 Single Vs Multiple-Authored Output on Ecology

Authors	Output	%
Single Author	97	19.36
Multiple Author	404	80.64%
Total	501	100

Table 6 shows the distribution of single Vs Multiple authored papers published by the scientists in the filed of Ecology during the study period. It is clearly shown from the table that the single authored contribution shares 97 (19.36%) and the remaining is covered by multi-authored contribution at 404 (80.64%).

It could be deduced from the above discussion among the total number of publications, multiple authored papers dominate with high percent of 80.64.

Table 7 Language-wise Distribution of Research Output on Ecology

Sl. No.	Language	Records	%
1	English	499	99.60
2	French	2	0.40
	Total	501	100

Table 7 shows the language-wise distribution of research output. It clearly reveals that 99.60% of the research publications are available in English language and only one record i.e., 0.40% is available in French language.

It could be deduced from the above discussion that among the total number of publications, English language dominates with high percent .

7. FINDINGS

The present study has been undertaken to assess the research performance of scientists on Ecology. The results of research have been published by the scientists in different sources. The findings of the present study lead to the following observations:

* The findings of the year-wise research output of scientists on Ecology brings out the fact that the highest number of publications was 54 published in the year 2005.
* The findings of the authorship pattern of Ecology scientists bring out the fact that the double authored research output is high with 198 (39.52%).
* The findings of the ranking of authors based on their publications bring out the fact that J.S. Singh captured the first place with 15 publications during the study period.
* The findings of the collaborative country-wise research output bring out the fact that the faculties are having good relation with various countries for research paper contribution like USA, England, Germany etc.
* The findings of the source-wise distribution of research output bring out the fact that the journal articles occupied the predominant place among the other sources of publication.
* The findings of the collaborative institution-wise research output bring out the fact that they have good relation with other institutions for research contribution like National Institute of Oceanography, Indian Institute of Technology and so on.
* The findings of the ranking of journals bring out the fact that the highest number of publications was 81 (16.17%) published in Current Science journal.
* The findings of the single Vs multiple authored publications bring out the fact that the multiple authored papers dominate high with 80.64 %.
* The findings of the subject-wise research output bring out that among the various science subjects, multi disciplinary and environmental ecology subjects occupied the first two places in order.

8. SUGGESTIONS

The findings of the present study lead to the following suggestive measures:

* There are needs to provide more infrastructural facilities to the Ecology research institutions and academic institutions also.
* There is a need to give special training programmes to develop the efficiency to caliber among the

scientists of various institutions to pursue their research activities on par with the world output.

* There is a need to provide incentives and awards to the eminent and outstanding scientists depending on their level of contribution to the growth of research and development of the discipline.
* The scientists should be given more number of projects in the subject fields which are lagged behind.
* The funding agencies should allocate equal number of projects to all institutions irrespective of demand and request.
* The state and central governments should come forward to allocate more funds especially for research activities for all the institutions.

9. CONCLUSION

The research trend in the field of Ecology is collaborative in nature like any other discipline. The studies on bibliometric are mostly concentrated on data drawn from databases, individual journals, individual institutions, research output in a particular field of knowledge, individual subjects research output, individual author's publication and so on. There is a need to encourage and motivate a collaborative research activities. In this context, scientists of Ecology may be encouraged to undergo collaborative research with the other countries. The present study also appears to be a milestone on the above said fact.

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INFORMATION USE BEHAVIOUR OF SOCIAL SCIENTISTS IN WOMEN'S UNIVERSITIES IN SOUTH INDIA

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Abstract

Attempts have been made to study the information use behaviour of Social Scientists of Women's Universities by surveying faculty and students covering 192 samples. The study reveals that majority of faculty and students visit the library to prepare class notes and update their knowledge. Among the variety of information sources, reference sources and text books have been frequently used by the respondents to a greater extent, followed by conference proceedings and scientific journals. The study also discusses the facilities and services rendered to the users. Major problems faced by respondents in using and searching for information sources are lack of availability of information in different formats and lack of internet facilities.

Keywords: *Information Seeking Behaviour, Use Behaviour, Women's Universities - South India*

1. INTRODUCTION

We are living in an information age and as a consequence, man has become more and more information conscious. More and more people deliberately and consciously seek information and it has become an integral part of human activity especially in the area of education, research and development, production and marketing of goods, all of which have contributed for the improvement of the quality of life. Information user studies over the years have attempted to explain the "information use phenomena, to understand information use behaviour, to predict this behaviour, to control and improve the information use by manipulating essential conditions. One of the preliminaries to the attainment of this objective is the description of user behaviour in many aspects [1].

The users of information find difficulty in identifying and physically locate the relevant information at the time when it is required. In this context, the libraries - the reservoirs of knowledge and the centers of learning have greater responsibility in providing the right information to the right user at the right time in right form so that the information will be put to maximum use and there by promoting the use of information. To achieve this, the Libraries and Information Centers need to be planned and designed based on the needs and requirements of users of libraries.

The major studies on social science information behaviour in the 1970s revealed that social scientists did not use formal information tools like bibliographies or reference databases, but rather relied on personal recommendations, browsing in journals, and citations found in other publications [2]. Shokeen and Kushik studied about information seeking behaviour of social scientists working in the universities located in Haryana [3]. They reported most of the social scientists visit the library daily. The first preferred method of searching for the required information by the social scientists followed by searching through indexing and abstracting periodicals, and citations in articles respectively. The social scientists use current journals followed by books. Suriya, Sangeetha and Nambi carried out a research work on Information seeking behaviour of faculty members from Government Arts Colleges in Cuddalore District [4]. The purpose of their study is to investigate, how faculty members seek information from the library. It mentions that most of the respondents (38.12%) visit the library several times a week to meet their information needs. Regarding the type of search made by the respondents the majority of the respondents (56.87%) made their search by subject.

The libraries need to have all the up-to-date and accurate information about the users as the knowledge of users is one of the prerequisites for the proper planning and development of resources and services of libraries.

Therefore, it is said that understanding the users means the half the battle in providing the information services is over. Therefore, the libraries need to know: who the users are, what their functional responsibilities are and areas of interest; how much time they spend on reading information sources, what the sources of information are most frequently used by them, how useful the collections of library are, information services used by the users, methods adopted for searching various print and electronic information sources and problems encountered in using and searching information sources. These are some of the questions for which the planners and organizers of libraries and information centers need to find answers from time to time in order to make the resources and the services provided by the library relevant and appropriate to the user community it serves. Hence, an attempt has been made in this work to study the information use behaviour of social scientists in selected women universities in South India.

2. OBJECTIVES OF THE STUDY

The primary objectives of the study are to identify

i.   Purpose of visiting the library and the time spent on reading information sources,
ii. Motivational factors for information seeking in the libraries,
iii. Frequency of using formal and informal sources of information to support academic work,

iv. Motivational factors for information seeking in the libraries,
v.   Frequency of using formal and informal sources of information to support academic work,
vi. Extent of relevance and usefulness of information sources to support their academic endeavour,
vii. Information services frequently used by social scientists to meet their information needs and
viii.Problems faced in searching information sources.

3. METHODOLOGY

Questionnaire method has been adopted for collecting research data from the faculty and the Postgraduate Students of two women universities in South India i.e. Karnataka State Women's University, Bijapur, Karnataka and Sri Padmavati Mahila Visvavidyalayam, Tirupati, Andhra Pradesh. The research instrument has been selected based upon the study population and objectives of the study.

4. RESULTS AND DISCUSSION

A total of 272 questionnaires were distributed to PG students and faculty of Karnataka State Women's University, Bijapur, Karnataka and Sri Padmavati Mahila Visvavidyalayam, Tirupati, Andhra Pradesh. Out of which 192 samples were duly received with a feedback of 70.5%.

Table 1 The Study Population Covering Two Women Universities

Women University	Questionnaires Received		
	PG Students	Teaching Faculty	Total
Karnataka State Women's University, Bijapur, Karnataka	71	33	104
Sri Padmavati Mahila Visvavidyalayam, Tirupati,	58	30	88
Total	129	63	192

Table 2 Age of the Respondents

Age (Years)		Frequency	%	Cumulative %
Valid	< 30	111	57.8	57.8
	30-40	36	18.8	76.6
	41-50	33	17.2	93.8
	> 51	12	6.3	100.0
	Total	192	100.0	

It is found from the Table 2 that majority of the respondents are in the age group of below 30 years (57.8%). This is followed by respondents in the age group between 30 and 40 year (18.8%) and 17.2% of the respondents are in the age group between 41 to 50 years of age and just 6.3% of respondents are above 50 years of age. Thus more than half of the respondents are bellow 30 years of age.

It is noted from the Table 3 that the strength of Postgraduate students covered in the research study are higher than the faculty. About 67.2% of study populations are PG students and 32.8% of respondents are the faculty of women universities in South India.

Table 3 Designation of Respondents

Designation		Frequency	%	Valid Percent	Cumulative %
Valid	PG Student	129	67.2	67.2	67.2
	Faculty	63	32.8	32.8	100.0
	Total	192	100.0	100.0	

It is found from the Table 4 that just above half of the respondents spend 1-2 hours on reading information resources (51.6%), 40.6% of respondents spend 3-4 hours on reading information resources. However, 6.3% and 1.6% of respondents spend 5-6 hours and 7-8 hours respectively on reading information resources.

Table 4 Time Spent on Reading Information Resources

Time Spend per Day (Hours)		Frequency	%	Cumulative %
Valid	1-2	99	51.6	51.6
	3-4	78	40.6	92.2
	5-6	12	6.3	98.4
	7-8	3	1.6	100.0
	Total	192	100.0	

Table 5 The Purpose of Visiting the Library

Purpose of Visiting the Library	Frequency	%
Research work	102	53.1
Preparing class notes	150	78.1
To update knowledge	141	73.4
Writing research paper	54	28.1
To support Ph D	36	18.7
To borrow books	90	46.9
To consult reference sources	66	34.4
To Use Internet	39	20.3
To Use CD-ROM database	18	9.4

Table 5 shows that majority of the faculty and students of women universities visit the library with a purpose to prepare for class notes (78.1%) and updates their knowledge (73.4%). However 53.1%, 46.9% and 34.4% of the respondents visits the library for research work, to borrow books and consult reference sources respectively. While the other purpose of visiting the library is writing research paper (28.1%), using internet (20.35%), to support Ph.D work (18.7%) and to use CD-ROM databases (9.4%).

Table 6 Motivational Factors for the Information Seeking by the Respondents

Psychological Need Factors	Did not Feel at All	Felt Little	Felt Moderately	Felt Strongly
	1	2	3	4
Need for other approval - To get praise from lecturers/ colleagues and to avoid embarrassment at being unable to answer	75 (39.1%)	60 (31.3%)	42 (21.9%)	15 (7.8%)
Need for success in Chosen profession to become a better teacher	33 (17.2%)	16 (8.3%)	71 (37.0%)	72 (37.5%)
Need for self approval -To satisfy a personal interest	6 (3.1%)	39 (20.3%)	84 (43.8%)	63 (32.8%)
Need for self Extension - to get reinforcement of values and thinking and keep up with current affairs	9 (4.7%)	34 (17.7%)	53 (27.6%)	96 (50.0%)
Need for intellectual stimulation - To acquire knowledge	9 (4.7%)	62 (32.3%)	84 (43.8%)	37 (19.3%)
Need for successful University life - to complete assignments and get better grades	9 (4.7%)	57 (29.7%)	58 (30.2%)	68 (35.4%)

Table 6 reveals that less than 2/5th of respondents do not feel the psychological motivating factor for information seeking to get praise from lecturers / colleagues and to avoid embarrassment at being unable to answer (39.1%), while 31.3% felt little, 21.9% felt moderate and 7.8% felt strongly.

About 37.5% and 37% strongly and moderately feel that the motivational factor for information seeking is a need for success in chosen profession to become a better teacher and also need for self-appraisal (32.8% and 43.8%) respectively. The similar result feels strongly and moderately for motivational factors i.e. need for self-extension to get reinforcement of values and thinking and keep up with current affairs (50% and 27.6%); need for intellectual stimulation - to acquire knowledge (19.3% and (43.8%) and need for successful university life to complete assignments and get better grades (35.4% and 30.2%).

Table 7 The Frequency of Use of Different Information Sources to Support their Academic Purpose

Information Sources	1	2	3	4	5	Mean
Books	9 (4.7%)	15 (7.8%)	43 (22.4%)	91 (47.4%)	34 (17.7%)	3.65
Scientific-journals	7 (3.6%)	32 (16.7%)	89 (46.4%)	37 (19.3%)	27 (14.1%)	3.23
Reference sources (Dictionaries, Encyclopedia, yearbooks etc.)	9 (4.7%)	18 (9.4%)	67 (34.9%)	62 (32.3%)	36 (18.8%)	3.51
Indexing and Abstracting Sources	39 (20.3%)	45 (23.4%)	71 (37.0%)	31 (16.1%)	6 (3.1%)	2.58
Conference/Seminars Proceedings	30 (15.6%)	34 (17.2%)	68 (35.4%)	31 (16.1%)	29 (15.1%)	2.97
Internet/ Online-journals/database/archive	38 (19.8%)	60 (31.3%)	46 (24.0%)	24 (12.5%)	24 (12.5%)	2.66
Library catalogue (OPAC)	15 (7.8%)	58 (30.2%)	63 (32.8%)	38 (19.8%)	18 (9.4%)	2.92
CD-ROM databases	33 (17.2%)	47 (24.5%)	61 (31.8%)	36 (18.8%)	15 (7.8%)	2.75
Thesis and Dissertations	27 (14.1%)	39 (20.3%)	55 (28.6%)	53 (27.6%)	18 (9.4%)	2.97
Email/cost-server, Discussion Forum etc.	25 (13.0%)	24 (12.5%)	72 (37.5%)	50 (26.0%)	21(10.9%)	3.09
Discussion with librarian or reference staff of the library	25 (13.0%)	54 (33.3%)	64 (16.1%)	31 (9.4%)	18 (12.5%)	2.80
Consult a knowledgeable person in the field/supervisor	10 (5.2%)	45 (23.4%)	6 1 (31.8%)	52 (12.5%)	24 (12.5%)	3.18

(1-Not at all, 2-To little extent, 3-To some extent, 4-To full extent, 5-To greater extent)

Table 7 shows that among the variety of information sources, reference sources (18.8%) and books (17.7%) have been frequently used by the respondents to a greater extent, followed by conference proceedings (15.1%) and scientific journals (14.1%) used frequently to a greater extent. Similarly the respondents use books (47.4%) and reference sources (32.3%) to a full extent. As indicated from mean value for each information resources, it can be inferred that books (3.65), reference sources (3.51), scientific journals (3.23) and consulting a knowledgeable person in the field / supervisor (3.18) and e-mail (3.09) are the frequent used sources of information among respondents indicating at level 3 and plus i.e. usage to some extent.

Table 8 Relevance and Usefulness of Information Sources Available in the Library to Support their Academic Achievement

Information Sources	Mean	← Not at all			→ Very much	
		1	2	3	4	5
Text Books	4.17	9	27	78	78	-
Reference collections (Dictionaries, encyclopedia, yearbooks etc.)	3.51	14	62	68	48	-
Journals	3.23	9	31	65	54	33
News papers	3.50	9	40	39	53	51
CD-ROM databases	2.11	24	55	64	36	12
Government publications	2.96	33	30	60	48	21
Thesis /Research Reports	2.97	36	22	41	48	45
Internet facility	3.34	18	31	51	50	42

(1-Not at all, 2-To little extent, 3-To some extent, 4-To full extent, 5-To greater extent)

Table 8 reveals that among the different information sources available in the library, respondents strongly agree that books (4.17) available in the library are most relevant and useful for their academic support to a full extent. This is followed by news papers (3.50), internet facility (3.34), journals (3.23), thesis / research reports (2.97), government publications (2.96) and CD-ROM databases (2.11).

Table 9 Use of Internet Resources and Services

Internet Based Searching	Mean	← Not at all			→ Very much	
		1	2	3	4	5
E-mail	3.15	27	30	54	60	21
WWW	3.15	24	42	51	45	30
E-Journals / Databases	2.65	45	63	33	30	21
Discussion Forums	2.35	75	42	30	33	12
FTP	2.08	96	39	21	30	6
Search Engines	2.54	57	42	45	33	15
Subject Gateways	2.43	51	60	42	27	12

(1-Not at all, 2-To little extent, 3-To some extent, 4-To full extent, 5-To greater extent)

It is seen from Table 9 that WWW and E-mail are the two popular internet resources and services used by respondents of the study indicate at scale three plus as to some extent. However, these services are followed by e-Journals / databases (2.65), search engines (2.54), subject gateways (2.43), discussion forums (2.35) and FTP (2.08).

Information services frequently used by the respondents is shown in Table 10.

Table 10 Information Services Frequently Used by the Respondents

Information Services	Frequency	%
Circulation	159	82.8
Reference Service	128	66.6
Bibliographic	39	20.3
Current Awareness	48	25.0
Selection Dissemination of Information Service	45	23.4
Index and abstracting service	42	21.8
CD- ROM Databases Search	51	26.5
Internet service	162	84.3
Reprographic	169	88.0
News paper clipping service	74	38.5
Literature Search Service	112	58.3

As seen from the Table 10 that reprographic (88%), internet services (84.3%) and circulation service (82.8%) are the popular services used frequently by the respondents of the study. However in the second order of use of services are Reference service (66.6%), Literature search service (58.3%) and Newspaper clipping service (38.5%).

Table 11 Problems Faced in Using and Searching Information Sources

Problems Faced in Using and Searching Information Sources	Frequency	%
Lack of Awareness of Information Sources.	48	25.0
Lack of Training in Searching Information	66	34.3
Lack of Availability of information in different formats (Print, Electronic Including web)	99	51.2
Lack of Knowledge and skills in the use of ICT	63	32.8
Lack of Internet facilities	78	40.6
Lack of Access to CD-ROM databases	72	37.5
Lack of Skills in searching Information	51	26.5
Lack of Knowledge of Information Sources	48	25.0
Lack of Time	60	31.2

Table 11 reveals that the major problems faced by respondents in using and searching information sources are lack of availability of information in different formats (Print, Electronic including web) (51.2%) and then lack of internet facilities (40.6%), lack of access to CD-ROM databases (37.5%), lack of training in searching information (34.3%), lack of knowledge and skills in the use of ICT (32.8%), lack of time (31.5%), lack of skills in searching information (26.5%), lack of knowledge of information sources (25%) and awareness of information sources (25%).

5. CONCLUSION

The successful operation of any library depends to a large extent on the choice of library collections to meet the need and requirements of the end users. Consequently, librarians must be aware of how the faculty members and the students seek information. The first three preferences given by the faculty for seeking information are textbooks, periodicals and newspapers. It is also observed that the majority of faculty members sought information for preparing lectures, keeping up-to-date knowledge and research work. The problems they faced are quality of information sources to some extent, lack of awareness and time limitations.

In regard to information use behaviour of faculty and PG students' users in Women Universities environment, it is recommended that library staff or reference librarians could use their time in a better way by focusing on assisting users. It is also recommended to incorporate the news which is interesting to the users. Suggestions for future research are related to the limitation of this study. This study can be extended by directly observing students and teachers. Another way to extend the study finding would be to explore post-information seeking strategies and activities in a more detailed level by examining how people save, exchange, distribute, organize and provide web information after they find the information at home. Librarians should continue to monitor technology and lifestyle changes. Adoption of technology should be based on evidence that supports adoption; evidence that validates the information seeker's perspective. It is up to the library staff, in the light of the findings of the study, to develop need based collections, organize them and provide effective services using technology mediated access.

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STUDY ON THE AWARENESS OF DIGITAL LIBRARY USERS IN GOVERNMENT ARTS COLLEGE, KUMBAKONAM, TAMIL NADU: A STUDY

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Abstract

The present study aims to find out the awareness of Digital Library users in Government Arts College, Kumbakonam, Tamil Nadu. A samples of 200 selected randomly were studied. The results revealed that users differed in awareness of digital library on the basis of sex, age, designation, education qualification, experience, monthly income, marital status, religion and residence. This will ensure the full co-operation and support of the users.

Keywords : Awareness of Digital Library, Users Study

1. INTRODUCTION

The term Digital Library has a variety of potential meanings, ranging from a digitized collection of material that one might find in a traditional library through to the collection of all digital information along with the services that make that information useful to all possible users [1]. As there are many definitions of a "digital library," terms such as "electronic library" and "virtual library" are often used synonymously. A digital library is nothing but a large database for the people who are working on hypertext environment. It is an environment, which supports the full life cycle of creation, storage, preservation, dissemination and use of data, information and knowledge [2].

According to Arms a digital library is a managed collection of information with associated services where the information is stored in digital format and accessible over a network [3]. The digital library federation in the USA defines the digital library as: Digital libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity of, and ensure the persistence over time of collections of digital works so that they are readily and economically available for use by a defined community or set of communities. A digital library is an organized collection of digitized material or it's holding in the digital form, which can be accessible by a computer on the network by using TCP/IP or other protocol [4].

The resources of a digital library are those, which the computer can store, organize, transmit and display without any intervening conversion process. It includes both print and electronic or digital material. The digital material may be of multimedia types or any other i.e. only digital audio, video, full text information, photograph, drawing, digitized sound, e-book, electronic tax, map, image, 3D, E-journal, CD-ROM representation etc. The collection may also include structured / unstructured text, scanned images, graphic audios, video recording and etc.,

2. LIMITATIONS OF THE STUDY

Though the research has been properly planned and well executed, there are certain limitations, which are inherent in nature and are out of the researcher's control. The effectiveness of the project is felt only when the results are read along with the limitations and constraints faced during the course of this study. The following are the limitations.

* The responses from the respondents could be casual in nature. This may be due to lack of interest or time on their part.
* The correctness of information provided by the respondents in the personal data could not be established.
* Some of the information provided by the respondents might not be correct.
* Getting timely responses from the respondents was a difficult task.

* The reason for this may be attributed to their busy schedules.

3. OBJECTIVES OF THE STUDY

The objectives of the present task have been stated below:

i. To know the various sources used to digital library.
ii. To identify the purpose of digital library.
iii. To identify the purpose of gathering information through digital library.
iv. To know the users' awareness about the electronic library.
v. To find out the type of internet facilities used by the users.
vi. To find out the awareness and applications of digital library.
vii. To identify the merits and demerits of digital library.

4. METHODOLOGY

A survey method was conducted in digital library of Government Arts College, Kumbakonam, Tamil Nadu through the questionnaires by the method of random sampling. 200 questionnaires were distributed to the selected respondents and researcher has succeeded in collecting 200 filled questionnaires, on which the study has been carried out. Interview schedule was also adopted by the researcher to gather the required data.

4.1 Sampling Size

200 samples were are collected from those users who have been attentively using the libraries. The sample unit consists of users' deal about their awareness of digital library from the libraries by both male and female category of users.

4.2 Procedure Used for Analysing Data

The primary data collection has been processed and analysed in accordance with the various steps such as editing, coding and tabulating.

4.3 Study Area

To analyze the awareness of digital library of the users, the libraries situated in Government Arts College, Kumbakonam, Tamil Nadu have been taken as a study area.

5. ANALYSIS AND DISCUSSION

Table 1 Showing the t-test for Users Awareness of Digital Library on the basis of Sex.

Sex	N	Mean	SD	t-value	LS
Male	91	73.14	5.27	2.66	5%
Female	109	75.71	8.13		

Hy: There is a significant difference regarding the users awareness of digital library on the basis of sex.

Table1shows that the calculated t-value (2.66) which is significant proves that there is a significant difference regarding the users awareness of digital library on the basis of sex. So the stated hypothesis is accepted.

Table 2 Showing One-way ANOVA for Users Awareness of Digital Library on the Basis of Age

Age	N	Mean	SD	F-value	LS
Up to 25	118	77.49	7.62	4.46	0.01%
26 − 35	52	72.24	4.77		
36 − 45	30	71.69	5.46		
Total	200	74.87	7.21		

Hy: There is a significant difference regarding the users awareness of digital library on the basis of age.

Table 2 shows that the calculated F-value (4.46) which is significant proves that there is a significant difference regarding the users awareness of digital library on the basis of age. So it is concluded that young age groups are highly aware of digital library.

Table 3 Showing One-way ANOVA of Users Awareness of Digital Library on the basis of Designation

Designation	N	Mean	SD	F-value	LS
Lecturer	52	73.61	5.38		
Senior–Scale Lecturer	17	74.02	8.31		
Reader	9	82.62	7.26		
Professor	16	74.43	8.42	2.89	0.05
Non – Teaching	13	76.46	4.89		
Students	93	74.89	7.38		
Total	200	74.93	7.15		

Hy: There is a significant difference regarding the users awareness of digital library on the basis of designation.

Table 3 shows that the calculated F-value (2.89) which is significant, proves that there is a significant difference regarding the users awareness of digital library on the basis of designation. So it is concluded that Readers have highly awareness of digital library than the other groups.

Table 4 Showing One-way ANOVA of Users Awareness of Digital Library on the basis of Educational Qualification

Educational Qualification	N	Mean	SD	F-value	LS
Secondary	33	78.05	4.98		
HSC	91	75.05	7.75		
Graduate	34	76.00	8.25	6.74	0.01
Post-Graduate	42	71.21	3.73		
Total	200	74.91	7.11		

Hy: There is a significant difference of users awareness digital library on the basis of educational qualification.

Table 4 shows that the calculated F-value (6.74) which is significantly proves that there is a significant difference regarding the users awareness of digital library on the basis of educational qualification. So the stated hypothesis is accepted.

Table 5 Showing One-way ANOVA of Users Awareness of Digital Library on the basis of Experience

Experience	N	Mean	SD	F-value	LS
Below 5	98	76.04	7.61		
5 to 10	48	71.96	3.18		
10 to 15	44	74.57	6.78	2.55	0.05
Above 15	10	74.58	7.74		
Total	200	74.91	7.11		

Hy: There is a significant difference regarding the users awareness of digital library on the basis of experience.

Table 5 shows that the calculated F-value (2.55) which is significantly proves that there is a significant difference regarding the users awareness of digital library on the basis of experience. So it is concluded that below 5 years experience group have high level of awareness of digital library than the other groups.

Table 6 Showing One-way ANOVA of Users Awareness of Digital Library on the basis of Monthly Income

Monthly Income	N	Mean	SD	F-value	LS
Below 5,000	94	70.12	5.15		
5,001 to 10,000	40	75.46	4.46		
10,001 to 15,000	47	72.11	5.18	3.15	0.05
Above 15,000	19	73.44	6.44		
Total	200	75.44	7.46		

Hy: There is a significant difference regarding the users awareness of digital library on the basis of monthly income.

Table 6 shows that the calculated F-value (3.15) which is significantly proves that there is a significant difference regarding the users awareness of digital library on the basis of monthly income. So it is concluded that below 10,000 monthly income group have high level of awareness of digital library than the other groups.

Table 7 Showing t-test for Users Awareness of Digital Library on the basis of Marital Status

Marital Status	N	Mean	SD	t-value	LS
Married	149	74.12	5.46	2.16	0.05
Unmarried	51	72.45	4.46		

Hy: There is a significant difference regarding the users awareness of digital library on the basis of marital status.

Table 7 shows that the calculated t-value (2.16) which is significantly proves that there is a significant difference regarding the users awareness of digital library on the basis of marital status. So it is concluded that married groups have high level of awareness of digital library than the unmarried groups.

Table 8 Showing One-way ANOVA of Users Awareness of Digital Library on the basis of Religion

Religion	N	Mean	SD	F-value	LS
Hindu	149	75.22	5.22		
Christian	22	71.33	4.22	3.46	0.05
Muslim	29	72.46	5.45		
Total	200	75.13	6.13		

Hy: There is a significant difference regarding the users awareness of digital library on the basis of religion.

Table 8 shows that the calculated F-value (3.46) which is significantly proves that there is a significant difference regarding the users awareness of digital library on the basis of religion.

Table 9 Showing t-test for Users Awareness of Digital Library on the basis of Place of Residence

Place of Residence	N	Mean	SD	t-value	LS
Rural	129	72.45	6.45	2.06	0.05
Urban	71	74.12	5.12		

Hy: There is a significant difference regarding the users awareness of digital library on the basis of place of residence.

Table 9 shows that the calculated t-value (2.06) which is significant proves that there is a significant difference regarding the users awareness of digital library on the basis of place of residence. So it is concluded that the respondents belong to urban areas have high level of awareness of digital alibrary than the rural area groups.

6. FINDINGS OF THE STUDY

Result shows that there is a significant difference regarding the users awareness of digital library on the basis of sex, age, designation, educational qualification, experience, monthly income,marital status, religion, and the place of residence.

7. SUGGESTIONS

Suggestions, opinions and recommendations expressed by the respondents are listed below.

* Digital Library is a great source to the students and teachers to enrich their knowledge. So the University Grand Commission may sanction more fund to improve the infrastructure facilities of college libraries.`
* The digital library should procure new edition of current documents.
* Most of the students have demanded for video display on recent development.
* Inter library loan facilities should be improved.
* Internet facilities should be provided to user community for enrich their knowledge.
* The college should introduce user education programme about digital library to all the students.
* Separate library hours should be allotted in time tables for student.
* The library staff should create awareness about digital library among the students.
* Most of the users have criticized the reprographic service provided by the digital library. An obvious reason for mutilation of CDs indicated by them are that the library has inadequate phtoto coping services.

User suggestions enable a library to become aware of its problems and resolve these in a benefiting manner. If these suggestions are implemented, the user will have greater appreciation and respect the role of digital library and its staff in supporting their academic requirements. This will ensure co-operation and support of the users who will then regard the digital library as their own.

8. CONCLUSION

The research aimed to know how users have awareness of digital library in Government Arts College Library, Kumbakonam, Tamil Nadu.

The result has found that the majority of the faculty memebrs have utilized digital library effectively. At least they spend one hour per day in digital library. They are also satisfied about overall performance of the digital library. But they need to extend the working hours of digital library.

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SYMPTOMS AND STRATEGIES OF TECHNOSTRESS AMONG THE USERS OF SRI NANDHANAM COLLEGE OF ENGINEERING & TECHNOLOGY LIBRARY, TAMIL NADU: A STUDY

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Abstract

Studying the impact of technostress among the students is an interesting one. The students agreed that computers were an important part of daily life and they agreed to learn something about them and feel competent to use them. This research particularly highlights the symptoms of technostress faced by them. The students viewed their suggestions and measures that they would adopt in daily routine to overcome technostress. Thus this research is undertaken in view to eradicate technostress among the students who use the library.

Keywords: *Computer Phobia, Technostress-Strategies, Technostress-Students, Technostress-Symptoms*

1. INTRODUCTION

Sri Nandhanam Educational and Social Welfare Trust founded Sri Nandhanam College of Engineering & Technology (SNCET) in the year 2001.The students who used the library were surveyed and the research was carried out.

The SNCET Central Library caters to the information needs of the faculty, students, staff, and research scholars. It has more than 18000 books covering all disciplines of Science, Engineering, Technology, Humanities & Management. The collection comprises printed books, reports, theses and journal back volumes. The non-book collections include material like audio/video cassettes and CD-ROM discs.

The central library currently subscribes to more than 100 national and 80 international journals in sciences, engineering and humanities. The library provides online access to a large number of full-text journals from IEEE. These databases are accessible on intranet to campus users only.

The library provides various services for its members such as lending of books and journal back volumes, reservation of books, inter-library loan, document delivery, photocopying, CD-ROM, and internet services. All the library activities are computerized, including searching of books in the library through an OPAC (Online Public Access Catalogue) called self-enquiry terminal. The services rendered are Newspaper Clipping Service, Reference Service, Audi-Video Viewing, Internet Access, OPAC, etc. It also subcribes to electronic databases of various subjects.

Today, information technology grows at a faster rate with request to need of information. Due to this rapid changes taken place and new technology into existence, students face a lot of challenges to meet the technological change. This gives raise to stress more in daily life to them when they adopt and compete to the existing situation and new situation. The stress they face with technology is nothing but "Technostress".

Technostress is nothing but stress due to the use of technology. The library users express their symptoms of psychological and physiological changes to the technology like headache, irritation, nightmare, eyestrain, back pain, etc. The library user further express their interest to various measures that they implement in day-to-day life when they use technology and when they possess stress, anxiety, aversion, phobia as result of technology. The users of Sri Nadhanam College of Engineering & Technology are surveyed and the research is carried out.

2. OBJECTIVES OF THE STUDY

i. To study the stress of the library users who use computer in the library for hours together.
ii. To assess the technostress experience by library users due to browsing their computer for information needs.
iii. To identify various symptoms of stress among the library users due to the constant use of computers in the library.

3. SCOPE AND LIMITATION

This study covers the students who use the library computer for their information need. It stresses more importance and symptoms of technostress and measures to fight against it.

Due to the time limit, only 80 samples were collected among the students who visited the library

4. TECHNOSTRESS

Craig Brod, the author who first coined the term 'technostress' defines the phenomenon as "a modern disease of adaptation caused by an inability to cope with new technologies in a healthy manner". Tehnostress is otherwise known as

* Technophobia
* Cyber phobia
* Computer phobia
* Computer anxiety
* Computer stress
* Computer aversion.

According to Davis-Millis, "A condition resulting from having to adapt to the introduction and operation of new technology, particularly when equipment, support or the technology itself is inadequate".

5. REVIEW OF LITERATURE

The literature would seem to indicate that this technostress occurs with relation to age, gender and demographic phenomena. There are number of studies have been undergone by number of authors and researchers in relation to tehcnostress, technophobia, computerstress, computer aversion, etc.

Weil and Rosen build upon this definition by concluding that technostress has a negative impact that technology has, directly or indirectly, on attitudes, thoughts, behaviours, or body psychology [1].

Craig made an analysis of the dramatic impact of new technology on life at work, home, and play explores the potential health, emotional, social, mental, and cultural hazards of our fascination with computer technology. A modern disease of adaptation caused by an inability to cope up with the new computer technologies in a healthy manner. It manifests itself in two distinct ways: The struggle to accept computer technology, and in the more specialized form of over identification with computer technology [2].

Sara Fine describes technostress as an essential process that occurs as a reaction to anxiety over change. This resistance is natural and needs to be respected so that the organization can evaluate the conditions within the organization which are contributing factors [3].

6. DATA ANALYSIS AND DISCUSSION

The survey was done by the method of distributing the questionnaire among the students of SNCET college who comes to use the library. About 80 questionnaires were distributed to the students who uses the library. The results were tabulated and summarized.

Technostress expressed by the library users that is tabulated and summarized below.

Table 1 shows that the symptoms of eyestrain have scored the highest percentage (75%). Out of the total respondents, headache has scored 66.25%, The students sometimes had undergone irritability which scores 22.5%. They also had undergone stress and this leads to nightmares resulting 8.75% which is the lowest of all. They are exposed to eyestrain of about 75%. They also feel back pain of about 55% in daily routine when they use technology.

They undergo pain in hand when they type or do something with the computers acounts (36.25%). Due to advancement in technology they get fatigue of about 18.75%, and their energy level decreases resulting in 32.8%. They have anxiety towards computers of about 21.25%. They have muscle tension of about 26.25% and stomach upset of about 13.75%.

Table 1 Frequency of Symptoms Faced Due to Technostress

Sl. No.	Symptoms	Yes	%	No	%
1	Headache	53	66.25	27	33.75
2	Irritability	18	22.5	62	77.5
3	Nightmares	7	8.75	73	91.25
4	Eyestrain	60	75	20	25
5	Back Pain	44	55	36	45
6	Pain in Hand, Wrist	29	36.25	51	63.75
7	Fatigue	15	18.75	65	81.25
8	Decrease in Energy	26.25	32.8	53.75	67.18
9	Anxiety	17	21.25	63	78.75
10	Muscle Tension	21	26.25	59	73.75
11	Upset Stomach	11	13.75	69	73.75
12	Negative Thinking	9	11.25	71	86.25

It is observed from the Table 2 that the different steps to be taken to overcome the tehnostress are analyzed for research studies and enumerated below.

53.75% of the respondents have given consent to attend workshops and getting hands-on experience. Almost 41.25% of respondents are prepared to present papers in seminars and conferences. 43.75% of respondents agreed to learn and write programs. 27.5% of students have planned to learn computer terminology and all the electronic resources (E-books, E-journal, etc). 33.75% of students agreed to read magazines, journals, articles related to computers.

12.5% of students agreed to learn to use different library automation systems, digital library, OSS, etc., Nearly 36.25% listen to music when they are stressed. 8.75% of students do massage for their body in order to get relaxed. Approximately 33.75% of students agreed to do prayer, yoga and meditation. In order to keep healthy body, 11.25% of students undergo proper diet in daily routine. 35% of students planned to undertake computer course. 26.25% agreed to teach to other students. 20% of respondents planned to visit to leading libraries and to know about the functioning of their library information system.

Table 2 Frequency of Steps to Overcome Technostress

Sl. No.	The Ways to Overcome Stress	Yes	%	No	%
1	Attending to Computer Course	28	35	52	65
2	Attending Workshops and Getting Hands-On Experience.	43	53.75	37	46.25
3	Presenting Papers in Seminars & Conference	33	41.25	47	58.75
4	Learning to Write Programs	35	43.75	45	56.25
5	Learning to Use Different Library Automation Systems, Digital Library, Oss, etc	10	12.5	70	87.5
6	Learning Computer Terminology	22	27.5	58	72.5
7	To Know about all the Electronic Resources. (E-Books, E-Journal, etc)	22	27.5	58	72.5
8	Reading Magazines, Journals, Articles Related to Computers	27	33.75	53	66.25
9	Erasing and Deleting Unwanted Files	20	25	60	75
10	Visiting to Leading Libraries and to Know about the Functioning of their Library Information System	16	20	64	80
11	Teaching other Library User in the Field of Work	21	26.25	59	73.75
12	Regular Exercise	27	33.75	53	66.25
13	Listening to Music	29	36.25	51	63.75
14	Massage	7	8.75	73	91.25
15	Prayer / Yoga	27	33.75	53	66.25
16	Diet	9	11.25	71	81.75

7. CONCLUSION

The students should be ready to face the technological advancement. They have to go for various training courses. They should indulge indifferent activities like yoga, meditation, prayer, etc. The student with their will power and confident and when applying the different strategies as mentioned in this study will definitely overthrow the technostress.

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A BIBLIOMETRIC ANALYSIS OF GENDER STUDIES IN INFORMATICS IN G-8 COUNTRIES

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Abstract

The study reveals research performance of G-8 countries in the field of Gender Studies in Informatics. The study period was from 1991 to 2005. A total of 3861 records were obtained from Engineering village (COMPENDEX and INSPEC) database and analyzed for this study. The study covers the measure of types of publications preferred by relative growth rate and doubling times of the productivity and authorship pattern. Research productivity relative growth rate analysis shows a declining trend and doubling time have increased. Research collaboration has helped to publish more publication.

Keywords: *Bibiliometrics Analysis, G-8 Countries, Gender Studies, Informatics*

1. INTRODUCTION

This article deals with the analysis on the field Gender Studies in Informatics (GSI) during the period 1991 - 2005 obtained from the Engineering village database (*COMPENDEX and INSPEC*). Some analyses have also been carried out by the scholars to identify the research output of GSI of G-8 (US, UK, Canada, France, Germany, Italy, Japan and Russia) countries [1]. In this analysis, a whole bibliographic data investigation part and related to pictorial data and statistical analysis with respect to growth of literature and doubling time, area-wise research output performance of GSI, source-wise research output, country-wise research output, authorship pattern and degrees of collaboration are taken [2].

2. STATEMENT OF THE PROBLEM

The present study aims at analyzing the research output performance of the G-8 scientists in the field of gender studies in informatics [3]. The study of research output in gender studies has received the attention of various researchers, policy makers, and planners. Due to scattering of publications, the findings of this research have not been visible to the policy makers [4]. In order to overcome this problem, this study attempts to convert the publications into a comprehensive database [5]. With respect to the above problem, this research attempts to evaluate the research activity of the Asian continent with their respective countries. The authorship pattern while producing the research output reveals that only multiple authors dominate in publication almost in all countries [6].

3. OBJECTIVES OF THE STUDY

The major objectives are framed for the underlying principle of the present study as mentioned below:

i. To find out year-wise growth of publications on GSI of Engineering Village database.
ii. To find out authorship pattern in the publications.
iii. To find out document type in the publication.
iv. To identify the nature of authorship pattern and determine the degree of collaboration.
v. To suggest a strategy for research development in GSI on the basis of analysis and findings of the study.

4. ANALYSIS AND DISCUSSION

For this study, the research scholar has taken the bibliographic data from Engineering Village database, which includes COMPENDEX and INSPEC. From this analysis, it was found that there is no variation in the distribution research productivity among these databases.

Table 1 Database-wise Research Productivity on GSI

Sl.No.	Database	No of Output	%
1	COMPENDEX	1969	51
2	INSPEC	1892	49
	Total	3861	100

Distribution of database wise research productivity is displayed in the Table 1 . It is interesting to note that the data is taken from the database of COMPENDEX is 51 % and the data taken from the database of INSPEC is 49 %. Both are nearly equal in the research productivity of the GSI publications during the study periods considered for this study.

For this study, the scholars consider the document types which are articles in conference proceedings, articles in journals and research report. The study period is between 1991- 1995.

Table 2 Year-wise Vs Source-wise Publication Output on GSI

Year	CA	%	JA	%	RR	%	Total	%
1991	47	2.7	78	3.8	5	27.8	130	3.4
1992	17	1.0	76	3.7	-		93	2.4
1993	102	5.8	78	3.8	2	11.1	182	4.7
1994	60	3.4	93	4.5	3	16.7	156	4.0
1995	59	3.3	120	5.8	-		179	4.6
1996	69	3.9	106	5.1	2	11.1	177	4.6
1997	129	7.3	122	5.9	-		251	6.5
1998	59	3.3	142	6.9	-		201	5.2
1999	100	5.6	211	10.2	1	5.6	312	8.1
2000	167	9.4	156	7.5	-		323	8.4
2001	111	6.3	145	7.0	1	5.6	257	6.7
2002	168	9.5	235	11.3	1	5.6	404	10.5
2003	188	10.6	162	7.8	3	16.7	353	9.1
2004	214	12.1	175	8.5	-		389	10.1
2005	282	15.9	172	8.3	-		454	11.8
Total	1772 (45.9)	100	2071 (53.6)	100	18 (0.5)	100	3861	100

Table 2 indicates the year-wise Vs document-wise publications of research out put on GSI. It could be noted that out of the total 3891 publications, articles from the conference proceedings constitute 45.9 %; articles from journals constitutes 53.6 % and 0.5 % research reports are distributed respectively. All document types of GSI publication literature have increased in a tremendous manner during the study periods. It could be seen that fifteen years publication, growth has risen thrice starting from 1991 to 2005. Articles from journal constitute during the study period are high. It is observed from this analysis; articles in journals stand first, articles in conference proceedings have the second rank.

Table 3 Country-wise Output from G-8 Countries

Sl.No.	Country	CA	%	JA	%	RR	%	Total	%
1	Canada	87	4.9	133	6.4	1	5.6	221	5.7
2	France	18	1.0	23	1.1	-	-	41	1.1
3	Germany	68	3.8	64	3.1	1	5.6	133	3.4
4	Italy	18	1.0	28	1.4	-	-	46	1.2
5	Japan	133	7.5	120	5.8	1	5.6	254	6.6
6	Russia	10	0.6	10	0.5		0.0	20	0.5
7	UK	153	8.6	334	16.1	1	5.6	489	12.7
8	USA	1285	72.5	1359	65.6	14	77.8	2658	68.8
	Total	1772	100	2071	100	18	100	3861	100

Table 3 reveals the source-wise research output on GSI of 19 Asian countries. From overall output of all sources, it is seen that the publications of articles in conference proceedings have been published in a large numbers. To note that among these eight countries, the research output of USA is 68.8 % . Apart from USA, UK has 12.7 % with first rank; Japan has 6 % with second rank and Canada has 5.7 % with third rank. Remaining countries Italy, France and Russia have themselves with below 1.2 %. Articles in conference proceedings, article in journals and articles research report also have same order from their countries' production of the field on GSI.

Table 4 Country Vs Year-wise Distribution of Research Output on Gender Studies

Sl.No.	Country	I yr	%	II yr	%	III yr	%	Total	%
1	Canada	47	6.4	73	5.8	101	5.4	221	5.7
2	France	5	0.7	10	0.8	26	1.4	41	1.1
3	Germany	24	3.2	46	3.6	63	3.4	133	3.4
4	Italy	5	0.7	10	0.8	31	1.7	46	1.2
5	Japan	34	4.6	76	6.0	144	7.8	254	6.6
6	Russia	03	0.4	05	0.4	12	0.6	20	0.5
7	UK	82	11.1	173	13.7	233	12.5	488	12.6
8	USA	540	73.0	871	68.9	1247	67.2	2658	68.8
	Total	740	100	1264		1857		3861	

Note: I yr: 1991 -1995, II yr: 1996 -2000 and III yr: 2001 – 2005.

Table 4 reveals to the country-wise distribution of the block year wise (i.e., I yr is 1991 – 1995; II yr is 1996 – 2000 and III yr is 2001 – 2005) research output on the field of gender studies in informatics from G–8 countries. Distribution of the research output of the whole taken periods, except USA, UK is having first rank. Followed by Japan, Canada and Germany which are stood next stage of research output on gender studies respectively.

By seeing the individual country-wise, Canada having high productivity during 1991-1995 and it reduces little variation during remaining years. France, Italy, Japan, Russia and UK countries have gradual increase in output on gender studies from starting. Germany and USA countries have declining trend between the taken periods.

Table 5 Priority and Activity Index of Research Output of Year-wise (1991 – 1995)
from G- 8 Countries

Sl.No.	Country	N_{ij}	N_{io} = A	N_{oi}	N_{oo} = B	PI Value	AI Value
1	Canada	47	6.4	221	5.7	1.12	112
2	France	5	0.7	41	1.1	0.64	64
3	Germany	24	3.2	133	3.4	0.94	94
4	Italy	5	0.7	46	1.2	0.58	58
5	Japan	34	4.6	254	6.6	0.70	70
6	Russia	03	0.4	20	0.5	0.80	80
7	UK	82	11.1	488	12.6	0.88	88
8	USA	540	73.0	2658	68.8	1.06	106
Total		740		3861			

Table 5 indicates the activity index and priority index values from G-8 countries output on GSI at article from I year (1991- 1995). While calculated to the priority index; Canada and USA countries have higher than average priority. Remaining countries France, Germany, Italy, Japan, Russia and UK have lower than the average priority.

While calculating the Activity Index; Canada and USA countries have higher activity than the world's average. Remaining countries France, Germany, Italy, Japan, Russia and UK have lower than the average effort dedicated to the field under the taken field.

Table 6 Priority and Activity Index of Research Output of Year-wise (1996 – 2000)
from G- 8 Countries

Sl.No.	Country	N_{ij}	N_{io} = A	N_{oi}	N_{oo} = B	PI Value	AI Value
1	Canada	47	6.4	221	5.7	1.12	112
2	France	5	0.7	41	1.1	0.64	64
3	Germany	24	3.2	133	3.4	0.94	94
4	Italy	5	0.7	46	1.2	0.58	58
5	Japan	34	4.6	254	6.6	0.70	70
6	Russia	03	0.4	20	0.5	0.80	80
7	UK	82	11.1	488	12.6	0.88	88
8	USA	540	73.0	2658	68.8	1.06	106
Total		740		3861			

Table 6 indicates the Activity index and Priority index values from G-8 countries output on GSI at article from II year (1996- 2000). While calculated to the Priority Index; only USA indicates the average priority. Canada, Germany and UK have higher than average priority. Remaining countries ie., France, Italy, Japan and Russia have lower than the average priority.

While calculating the Activity Index; only USA indicates the research effort in the given field corresponding precisely to the world's average. Canada, Germany and UK have higher activity than the world's average. Remaining countries ie., France, Italy, Japan and Russia have lower than the average effort dedicated under the taken field.

Table 7 Priority and Activity Index of Research Output of Year-wise (2001 – 2005) from G - 8 Countries

Sl.No.	Country	N_{ij}	$N_{io} = A$	N_{oj}	$N_{oo} = B$	PI Value	AI Value
1	Canada	101	5.4	221	5.7	0.95	95
2	France	26	1.4	41	1.1	1.27	127
3	Germany	63	3.4	133	3.4	1.00	100
4	Italy	31	1.7	46	1.2	1.42	142
5	Japan	144	7.8	254	6.6	1.18	118
6	Russia	12	0.6	20	0.5	1.20	120
7	UK	233	12.5	488	12.6	0.99	100
8	USA	1247	67.2	2658	68.8	0.98	100
	Total	1857		3861			

Table 7 indicates the Activity index and Priority index values from G-8 countries output on GSI at article from III year (2001- 2005). While calculated to the Priority Index; Germany, UK and USA indicate the average priority. France, Italy, Japan and Russia countries have higher than average priority. Canada is having lower than the average priority.

While calculating the Activity Index; Germany, UK and USA indicate the research effort in the given field corresponding precisely to the world's average. France, Italy, Japan and Russia have higher activity than the world's average. Canada is having lower than the average effort dedicated under the taken field.

Table 8 Relative Growth Rate of Research Output on GSI

Year	R. O/P	Cumulative/P	W_1	W_2	R (a)	Mean (a) 1-2	DT	Mean DT (a) 1-2
1991	130	-	4.8	-	-		-	
1992	93	223	5.4	4.8	0.6		1.15	
1993	182	405	6.0	5.4	0.6	0.36	1.15	1.38
1994	156	561	6.3	6.0	0.3		2.31	
1995	179	740	6.6	6.3	0.3		2.31	
1996	177	917	6.8	6.6	0.2		3.46	
1997	251	1168	7.0	6.8	0.2		3.46	
1998	201	1369	7.2	7.0	0.2	0.2	3.46	3.46
1999	312	1681	7.4	7.2	0.2		3.46	
2000	323	2004	7.6	7.4	0.2		3.46	
2001	257	2261	7.7	7.6	0.1		6.93	
2002	404	2665	7.8	7.7	0.1		6.93	
2003	353	3018	8.0	7.8	0.2	0.12	3.46	6.23
2004	389	3407	8.1	8.0	0.1		6.93	
2005	454	3861	8.2	8.1	0.1		6.93	
Total	3861				3.4	0.22	55.4	3.69

Table 8 witnesses a mean relative growth rate of 0.22. Significantly, the growth rate for the research output of GSI has decreased from 0.6 to 0.1 during the year 1991-2005. The whole study period has witnessed the mean doubling time for the research output on GSI publications as 3.69 other the years. This doubling year increased the value from 1.15 to 6.93 during of 1991 - 2005.

It could be deduced from the above discussion that the mean relative growth rate of research output of publications on GSI has shown an increasing trend. Consequently the mean doubling time for publication has also shown an increasing trend.

Table 9 Degree of Collaboration in Authorship Pattern

Year	Single Authored	Multi Authored	Total	Collaboration
1991	76	54	130	0.41
1992	35	58	93	0.62
1993	107	75	182	0.41
1994	69	87	156	0.55
1995	53	126	179	0.70
1996	52	125	177	0.70
1997	100	151	251	0.60
1998	62	139	201	0.69
1999	136	176	312	0.56
2000	148	175	323	0.54
2001	70	187	257	0.72
2002	119	285	404	0.70
2003	88	265	353	0.75
2004	82	307	389	0.78
2005	105	349	454	0.76
Total	1302 (33.72 %)	2559 (66.27 %)	3861	0.66

Table 9 reveals the degree of collaboration in research output of GSI. The degree of collaboration is 0.66 during the study period. i.e., out of the total 3861 literature published, only 33.72 % of them are published from individual author. 66.27 % of them are published under joint venture publication. Based on this study, the result of degree of collaboration is C = 0.66 i.e, 81 % of collaborative authors' articles are published in the study periods on the field of GSI. It could be noted from this analysis, there are large number of publication under multipleauthors.

6. FINDINGS AND CONCLUSION

It could come to conclusion from the year-wise analysis of the sample data, the research output is increasing tremendous manner after the year 2000. The distribution of database taken for the study from COMPENDEX and INSPEC are in the same frequency. Articles from the journals constitute high publication in the taken sample. (To note that among these eight countries except USA, UK, Japan, Canada, Germany and Italy, they have high research output). It could be detect from the above discussion that the mean relative growth rate is 0.22 and doubling time is 3.69 years. Degree of collaboration is C = 0.66 i.e., 66 % of collaborative authors' articles have been published in the study periods on GSI.

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A STUDY ON PLACEMENT OF INFORMATION TECHNOLOGY PERSONNEL IN THE LIBRARIES OF ENGINEERING COLLEGES IN TAMIL NADU

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Abstract

This paper aims to analyze the placement of Information Technology (IT) personnel in the libraries of engineering college in Tamil Nadu. Before pursuing an empirical analysis with reference to the application of information technology in the libraries of engineering colleges, there is a need to spell out the content and meaning of information technology. It is significant to note that there is direct and well linked relationship between user-size and placement of IT personnel in engineering college libraries in Tamil Nadu

Keywords: *Engineering College Libraries, Information Technology Personnel*

1. INTRODUCTION

The information era has swept the world with powerful force affecting the society [1]. Supported in its entirety by communication technology, information spread vastly, fast and cheaply [2]. The media through which information is disseminated also gets varied in types, further revolutionizing the information era. In the past, there was a significant time lag separating the point when an event took place and the time when the news was publicly available [3]. The scenario has changed now.

Revolution in telecommunication coupled with a rapid development in information technology has changed the routine functioning of libraries throughout the world [4].

The role of engineering colleges in the technical man power development is quite significant [5]. They need rapid dissemination of information, for updating the data about staff and student of the engineering colleges [6].

2. OBJECTIVES

i. To identify the defects and problems in the functioning of library network system in the selected institutions.

ii. To analyse the status of library users and their extent of utilizing network services in the selected institutions.

3. HYPOTHESES

The following hypotheses are formulated, keeping the content and coverage of the framed objectives.

i. The library network environment differs significantly among the selected institutions.
ii. There is a significant inter-institutional variation with respect to placement of IT personnel in library network system.

4. SAMPLING

Tamil Nadu has about 256 engineering colleges and most of them are self-financing colleges. Out of the 256 institutions, 166 institutions are selected as sample for the purpose of present study, representing 65% of the total institutions, in the state.

5. ANALYSIS AND INTERPRETATION

Data presented in Table 1 indicates the college-wise placement of IT personnel in engineering college libraries. It could be noted that out of 166 colleges 52.41% of them have appointed only one network administrator and the rest 47.59% of them have appointed two administrators. Most of the linguistic minority colleges (49.94%) and a two-third of (42.31%) the government and aided colleges have appointed only one network administrator and the situation is quite different in non-minority colleges (48.27%) and religious minority colleges (42.85%).

Table 1 College-wise Placement of IT Personnel in Engineering College Libraries in Tamilnadu

Colleges	Network Administer		Computer Programmers		Data Entry Operators			Technical Assistance			Total
	1	2	1	2	Up to 5	5 to 10	10 to 15	1	2	3	
Government and Aided Colleges	11 (42.31)	15 (57.69)	10 (38.46)	16 (61.54)	11 (42.31)	8 (30.76)	7 (26.92)	13 (50)	8 (30.76)	5 (19.23)	26
Non-Minority wise Previleged Colleges	30 (3.45)	28 (48.27)	21 (36.21)	37 (63.79)	28 (48.27)	19 (32.76)	11 (18.96)	31 (53.45)	18 (31.03)	9 (15.52)	58
Religious wise Previleged Minority Colleges	23 (65.71)	15 (42.85)	11 (31.43)	24 (68.57)	19 (54.28)	12 (34.28)	4 (11.43)	15 (42.86)	12 (34.28)	8 (22.86)	35
Linguistic wise Previleged Minority Colleges	23 (48.94)	21 (44.68)	18 (38.29)	29 (61.70)	36 (76.59)	3 (6.38)	8 (17.02)	9 (19.15)	22 (46.81)	16 (34.04)	47
Total	87 (52.41)	79 (47.59)	60 (36.14)	106 (63.85)	94 (56.63)	42 (25.30)	30 (18.07)	68 (40.96)	60 (36.14)	38 (22.89)	166

The analysis of number of programmers in library computer network reveals the following facts.

It could be noted that out of 166 colleges 36.14 % of them have appointed only one programmer and the rest of them which is more two-third (63.85%) have not appointed any programmers. Two programmers are found in less number in government and aided colleges (61.54%) than in self-financing colleges.

The analysis of number of data entry operators in library network reveals the following facts.

It could be noted that out of 116 colleges, 56.63% of them have appointed below 5 data entry operators. This level of appointment is mainly prevalent in non-minority wise colleges (48.27%) and linguistic minority wise colleges (79.59%).

The total of 116 colleges, 18.07% of them have appointed 5-10 entry operators in library network. Religious minority-wise colleges form the major constituent. Moreover 18.07% of the total 116 colleges have appointed above 10 data entry operators in their library network.

The analysis of technical assistant position in engineering colleges reveal the following facts.

Out of 166 colleges, 40.96% of the colleges have appointed two technical assistants and the rest 22.89 % of the colleges have appointed only one technical assistant. In general, government and aided colleges occupy the first position in placing technical assistants and others lag behind them.

There are a large number of IT personnel in relation to various kinds of self-financing colleges.

Table 2 presents data on the placement of IT personnel in relation their duration. (More than two-third of the short duration colleges have appointed only one network administrator and programmer and below five data entry operators and only one technical assistant). More than a half of the medium duration colleges (46.29%) have appointed two data entry operators and two technical assistants. Most of the medium size colleges (64.81%) have appointed two programmers. More than two-third of long duration colleges have appointed two network administrators (53.24%) and two programmers (54.05%). More than a half of the long duration institutions have appointed 5-10 data entry operators (35.14%) and two technical assistants (29.73%) in their library network.

Table 2 Duration-wise Placement of IT Personnel in Engineering College Libraries in Tamilnadu

Duration	Network Administer		Computer Programmers		Data Entry Operators			Technical Assistance			Total
	1	2	1	2	Up to 5	5 to 10	10 to 15	1	2	3	
Started < 1985	21 (56.75)	16 (43.24)	17 (45.95)	20 (54.05)	16 (43.24)	13 (35.14)	8 (21.62)	20 (54.05)	11 (29.73)	6 (16.22)	37
Started 1985 to 1995	29 (53.70)	25 (46.29)	19 (35.18)	35 (64.81)	32 (59.26)	17 (31.48)	5 (9.26)	26 (48.15)	17 (31.48)	11 (20.37)	54
Started >1995	37 (49.33)	38 (50.66)	24 (32)	51 (68)	46 (61.33)	12 (16)	17 (22.66)	22 (29.33)	32 (42.66)	21 (28)	75
Total	87 (52.41)	79 (47.59)	60 (36.14)	106 (63.85)	94 (56.63)	42 (25.30)	30 (18.07)	68 (40.96)	60 (36.14)	38 (22.89)	166

It could be seen clearly from the above discussions that the short duration is endowed with less IT personnel. In other words when the duration of colleges increase, the placement of network personnel also increases and the vice versa. It is evident that government and aided colleges established long ago, have relatively large number of network personnel in relation to recently established and self-financing colleges.

Table 3 presents data on the user-wise placement of IT personnel in engineering college libraries. It could be noted that most of the large size colleges (52.27%) have appointed only one network administer and majority of them have appointed two programmers (79.54%) below five data entry operators (56.81%) and only one technical assistant. The majority of the medium size colleges have appointed one network administrator (61.53%) two programmers (81.81%) upto five data entry operators (57.69%) and one technical assistant (53.85%).

Table 3 User-wise Placement of IT Personnel in Engineering College Libraries in Tamil Nadu

User Size	Network Administer		Computer Programmers		Data Entry Operators			Technical Assistance			Total
	1	2	1	2	Up to 5	5 to 10	10 to 15	1	2	3	
Above 1750 user (Large)	23 (52.27)	21 (47.72)	9 (20.45)	35 (79.54)	25 (56.81)	11 (25)	8 (18.18)	27 (61.36)	10 (22.72)	7 (15.90)	44
1250 - 1750 user (Medium)	32 (61.53)	20 (38.46)	16 (30.76)	36 (81.81)	30 (57.69)	15 (28.85)	7 (13.46)	28 (53.85)	15 (28.85)	9 (17.31)	52
Below 1250 user (Small)	32 (45.71)	38 (54.28)	35 (50)	35 (50)	39 (55.71)	16 (22.86)	15 (21.43)	13 (18.57)	35 (50)	22 (31.42)	70
Total	87 (52.41)	79 (47.59)	60 (36.14)	106 (63.85)	94 (56.63)	42 (25.30)	30 (18.07)	68 (40.96)	60 (36.14)	38 (22.89)	166

54.28 percent of the small size colleges have placed two network administrators and two programmers (50%). The majority of the small size colleges have given employment to 5-10 data entry operators (22.86%) and two technical assistants (50%).

It could be clearly seen from the above discussion that there is a proportional increase and correlation between user-size and placement of IT personnel in engineering college libraries. It is evident that well established government and aided colleges with small size have appointed relatively more IT personnel than those of recently established large size colleges.

6. CONCLUSION

The findings of the present study lead to the following concluding remarks.

Colleges of short duration are endowed with below mean IT personnel. In other words, when the duration of colleges increases, the placement of network personnel also increases and the vice versa. It is evident that the government and the aided colleges established long ago have relatively large number of network personnel in relation to that of recently established self-financing institutions.

It is significant to note that there is direct and well linked relationship between user-size and placement of Information Technology personnel in engineering college libraries.

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A BIBLIOMETRIC ANALYSIS OF THE JOURNAL OF INFORMATION SCIENCE

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Abstract

This paper examines a bibliometric analysis of the Journal of Information Science (JIS). About 60 articles have been taken from JIS as variables of status of the authors, affiliation, geographical distributions and subjects. In addition, these journals are compared to what is perhaps the leading information science journal, one that has been continuously published in bimonthly. It is found that there are a number of important differences among the journals. These include frequency of publication, publication size, number of authors, and the funding status of articles. And also found differences among journals for distributions of authors by gender and corporate authors by region. Some of the regional differences can be explained by journal maturation - the more mature the journal the greater the dispersion. The fact that a journal is does not appear to affect its presence or "behaviour" as an information science journal.

1. INTRODUCTION

The word Bibliometrics was first used by Alan Pritchard in 1969 in his article "Statistical Bibliography or Bibliometrics"[1]. He defined Bibliometrics as the application of mathematics and statistical methods to book and other media of communication. The British standards Institution defines Bibliometrics as "The study of the use of documents and patterns of publication in which mathematical and statistical methods have been applied" [2].

Hawkins interpreted bibliogrphic feature of a body of literature [3]. Bibliometrics the science of recorded discourse which uses specific methodologies either mathematical or scientific in its research is a controlled study of communication [4].

Bibliometrics is the application of mathematical and statistical methods to publications (from biblos:book and metron: measurement). Bibliometrics is often used to assess scientific research through quantitative studies on research publications [5]. Bibliometrics assessments are based on the assumption that most scientific discoveries and research results are eventually published in international scientific journals where they can be read and cited by other researchers [6]. The number of citations to a journal article can be considered to reflect the article's impact on the scientific community. Applied bibliometrics, as it is used today, analyzes the number of scientific articles published by a selected number of authors, citations to these articles and connections between articles, authors and subjects [7].

2. BIBLIOMETRIC ANALYSES MEASURE

Bibliometric analyses result in indicators of research quantity and performance. They can also provide measurements of connections between researchers and research areas through statistical analysis of co-publications and citations [8]. This part gives a short description of which an analysis can provide bibliometric indicators. The next part will describe how to use data to produce the different indicators.

2.1 Quantity Indicators: Number of Publications and Citations

1. Number of publications and citations: The two most basic bibliometric indicators describe the number of publications and citations attributed to a group of authors (a research group, a department, a university or a country) during a specified time period.

2. Number of publications and citations per researcher is a relative measure. It compensates for the size of the studied unit and therefore indicates scientific output in relation to invested resources.

2.2 Performance Indicators: Normalized Citation Counts

The crown indicator measures the research impact of a group of authors. It compares the average number of citations to the group's publications to the average number of citations to international publications from the same year, in the same subject area and of the same document type.

3. OBJECTIVES OF THE STUDY

i. To determine the growth of the literature in various branches of knowledge in Library and Information Science.
ii. To make a quantitative analysis of the articles published in Library and Information Science journals.
iii. To identify authorship pattern.
iv. To identify the geographical distribution of the contributions.
v. To identify the subject of the articles.
vi. To identify the document type – article, review, note, letter, conference proceeding, etc, and publication year.

4. NEED FOR THE STUDY

At present bibliometric study is gaining momentum. Most of the research activities solely dependent on contribution of journals. The ever increasing price of the periodicals makes it essential to be very selective in purchasing the journals to save limited financial resources. In this context it is inevitable that more productive journals should be selected. Hence it is decided to conduct these studies to assess the contribution of journals in the field of Library and Information Science.

5. SCOPE OF THE STUDY

The main Journals have been taken in this study are:

i. A Journal of Information Science, published by the Institute of Information Scientists by Bowkersaur, a division of Reed Elsevier, UK.

ii. The necessary data was obtained from the Journal of Information Science of 1997 and it is a bi-monthly journal. From these journals, 60 articles were found and the following details from these articles have been taken as variables.
   a. Status of the authors.
   b. Number of authors.
   c. Affiliation of the authors.
   d. Geographical distribution of the authors.
   e. Subject of the articles.
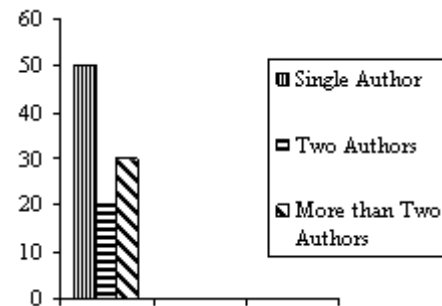
6. ANALYSIS AND INTERPRETATION

Fig.1 Authorship pattern

Figure 1 shows evident that the single author constitutes have been found 50%. The percentage of two authors was found to be 20% and the percentage of more than two authors was found to be 30%.
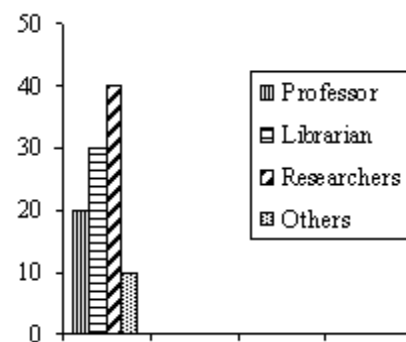

Fig. 2 Status of the first author

Figure 2 shows that the first authors are Professors of Library Schools i.e., Professors constitute 20% whereas library professionals are only 30%. The rest of the categories come below 10%. But in more than 40% of articles, the authors status are Researchers, Directors, Editors and Consultants and they have been included under the variable "Others".
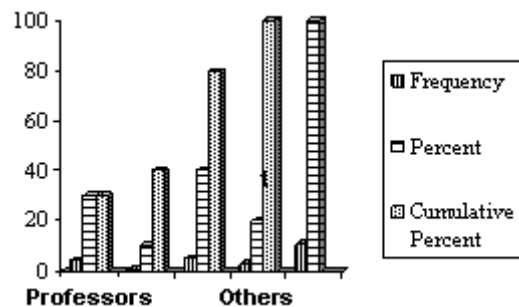
Fig. 3 Status of the second author

Figure 3 reveals the frequency of the status of the second authors, wherein Researchers constitute 40%. The least categories come below 12% constituting the Librarians, Directors, Editors and Consultants and they have been included the categories "Others".
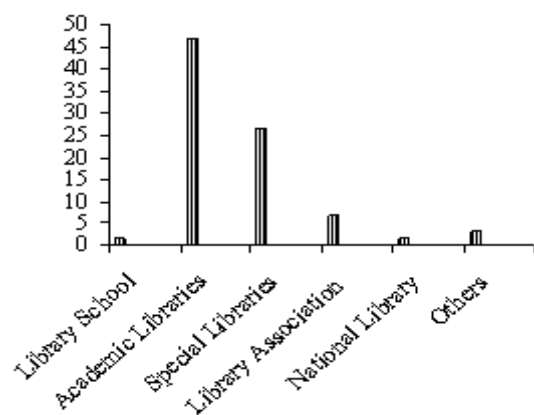

Fig. 4 Affiliation of the first authors

Figure 4 highlights the affiliation of the first authors and it indicates that more than 46% are affiliated to academic libraries 26% of the first author are affiliated to special libraries. Rivers State Library Board, National Library Commission of Libraries and Information Science have been included under the category "Others".

Table 1 Affiliation of the Second Authors

Particulars	Frequency	Percent	Cumulative Percent
Library Schools	3	12	12
Academic Libraries	12	48	60
Special Libraries	6	24	84
Library Association	2	8	92
National Library	1	4	96
Others	1	4	100
Total	25	100	-

Table 1 indicates that more number of the second authors is affiliated to academic libraries. Among different types of libraries the second authors are affiliated to special libraries. The national Library and others of second authors are affiliated equally.
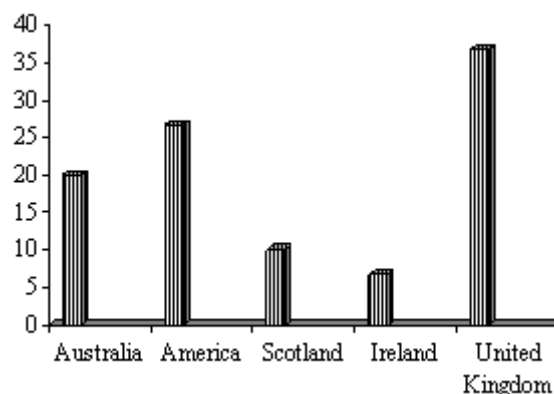
Fig. 5 Geographical distribution of first authors

It has been found from Figure 5 that more than 36% of the first author belong to U.K. (London). The next come America from where more than 26% of authors are originated. Similarly authors from Ireland and Scotland have also published equal number of articles.
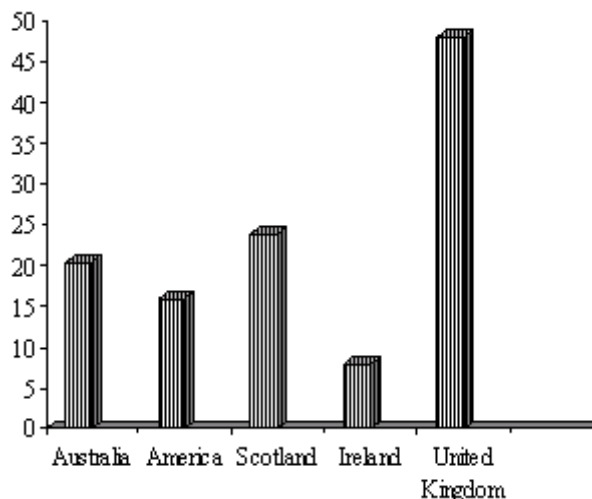
Fig. 6 Geographical distribution of second authors

More number of second authors belong to U.K. and next come to America. After America, it is followed by Australia, Scotland and Ireland.
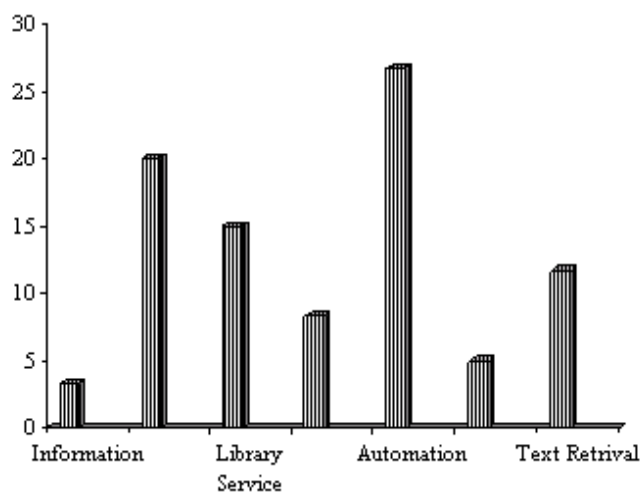

Fig. 7 Subject of the articles

Figure 7 shows that more than 16% of articles have been produced on various aspects of Library Automation, Next comes Man power training and Education, i.e., 12%, 9% of the articles deal with Library Science and 8% in Information Knowledge and Research. The rest of the subjects are found to be less than 7%.

According to the Bar diagram, the ranking of the growth of Literature in Library Science is shown in Table 2.

Table 2 Ranking of Growth of Literature in LIS

Sl. No	Subject	Rank
1	Information Knowledge & Research	4
2	Man power Training & Education	2
3	Library Service	3
4	Library Management	6
5	Automation	1
6	Transport Information	7
7	Text Retrieval Conference/Information Retrieval	5

7. MAJOR FINDINGS

* Frequency table reveals a definite authorship pattern in the journals selected.
* The above finding further is emphasize by the results of chi-square test.
* Authors prefer to write alone than collaborating with others.
* Teachers of library schools contribute more than others.
* Library schools are the major source of the information.
* Academic libraries produce more information when compared to other type of libraries.
* The authors from library schools prefer to contribute with their own colleagues.
* Among the library professionals the first author chooses their co-authors both from academic library and special library.
* More number of first authors are originated from UK.
* The first authors choose their co-authors from their own region and the next best choice for collaboration is the authors from America.
* The subjects concentrated on these journals are man power training on education.
* The documents published in 1997 were more productive since these documents were cited more by the authors.
* More than 60% of information regarding status and affiliation of the authors are given in this journal.

8. CONCLUSION

The Journal included in this study is published in U.S.A. This Journal seems to be better in Library Schools and they have formed the major source of information. But the publishers of JIS should change their policy and insist in publishing the status and the affiliation of the authors since the subject covered in the Journal is on Information Science. It is recommended that libraries can subscribe this journal Since the libraries are providing digital information in the information era.

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Information for Authors

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2. Two copies of manuscript along with soft copy are to be sent.

3. A CD-ROM containing the text, figures and tables should separately be sent along with the hard copies.

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5. Manuscript will be reviewed by experts in the corresponding research area, and their recommendations will be communicated to the authors.

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References

A numbered list of references must be provided at the end of the paper. The list should be arranged in the order of citation in text, not in alphabetical order. List only one reference per reference number. Each reference number should be enclosed by square brackets.

In text, citations of references may be given simply as "[1]". Similarly, it is not necessary to mention the authors of a reference unless the mention is relevant to the text.

Example

[1] K.C.Garg, B.Dutt and Suresh Kumar, "Scientometric Profile of Indian Science as Seen Through Science Citation Index", Annals of Library and Information Studies, Vol. 53 No. 3, 2006, pp.114-125.

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