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CONTENTS

Information Use Behaviour of Working Women in the Associated Cement Company (ACC), Wadi, Gulbarga, Karnataka: A Survey

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Abstract

This study provides an insight into the information use, needs and information seeking behavior of the working women of Associated Cement Company Ltd.(ACC), Wadi, Gulbarga District, Karnataka. Data collected through a structured questionnaire from 100 working women are analysed. The majority of the working women have stressed the need for an adequate and varied reading materials.

Keywords: *Information Sources, Use Behaviour, Working Women*

1. INTRODUCTION

The concept of women in India which is often regarded as best suited to being at home is gradually changing. With the changing economic environment, more and more Indian women who were confined to their household duties are taking up jobs in well-established offices and companies so as to ensure a definite income for them. There are still others, who have their own business and are engaged in other industrial activities, although the number of women in this category is comparatively low [1].

The working women needs constant updating of their knowledge of new changes in order to demonstrate their skill, ability, leadership qualities, job efficiency, as well as knowledge on their rights, duties and limitation. This could be possible through continuous reading, adequate training, education and effective library facilities to support these information needs. While the literacy rate of Karnataka state has increased to 64.04% in the year 2001, the male literacy rate is 76.29% but the female literacy rate in Karnataka remains at 57.45%, which is far below than state average [2].

Reading does not only enrich the mind but also sharpens the intellect of the reader. Reading is therefore, necessary for the working women to develop their personality and to find solutions to problems they encounter not only on the job but also in their day to day life. A library being a service institution can justify its existence only when it satisfies the information requirements of its users. Thus, users' satisfaction is one of the basic objectives of the collection development of any library. To systematically plan the organisation and development of library resources and services, as well as to assess the information needs of the users; user studies are becoming crucial and imperative. The present study, therefore, intends to evaluate and assess the information needs and seeking behaviour of the working women [3].

2. BACKGROUND OF ACC CEMENTS, WADI

The ACC was setup in the year 1968 with an installed capacity of four lakhs per annum of ordinary portland cement clinker, subsequently the capacity was enhanced in two phases to 20 lakhs tonnes per annum. The current capacity after the commissioning of new plant is 40 lakhs tonnes per annum. The factory is situated at the south-central part of the country in the state of Karnataka. It is well connected by rail and road. The nearest important railway junction, Wadi is on the central railway between Solapur and Guntakal. Wadi station is about one kilometer from the plant site. The plant machineries were originally supplied by M/s. Taylor and M/s. ABL and later have been renovated and upgraded over ten years [4].

It is presently one of the largest cement units in India with net assets worth Rs. 2843 crores sales amounting to Rs. 2921 crores and annual revenues of Rs. 3322 crores. Its annual cement production capacity is 15.5 million tons. The company's various businesses are supported by a powerful inhouse research and technology backup facility - the only one of its kind in the Indian cement industry. This ensures not just consistency in

product quality but also continuous improvements in products, processes, and application areas.

Wadi Cement Works manufactures ordinary Portland cement type 43'53 grade (latest version of IS; 8112 and IS; 12269 respectively) and Portland pozzlona cement (latest version of IS; 1489 PART –I) under the brand name ACC SURAKSHA which makes utilization of fly ash up to 25% thereby helping in maintaining pollution free environment. The existing colony of ACC, Wadi is at distances of about 1.2 km. Wadi is a main railway junction on the broad gauge line-connecting Wadi with Mumbai, Hyderabad, Chennai and Bangalore.

3. EMPLOYMENT PROFILE OF ACC LTD, WADI

ACC, Wadi directly and indirectly provides livelihood to 1,00,000 people. It employs about 1600 people as permanent employees and about 500-800 as contract labour. In addition, there are people working as transporter, drivers, cooks etc. Apart from there are a large number of businesses flourishing on account of ACC- these are as diverse as tailoring to pan shops to STD booths etc.

4. HYPOTHESES

One of the positive hypotheses formulated in this study is that, information needs and use behaviour of working women has a definite relation with certain characteristics, like qualification, subject specialisation and the amount of time available at the disposal of each working women. Also, their domestic burdens including the burden of nurturing children might have a substantive influence in keeping the working women away from continuous reading.

5. METHODOLOGY AND SAMPLE

The target population of this study is from the working women of ACC Ltd., Wadi. Since the target population belongs to rural and urban areas and all of them are literate, the questionnaire method has been used for the collection of data required. The population surveyed included exclusively the working women of the Associated Cement Company Ltd., Wadi. Gulbarga District. The questionnaire was personally distributed to a group of selected working women covering different fields of specialization in the industry. On the whole, a total of 125 questionnaires were distributed among the working women of ACC Ltd., Wadi. Out of which only 100 working women have responded to the request with a response rate of 69%. The data was then tabulated and analysed for results and discussions.

6. AIMS AND OBJECTIVES

The basic aims and objectives of the present study are:

i. To identify information needs and use behaviour of the working women in industrial setup;
ii. To find out the amount of time spent in reading and acquiring information;
iii. To identify the libraries and the source(s) of reading materials on which, the working women depend upon;
iv. To identify the information seeking behaviour of the working women in;
v. To identify the major factors that prevents the working women from continuous reading as well as the factors those influence their information use behaviour;
vi. To identify the type and form of sources of information they are interested in; and
vii. To suggest appropriate measures for improvement of the existing library facilities.

7. SCOPE AND LIMITATIONS

The present study is confined to the analysis of information requirements and their use behaviour of working women of Associated Cement Company Ltd., Wadi, Gulbarga District. The following limitations are identified;

i. It investigates the information needs and use behaviour of the working women (limitation by respondent);
ii. It covers the working women of only the Associate Cement Company Ltd. Wadi, Gulbarga District. (by geography);
iii. It considers only those working women having a minimum qualification of matriculation or above (by qualification);
iv. It includes only those working women having their age range of 20 years or above (by age);
v. It covers both married and unmarried working women under its preview (by marital status);
vi. It includes those working women who hold a post not below than the rank of a Class-III employees (by grade);

The women who are unemployed, housewives, paddy workers, holding Class-IV jobs, having below matriculation levels of education, and below 20 years of age are excluded from this study.

8. SAMPLE CHARACTERISTICS

The questionnaires was distributed among 125 working women of Associate Cement Company Ltd., Wadi, out of which only 100 responded, giving a response rate of 69.93%. Among the sample respondents, 37% belonged to the age group of 30-40 years followed by 30% from the age group of 40 to 50 years; 22% belonged to the age group of 20-30 years. Only 5% of the respondents are within the age group of 50-60 years. About 6% of the respondents did not indicate their ages. Out of the total sample respondents, 46% are postgraduates, 39% are graduates and 12% are matriculates. However, only 2% of the sample respondents have the highest academic degree i.e., Ph.Ds and, only 1% of the respondents holds M.Phil degree. Among the total sample respondents 76% are married working women followed by 23% unmarried. On the other hand, only one out of 100 respondents (i.e., 1%) included in the survey is a widow.

9. RESULTS AND DISCUSSION

The data from the 100 questionnaires were classified and tabulated for the purpose of analysis and interpretation. The tabulated data clearly depicts the views of the respondents relating to their information and use behaviour in multifarious dimensions. The Chi square (X^2) test was used to determine the differences in frequency variations of responses and the significance of difference between two independent groups.

9.1 Types of Information Need

Table 1 indicates the ranking order of sample of respondents by their information needs. The study shows that the majority of the working women need information relating to childcare as their first most wanted information followed by home management. They were least interested for information on politics, knitting and on films probably owing to paucity of time. The results imply a significant difference in the opinion of respondents.

Table 1 Ranking Order of the Information Needs of Respondents

Ranking	Vital Information Needs	Utmost Significant	Moderately Significant	Less Significant	Total
1	Child Care	47	14	10	71
2	Home Management	44	38	08	90
3	Govt. Politics, Plans Relating to Women	37	29	14	80
4	Cooking	28	47	18	93
5	Knitting/Weaving	15	35	40	90
6	Films	09	42	36	87
7	Politics	07	27	46	80
Total		187	232	172	591

9.2 Time Spent on Reading and Searching for Information

Table 2 (a) indicates the average time spent in a week by the respondents on reading or searching for information in the subject of their interest. It shows that 28% of the working women read for 1-2 hours a week, while 11% read for less than an hour. However, 21% of the respondents read for more than 6 hours a week in their respective subject fields or specialisation, which is encouraging. Table 2(b) indicates that a major part of the respondents that constitute 44% of the total, keep themselves busy for 1-2 hours in reading other than their field of subject interests. However, 12% of the total respondents are in the habit of reading more than 6 hours a week. Thus, it can be inferred that a large number of respondents spent more than an hour each in reading both in their subject of specialisation as well as on the subjects other than their field of interest which is a healthy trend.

Table 2 (a) Time Spent in a Week on Reading / Searching for Information

Ranking Order	Time Spent in a Week on Subject of Interests	No. of Respondents	%	Cumulative Respondents	Cumulative %
1	1-2hours	28	28	28	28
2	2-4 hours	24	26	54	54
3	4-6 hours	14	14	89	89
4	>6 hours	21	21	75	75
5	< 1 hour	11	11	100	100
Total		100	100		

Table 2(b) Time Spent in a Week on Reading / Searching for Information

Ranking Order	Time Spent in a Week on Other Subject Field	No. of Respondents	%	Cumulative Respondents	Cumulative %
1	1-2hours	44	44	44	44
2	2-4 hours	22	22	66	66
3	4-6 hours	07	07	100	100
4	>6 hours	12	12	93	93
5	< 1 hour	15	15	81	81
Total		100	100		

9.3 Forms of Documents Read

Table 3 shows that 45% of the working women have recorded their interest in reading newspapers as top priority, 46% rated this activity as high priority and only 9% gave this activity as low priority. More than half of the respondents (57%) have recorded their interest in reading drama as low priority. It seems that working women are more interested to know about nascent events rather than the obsolete ideas recorded in books.

9.4 Types of Documents Preferred

Table 4 shows that 60% of the total respondents gave top priority to their habit of using books, while only three (3.7%) of the respondents assign top priority to using the reprints and photocopies. About 48 (50.52%) respondents gave top priority to using reference books followed by current periodicals (34.78%). This indicates that working women hardly pay much attention to research activity owing to certain limitations beyond their control.

9.5 Main Sources of Information

Books are very widely used as the prime source of information as 77% of the total respondents frequently used books to fulfill their information needs (Table 5). On the other hand, 66% of respondents acquire information by discussing with their colleagues/ friends; 58% stated that they frequently depended on newspapers as their source of information; 49% use media reports (viz. TV, Radio) as the prime source of information. The majority of the working women (67%) do not use commercial databases/ information brokers at all to meet their information needs. This could be either due to the non-availability of commercial database and information brokers locally or ignorance about this source.

9.6 Factors which Prevent Respondents from Reading

Domestic burden alone prevents 25% of the total respondents from regular reading, while forces like domestic burden and children's education combined have deprived 23% of the respondents in keeping up their reading habits (Table 6). On the other hand, (i) domestic plus official burden, (ii) domestic and official burden plus children's education; and (iii) only official burden prevent 12% of the total respondents in each category from regular reading. However only 2% of respondents do not read due to lack of their personal interests. Interestingly, only 3 out of 100 working women are able to keep up their regular reading habits, as they reported having no problems at all.

Table 3 Forms of Documents Read by Respondents

Ranking Order	Types of Material Read	Top Priority	High Priority	Low Priority	No. of Responses
1	News Paper	45	46	09	-
2	Research Reports	34	31	23	12
3	Popular magazines	33	58	09	-
4	Science fiction	26	28	37	07
5	Text books	26	45	26	03
5	Short Stories	24	47	24	05
6	Journals	19	42	28	11
7	Humours	16	36	38	10
8	Novels	14	27	52	07
9	Dramas	10	25	57	08
10	Poems	10	32	52	06
11	Travel stories	09	36	49	05
12	Biographies	08	40	48	05

Table 4 Respondents Rating on Types of Documents Used

Ranking Order	Types of Document Used	Top Priority	Middle Priority	Low Priority	Do Not Use	No. of Responses
1	Books	60	28	10	02	-
2	Reference Books	48	21	14	12	05
3	Current Periodicals	32	35	14	07	08
4	Newspaper clipping	14	35	28	13	10
5	Back runs of journals	08	27	33	32	-
6	Reprints & Photocopies	03	14	32	32	19

Table 5 Sources of Information Used to Obtain Information

Ranking Order	Sources	Frequently Used	Moderately Used	Rarely Used	Not Used
1	Books	77	15	08	-
2	Discussions with Colleagues/Friends	66	26	07	01
3	Newspapers	58	30	12	-
4	Media Reports (TV, Radio, ect.)	49	34	08	07
5	Periodical Articles	36	46	11	07
6	Personal Correspondence	18	32	33	17
6	Govt. Publications	14	25	26	35
7	Conference/Seminars/ Workshops Proceedings	12	27	40	21
8	Research Reports	12	17	23	48
9	Primary Data (Collected Through Survey)	09	26	27	38
10	Indexes/Abstracts	07	18	27	48
11	Information Intermediaries	03	12	21	64
12	Commercial Databases/Infor. Brokers	-	15	18	67

Table 6 Factors which Prevented Respondents from Reading

Ranking Order	Factors that Prevents Reading	No. of Respondents	%	Cumulative Respondents	Cumulative %
1	Domestic Burdens	25	25	25	25
2	Domestic Burden & Children's Education	23	23	48	48
3	Domestic & Official Burden	12	12	60	60
4	Domestic, Official Burden & Children Education	12	12	72	72
5	Official Burdens	12	12	84	84
6	Children Education	06	6	90	90
7	Other Problems	05	5	95	95
8	No Problems	03	3	98	98
9	No Personal Interests	02	2	100	100
Total		100	100		

10. SUGGESTIONS

The following suggestions are formulated for developing the reading habits of working women.

i. Every sector of the society especially in the industrial setup should have a library in order to develop the reading interest among the working women.
ii. A library should be established at a central place to exclusively accommodate a collection on and about women with membership facilities open to women.
iii. Every institution/organization to which a library is attached, must ear mark one hour as library hour to encourage reading habits among the employees (working women).
iv. The industrial and local library and some other agencies should conduct meetings on information requirements of working women at frequent intervals.
v. The municipal authorities should establish a library where in a 'Readers profile' (information needs and reading interests of the working women) are recorded as guidance for procuring various reading materials for working women.
vi. The reading materials according to needs should reach the doorstep of every working women through book mobile services once in a week or at regular intervals within the city by the local public library to cultivate a habit of reading among the working women.

11. CONCLUSION

Information is a vital resource to create, maintain and to develop a reading society. Reading is an art and the art of reading is the art of living with the books. Reading not only leads to writing, but also enriches the mind of a reader and sharpens his intellect. Libraries can help in cultivating good reading habits among its readers. A woman, particularly those working and having a good reading habit can face any challenge in her life and can successfully tackle any problems she encounters, be it in a job place or on the domestic fronts.

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Job Satisfaction among LIS Teachers in Karnataka: A Survey

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Abstract

The Karnataka State Library and Infomation Science (LIS) teachers job satisfaction pertaining to motivation among LIS professionals and development in transforming the knowledge in Karnataka Universities. However in-depth analysis has been made in generally to know the strength of LIS teachers in age, gender, caste and religion etc. Based on the survey feed back suggestion has been incorporated, further in generally concentrated on the aspect of job satisfaction. Job satisfaction refers to the feelings and emotional aspects of individual's experience towards their job as different form intellectual of and rational aspects. It refers to a person's feelings of satisfaction on the job which act as a motivation to work.

Keywords: *Job satisfaction, University, LIS teachers*

1. INTRODUCTION

The studies carried out at National and International level a number of countries have drawn attention to the degree of job satisfaction among LIS teachers. The job satisfaction and motivation among LIS teachers in Indian universities plays vital role to help the incumbents. LIS teachers role is to transfer of knowledge in Indian Universities [1]. At the same time, teacher's remuneration is the biggest cost factor in educational finance[2]. In most countries, developing and industrialized alike, teacher's salaries account for between half and three fourth of current education expenditure. In some African countries, their part rise up to 90% (world Bank 2001). Given the magnitude of the financial investment involved, it is extremely important to know whether these funds are use deficiently. In Africa, a major political topic in this context is how to resolve the problems of low teacher motivation and its deter mental effect on student on student achievement. The literature is full of apparently obvious policy recommendations, in particular to raise teacher's salaries and to reduce class size[3]. The link to education quality has been difficult to establish so far, since suitable data on student achievement were missing until late 1990s.

"Job-satisfaction is a primary requisite for any successful teaching and learning process [4]. It is a complex phenomenon involving various personal, institutional and social aspects. If the teachers attain adequate job satisfaction they will be in a position to fulfill the educational objectives and national goals" [5]. Identifying importance of job satisfaction in the life and career of teachers, a study has undertaken to identify the job satisfaction of university teachers. There is no significant influence of age, gender, experience, qualifications, teaching subjects and type of management on the status of job satisfaction of teachers [6].

2. DEFINITIONS OF JOB SATISFACTION

The term 'job satisfaction' is derived from the Latin words 'SATIS' and 'FACERE' meaning 'ENOUGH' and 'TO DO' respectively.

R Hoppock physiological and environmental circumstances that causes a person truthfully to say I am satisfied with my job. In this definition, the underlying assumption is that is possible for the worker to balance satisfaction against specific dissatisfactions and those arrive at composite satisfaction with the job as a whole [7].

In similar Vein, R. P. Bullock has defined job satisfaction has "an attitude which results from a balance and summation of many specific likes and dislikes experienced by an employee in connection with the performance of the job." This attitude manifests itself in an evaluation of the job and of the employee organization.

3. OBJECTIVES

i. To know the overall strength of LIS teachers in Karnataka.
ii. To understand the gender wise and age wise strength of the LIS teachers.
iii. To understand the Caste wise category groups in LIS profession.
iv. To identify the various types of religion they belongs.
v. To know education qualification and associated with profession bodies.
vi. To know the economic reasons and educational developments and status.
vii. To suggest the measures for improving LIS profession.

4. METHODOLOGY

Keeping in view of in view the above objectives in mind, a structured questionnaire was prepared to collect data from the LIS teachers in Karnataka. For this purpose a total of 34 questionnaires were distributed among the LIS teacher in Karnataka. Out of which 20 valid questionnaires were collected and then data were analyzed, tabulated, interpreted and presented in form this paper.

5. DATA ANALYSIS

Table 1Genders-wise Respondents

Sl. No.	Gender	No. of Respondents	%
1	Male	16	80
2	Female	04	20
	Total	20	100

Table 1 depicts that the majority of male LIS teacher leads to 80%. Similarly 20% female LIS teachers are occupied their position. The numbers of male teachers are more than the number of female LIS teachers in Karnataka.

Table 2 shows that number of responding are more in between 35-45 age groups that is leaded in to 75%. Similarly followed by 15% at the age group between (45-55). The rest age group follows 0.05% between 25-35 and 56 and above age group.

Table 3 shows that nine (45%) i. e. General merit candidates are more or employed may be because of the recruitment policy etc. Similarly followed by SC category five (25%) and ST five (25%) category. The remaining one (0.05%) belongs to other Category.

Table 2 Age-wise Respondents

Sl. No.	Age	No. of Respondents	%
1	25-35	01	0.05
2	35-45	15	75
3	45-55	03	15
4	56 & above	01	0.05
	Total	20	100

Table 3 Caste-wise Respondents Groups

Sl. No.	Caste	No of Respondents	%
1	GM	09	45
2	SC	05	25
3	ST	05	25
4	Other	01	0.05
	Total	20	100

Table 4 Religion-wise Respondents

Sl. No.	Religion	No. of Respondents	%
1	Hindu	19	95
2	Muslim	01	0.05
3	Christen	-	-
4	Other	-	-
	Total	20	100

Table 4 shows that 19 (95%) of teachers are belongs to Hindu religion. one (0.05%) are belongs to Muslim religion. Rest shows that there were no teachers belongs to christen community and other religion.

Table 5 LIS Teachers Educational Qualification

Sl. No.	Educational Qualification	No. of Respondents	%
1	BLISc.	02	10
2	M.Lib.Sc/ MLISc.	14	70
3	M.Phil	01	0.05
4	Ph.D	14	70
	Other	09	45

It is evident from above Table 5 that most of the teacher (70%) poses Ph.D with master's degree in Library and Information Science. 14 (70%) are posses MLISc. / MLISc. Similarly about nine (45%) poses additional qualification like computers PGDCA, DCSc and PGDLAN etc. Two (10%) respondents are possesing BLISc.

It is evident from Table 6 that most of the teachers associated with IATLIS, IASLIC, ILA and others some teachers one or more of the three professional organizations. It is also evident that most of the teachers 18 (90%) are not holding membership. IATLIS has getting first rank for having more number of teachers, as comparing in to other professional association body.

ILA has ranked second 17 (85%) of the teachers are holding the membership of ILA. About 14 (70%) are holding membership from other organizations. About 12 (60%) of the teachers are holding membership of IASLIC.

Table 6 Teachers Associated with Professional Organizations

Sl. No	Professional Organizations	No. of Respondents	%
1	IATLIS	18	90
2	IASLIC	12	60
3	ILA	17	85
4	Other	14	70

Table 7 shows that out of 20 teachers 12 are chosen a career in a teaching to fulfill the basic minimum needs to their life and they represents (60%) of the total. Four teachers (20%) are chosen a career in teaching to secure higher standard of living. Two teachers (10%) are chosen a career in teaching to fulfill the desire for economic dependence and followed by two (10%) other reasons.

Table 8 shows that (40%) of the teachers responded that the educational improvement is possible by improving the examination system. (30%) of the teachers are responded that educational improvement is possible by improving educational level of teacher. Remaining six (30%) of the total responded that the educational improvement is possible by discovering new techniques of teaching.

Table 7 Economic Reasons

Sl. No.	Economic Reasons	No. of Respondents	%
1	To Fulfill the Basic Minimum Needs to Life	12	60
2	To Supplement the Income of the Principal Earners	-	-
3	To Support the Demands after the Death of the Breadwinner	-	-
4	To Secure Higher Standard of Living	04	20
5	To Fulfill the Desire for Economic Dependence	02	10
6	Other, if any	02	10
7	Total	20	100

Table 8 Educational Improvement is Possible

Sl. No.	Educational Improvement	No. of Respondents	%
1	Improving Examination System	08	40
2	Improving the Educational Level of Teacher	06	30
3	Modernizing University Building	-	-
4	Discovering New Techniques of Teaching	06	30

Table 9 shows that 100% of the teachers use their own ideas in carrying out their work. All teachers responded that their department has a promotional system which allows the best qualified teachers rise to the top. 95% of teachers maintain duty contacts with their subordinates. 5% of teachers are not maintaining duty contacts. 90% of teachers responded that instructions given by them are carried out. 10% of teachers responded that instruction given by them are not carried out. 90% of teachers are satisfied with the work of their subordinate's staff (10%) are not satisfied. Out of 20 teachers 19 are satisfied with their job and they represents 50% of the total.

6. SUGGESTIONS

i. Proper motivation, good supervisor, incentives, promotional opportunities to update the latest developments with help of orientations, training and workshops programmes should be organized frequently.

Table 9 Present Work Situation

Sl. No.	Work Situation	No. of Respondents	No. of Respondents	%	%
1	Does Your Subordinates Carry Your Instructions?	18	02	90	10
2	Are You Satisfied with the Work of Your Subordinate's Staff?	18	02	90	10
3	Does You Maintain Duty Contacts with Your Subordinates?	19	01	95	05
4	Does You Use Your Own Ideas in Carrying Out Your Work?	20	-	100	-
5	Does Your Department Have Promotional System that allows the Best Qualified LIS Teachers Rise to the Top?	20	-	100	-
6	Are You Satisfied with Your Job?	19	01	95	05
7	Do You Feel that Teaching is an Easy Task/Job?	10	10	50	50

ii. Dedicated involvement in academic activities and it should be in competitive nature. More autonomy should be given to the teaching departments. Regular one week or 15 days training programmes on latest technological facilities must be made available to teachers at the computer lab should developed with higher machine facilities.
iii. Government should concentrate more on inter University faculty exchange program. It should implement uniform syllabus in all universities and semester system should be removed.
iv. Associations and organizations related to the profession has to be conducted more and more workshops to cope up with the latest trends of ICT and its helps for regular updating of individual's knowledge base, improving skill/efficiency.
v. To ensure reasonable salary/incentives, faire/proper promotional opportunities from either side.

7. CONCLUSION

Job satisfaction was brought to limelight by F. Hoppock in 1935 when he published his classic work entitled "Job Satisfaction". It is essentially related to human needs and their fulfillment through work. Actually, job satisfaction is generated by individual's perception of how well his job on the whole is satisfying to his various needs. An individual tries to fulfill his wide variety of needs through his work.

Job satisfaction refers to the feelings and emotional aspects of individual's experience towards his job as different form intellectual of or rational aspects. It refers to a person's feelings of satisfaction on the job which act as a motivation to work. The experience of satisfaction or dissatisfaction with individual's work is the consequence of the extent of his positive or negative Job attitudes. Positive attitude towards the job is conceptually equivalent to job satisfaction. It is only a relative enduring state which undergoes a change with the needs of the individual, the capacity of more situations which fulfills these needs and the individual's own perception of the situation.

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Scientometric Study of Neural Network Research Productivity for the Period 1988-2002

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Abstract

This paper attempts to assess the literature output in the field of Neural Network Research Productivity for the period from l988 to 2002. Statistical analysis has been carried out using SPSS and other relevant measures. Year-wise distribution of Neural Network literature shows 154 (0.4%) articles alone found in the year 1989. During the remaining years, records are found to be added every year. Joint authorship was high (37.6%) followed by three authors (26.6%) and single author (16.8%) contributions. It shows that 96% of articles is in English language followed by Chinese. It is observed that USA has contributed the highest number of records during the study period, followed by Japan and Australia. India ranks 15th among the countries of the total records (20422),48.2% are journal articles while 40.6% includes conference articles.

Keywords: *Scientometric Study, Neural Network Research*

1. INTRODUCTION

Scientometrics is known as a science of sciences. It has gained significance for the simple reason that it is not merely a theoretical discipline, but has extensive applications. It is used to identify the pattern among publications, authorship, citations and behaviour of a subject over a period of time or at a given time and thereby offering insight into the dynamics of the area under study [1&2]. This area of study, emerges as a principal contribution to the development of 'Information Science' as an interdisciplinary field.

Quality and visibility of scientific works are a complex concept for which quantitative studies can provide useful interpretations to support evaluator's work [3]. Documents are considered as significant bibliometric indicators of scientific activities. The dynamism of the discipline can therefore, be marked quantitatively and qualitatively [4]. Hence, it is found interesting to quantify the Neural Network Research Productivity studies are conducted in large numbers by analyzing author collaboration output of publications, which will identify the core areas of research activity, authorship pattern, citation impact factor and other bibliometric indicators. Several studies on author collaboration have been analyzed by different authors in their respective fields.

2. OBJECTIVES

This paper attempts to:

i. Quantity the literature output in the field of Neural Network research for the period between l988 and 2002.
ii. Compare the Indian contributions with those of other countries.
iii. Identify the authorship pattern and collaborative research in the field of Neural Networks.

3. METHODOLOGY

The research is based on the records downloaded from the COMPENDEX database CD-ROM version. The data thus collected on Neural Network research productivity for the period between l988 and 2002 have been analysed and interpreted using various bibliometric techniques. Statistical analysis has been carried out using SPSS.

In addition to the frequency distribution and percentage analysis, the following scientometrics techniques have also been employed in the process of analysis.

- Relative Growth Rate (RGR)
- Doubling Time (Dt)
- Degree of Collaboration

3.1 Relative Growth Rate (RGR)

One of the most obvious features of science in recent years has been its rate of growth. Scientific growth involves not only an increase in manpower but also in finance.

$$1\text{-}2^{\overline{R}} = \frac{\text{Log}_{e\ 2}W - \text{Log}_{e\ 1}W}{2^T - 1^T}$$

where as

$1\text{-}2^{\overline{R}}$ = mean relative growth rate over the specific period of interval.
$\log_{e\ 1}W$ = log of initial number of articles/pages
$\log_{e\ 2}W$ = log of final number of articles/pages after a specific period of interval
$2^T - 1^T$ = the unit difference between the initial time and the final time

The year can be taken here as the unit of time. The RGR for both articles and pages can be calculated separately.

Therefore

$1\text{-}2^{\overline{R}}$ (aa –1 year –1) can represent the mean relative growth rate per unit of articles per unit of year over a specific period of interval.

and

$1\text{-}2^{\overline{R}}$ (pp –1 year –1) can represent the mean relative growth rate per unit of pages per unit of year over a specific period of interval.

3.2 Doubling Time (Dt)

There exists a direct equivalence between the relative growth rate and the doubling time. If the number of articles/pages of a subject doubles during a given period then the difference between the logarithms of numbers at the beginning and end of this period must be logarithms of number 2. If natural logarithm is used, this difference has a value of 0.693.

Thus the corresponding doubling time for each specific period of interval and for both articles and pages can be calculated by the following formula:

$$\text{Doubling time (Dt)} = \frac{0.693}{R}$$

Therefore

$$\text{Doubling time for articles Dt (a)} = \frac{0.693}{1\text{-}2^{\overline{R}}\text{ (aa-1 year -1)}}$$

and

$$\text{Doubling time for pages Dt (p)} = \frac{0.693}{1\text{-}2^{\overline{R}}\text{ (pp-1 year -1)}}$$

3.3 Degree of Collaboration

In order to determine the degree of collaboration of quantity terms, the formula suggested by K. Subramanyam has been used.

The formula is given below:

$$C = Nm / Nm + Ns$$

Where

C = Degree of Collaboration in a discipline
Nm = Number of multiple authored papers
Ns = Number of single authored papers

4. LIMITATIONS

The study is confined to a period of 15 years from 1988 to 2002 based on records downloaded exclusively from COMPENDEX database.

5. DATA ANALYSIS AND INTERPRETATION

A total of 42298 records were collected from the COMPENDEX database on Neural Network research for the period between l988 and 2002 and analysed using various bibliometric techniques.

Table 1 Year-wise Distribution of Neural Network Research Output

Sl. No.	Year	Frequency	%
1	1988	17	-
2	1989	154	0.4
3	1990	1553	3.7
4	1991	2133	5.0
5	1992	1941	4.6
6	1993	3477	8.2
7	1994	4289	10.1
8	1995	4267	10.1
9	1996	4398	10.4
10	1997	4343	10.3
11	1998	3411	8.1
12	1999	3989	9.4
13	2000	3316	7.8
14	2001	3080	7.3
15	2002	1930	4.6
Total		42298	100

Table 1 reveals that the years 1988 and 1989 present a poor performance. The performance was at the peak in 1996, a declining trend is noticed from 2000 onwards till the end of the period under study (i.e., 2002).

The analysis of data on the literature output in Neural Network has been done with parameters such as Relative Growth Rate (RGR) and Doubling Time (Dt).

It is observed from Table 2 that RGR has been decreasing from 1989 (2.31) to 2002 (0.04) during the span of 15 years. Thus it is found that the RGR is on the declining trend (Figure 1).

The Doubling Time (Dt) has shown an increase year after year. The data in Table 2 reveals the value of doubling time is ten years. The Dt has increased from 0.30 in the year 1989 to 16.31 in the year 2002 (Figure2).

Table 2 RGR and Dt for Neural Network

Year	Quantum of Output	Cumulative Total of Output	W_1	W_2	$1 - 2^{\bar{R}(aa^{-1}\,year^{-1})}$ RGR	Dt(a)
1988	17	-	-	2.83	-	-
1989	154	171	2.83	5.14	2.31	0.30
1990	1553	1724	5.14	7.45	2.31	0.30
1991	2133	3857	7.45	8.26	0.81	0.86
1992	1941	5798	8.26	8.67	0.41	1.71
1993	3477	9275	8.67	9.14	0.47	1.49
1994	4289	13564	9.14	9.52	0.38	1.85
1995	4267	17831	9.52	9.79	0.27	2.58
1996	4398	22229	9.79	10.01	0.22	3.16
1997	4343	26572	10.01	10.19	0.18	3.90
1998	3411	29983	10.19	10.31	0.12	5.85
1999	3989	33972	10.31	10.43	0.12	5.62
2000	3316	37288	10.43	10.53	0.10	7.19
2001	3080	40368	10.53	10.61	0.08	9.14
2002	1930	42298	10.61	10.65	0.04	16.31

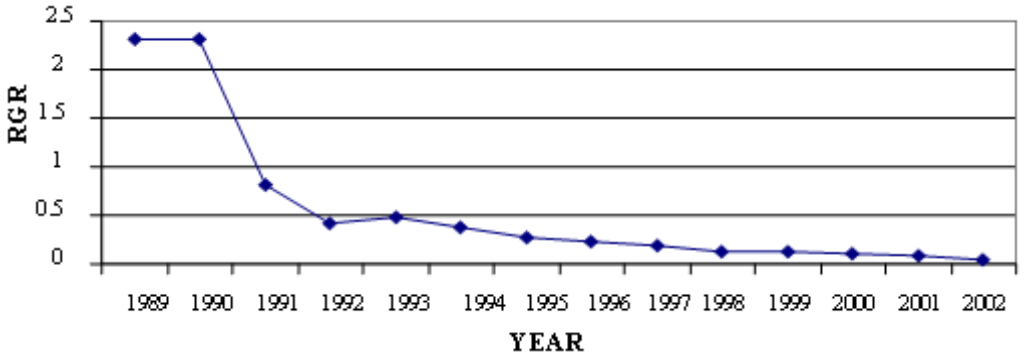

Fig.1 Relative growth rate for neural network

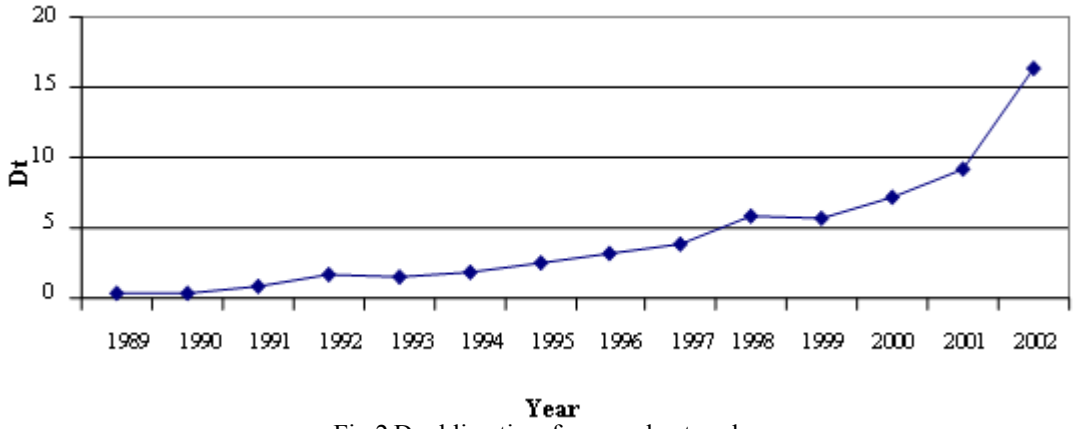

Fig.2 Doubling time for neural network

Table 3 displays the frequency of authorship pattern. According to the categorisation of authors, it is found that jount authorship productivity was high (37.6%) followed by three authors (26.6%) and single author (16.8%) contribution. Hence collaborative research is found to be popular in artificial neural network research.

Table 3 Authorship Pattern

Sl. No.	Number of Authors	Frequency	%
1	Single Author	7100	16.8
2	Two Authors	15915	37.6
3	Three Authors	11268	26.6
4	Four Authors	5052	11.9
5	Five Authors	1789	4.2
6	Six Authors and above	1174	2.8
Total		42298	100

Table 4 Average Degree of Collaboration

Year	Degree of Collaboration
1988-2003	0.83

Table 4 displays the average degree of collaboration which is 0.83 at the aggregate level. This brings out clearly that there exists a higher level of degree of collaborative research in the field of Neural Network.

Table 5 reveals that the articles publications on Neural Networks are in 26 different languages. Of the total, 96% is in English followed by Chinese while other languages scored are negligible.

Table 5 Language-wise Distribution of Records

Sl. No.	Language	Frequency	%
1	English	40433	95.6
2	Chinese	1383	3.3
3	Japanese	190	0.4
4	Russian	83	0.2
5	English ^Japanese	55	0.1
6	German	38	0.1
7	French	35	0.1
8	Spanish	19	-
9	Portuguese	10	-
10	Slovenian	10	-
11	English^ French	7	-
12	English'^German	6	-
13	English^Italian	5	-
14	German'^English	4	-
15	Italian	4	-
16	Japanese^English	4	-
17	Chinese^English	2	-
18	Turkish	2	-
19	English'^Chinese	1	-
20	English'^French-^German	1	-
21	English^Portuguese	1	-
22	English^Serbo-Croatian	1	-
23	French'^English	1	-
24	Polish	1	-
25	Serbo-Croatian	1	-
26	Slovenian''' English	1	-
Total		42298	100

Table 6 shows the country-wise distribution of Neural Network records. It is observed that USA has contributed the highest number. Japan ranks second in the order followed by Australia. Major contribution belongs to Japan followed by Australia. Among the 67 countries, India ranks fifteenth that contributed to Neural Networks research.

Table 6 Country-wise Distribution of Records

Sl. No.	Country	Frequency	%
1	USA.	23301	55.1
2	Japan	2520	5.9
3	Australia	2379	3.2
4	United Kingdom	2181	3.2
5	Italy	1501	3.5
6	Canada	1318	3.1
7	China	1177	2.8
8	Singapore	931	2.2
9	Germany	842	2.0
10	France	537	1.3
11	Greece	515	1.2
12	South Korea	477	1.2
13	Poland	464	1.1
14	Netherlands	439	1.0
15	India	339	0.8
16	Hungary	310	0.7
17	Belgium	297	0.6
18	Hong Kong	285	0.7
19	Switzerland	254	0.6
20	Denmark	232	0.5
21	Taiwan	217	0.5
22	Sweden	216	0.5
23	Czech Republic	191	0.4
24	Austria	188	0.4
25	Russia	188	0.4
26	Israel	174	0.4
27	Mexico	170	0.4
28	Spain	145	0.3
29	South Africa	143	0.4
30	Ukraine	135	0.3
31	Brazil	105	0.3
32	Scotland	104	0.3
33	Croatia	99	0.2
34	Portugal	95	0.2
35	Ireland	83	0.2
36	Turkey	78	0.2
37	Finland	74	0.2

38	Venezuela	66	0.1
39	Oman	59	0.1
40	NLD	56	0.1
41	Puerto Rico	52	0.1
42	Norway	49	0.1
43	Belarus	46	0.1
44	Saudi Arabia	45	0.1
45	Slovenia	43	0.1
46	Egypt	41	0.1
47	Malaysia	34	0.1
48	Slovakia	34	0.1
49	Thailand	24	0.1
50	Cyprus	22	-
51	Argentina	17	-
52	Yugoslavia	12	-
53	Kirgizia	11	-
54	Chile	10	-
55	Romania	9	-
56	Indonesia	8	-
57	Rest	4	-
58	HI	3	-
59	Serbia	2	-
60	United Arab Emirates	2	-
61	Aris	1	-
62	Bulgaria	1	-
63	California	1	-
64	Euven	1	-
65	Korea	1	-
66	Morocco	1	-
67	Montpellier	1	-
Total		42298	100

6. CONCLUSION

A total of 42,298 records were downloaded on Neural Networks covering a period of 15 years spanned between 1988 and 2002. USA ranks first (55.1%) followed by Japan (5.9%) and Australia (3.2%). India occupies the 15th position (0.8%) among the contributing nations. About 95.6% of the total output is in English language, followed by Chinese (3.3%). Of the total research output 20,422 articles (48.3%) in Neural Network research have been published in journals followed by 40.6% in conference proceedings. Journal article pages constitute 44.1% of total pages during the study period. About 17% of the total contributions are by solo research. In other words, collaborative research is found dominated in the subject of study.

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Usage of Electronic Information Resources and Services among the Students of Seemanta Engineering College, Jharpokhria, Orissa: A Study

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Abstract

The importance of electronic resources are rapidly increasing due to the changing approaches of users in the libraries. The electronic and digital libraries have stored and provide e-resources as per the specific demand of the users timely. Hence, the electronic resources and services are now considered as most vital part of library resources. This paper includes the use pattern of electronic resources and services and the type of problems faced by the users while accessing the electronic resources.

Keywords: *Databases, E-Resources, E-Services, Internet*

1. INTRODUCTION

Now-a- days, electronic resources play an important role in the modern libraries due to the rapid advancement of information technologies including the internet and digitizing techniques. The electronic resources include CD-ROMs, e-books, e-journals, e-databases (online databases), e-theses and dissertations (ETD) and websites. These are very popular among all category of users due to their varying characteristics such as easy and remote access, frequent updating, less storage space, easy downloading and user-friendliness.

2. OBJECTIVES OF THE STUDY

The aims and objectives of this study are:

i. To ascertain the availability of electronic information resources in the library which are used mostly by the users.
ii. To ascertain the availability of electronic information services on the library which are used mostly by the users.
iii. To identify the use of internet and web-resources by the users.
iv. To identify the method of accessing information from the CD-ROMs databases and from the web.
v. To know about the impact of electronic information resources and services with the traditional or print resources.
vi. To know about the constraints encountered by accessing electronic information from CD-ROM, databases and web in the library.

3. SAMPLE SIZE

For the purpose of the present study, information pertaining to the "use of electronic resources and services" were collected from 188 students of Computer Science Department of Seemanta Engineering College, Jharpokharia, Orissa, which constituted the major database for this investigation.

4. METHODOLOGY

In the present study, questionnaire method along with direct interview was adopted to collect information from the respondents. A well-structured questionnaire was prepared and the same were distributed to the respondents in person, followed by direct interview with respondents for getting good and correct responses.

5. LITERATURE REVIEWED

Kaur and Verma[1] have made a survey about the use of electronic resources at TIET library, Patiala. This paper also examines the interest of the users about internet, CD-ROM databases and other services provided by the library. Mulla [2] has highlighted in the paper "Electronic Resources and Services in Academic Libraries: A Case Study" about the ways of accessing electronic resources and type of electronic resources and services infrastructure in the academic libraries. Mandal and Panda [3] have jointly conducted a study on e-resources supplied through INDEST consortium and

its impact on 21st century library environment. The study successfully unfolds some reasons for low usage and suggests some remedial steps to improve the use of e-resources and services. Nikam and Pramodini [4] have conducted a study on, "Use of E-journals and Databases Subscribed by UGC-INFONET Consortium by the Users of University of Mysore" examined the utilization and satisfaction levels of users in respect to the e-resources and presents the use of internet by the users of University of Mysore unfolding the usage trend.

6. DATA ANALYSIS AND INTERPRETATION

Table 1 Purpose of Visiting the Library

Sl. No.	Purpose of Visiting the Library	No. of Respondents	%
1	To Borrow/Return Books and Other Materials	146	77.65
2	To Consult Technical Report/Dissertation /Project Report	38	20.21
3	To Use Print Journal	18	9.57
4	To Use E-Journals Subscribed by the Library	38	20.21
5	To Search Internet and Email	70	37.23
6	To Get Photocopy/Xerox	60	31.91

From the analysis of Table 1, it is clear that a majority of (77.65%) respondents have visited the library for borrowing/returning of books and other materials followed by 70 (37.23%) have visited for searching internet and email, 60 (31.91%) have visited the library for photocopy/ xeroxing, 38 (20.21%) have consulted for technical reports/dissertations/project reports and to use e-journals subscribed by the library. A minimum of 18 (9.57%) respondents have visited the library to use print journals.

Table 2 Use of Electronic Resources Available in the Library

Sl. No.	Electronic Information Sources	No. of Responses	%
1	CD- ROM services	90	47.87
2	Online journals	80	42.55
3	E-databases	38	20.21
4	E-theses and dissertation	30	15.95
5	E- books	56	29.78
6	Subject gateways	28	14.89
7	Digital libraries	60	31.91
8	Internet	142	75.53
9	Mailing list	26	13.82
10	Open access resources on web	8	4.25
11	Any other	-	-

The above Table 2 shows that a maximum of 142 (75.53%) respondents have used internet for collecting electronic information in the library, followed by 90 (47.87%) have used CD –ROM services, 80 (42.55%) have used online journals, 60 (31.91%) used digital libraries, 56 (29.78%) for E-books, 38 (20.21%) are using E-databases, 30 (15.95%) are using E-theses and dissertation, 28 (14.89%) are using subject gateways, 26 (13.82%) are using mailing list and a minimum of 8 (4.25%) respondents are using open access resource on web for accessing electronic information in the library.

Table 3 Electronic Services Facilities at the Library

Sl. No.	Electronic Services Facilitated by the Library	No. of Responses	%
1	E-books and E-journals	78	41.48
2	E- databases	84	44.68
3	Online reference services	50	26.59
4	Online public access catalogue	22	11.70
5	Automatic circulation	52	27.65
6	Current awareness services	38	20.21
7	Selective dissemination of information services	10	5.31
8	Email Alert Service	42	22.34
9	Electronic Document delivery Services	26	13.82

It is clear from the analysis of Table 3 that a majority of (44.68%) respondents have used E-databases services facilitated by the library followed by 78 (41.48%) have used E-books and E-journals, 52 (27.65%) have used automatic circulation, 50 (26.59%) have used online reference services, 42 (22.34%) have used E-mail Alert services, 38 (20.21%) have used current awareness service, 26 (13.82%) have used electronic document delivery services, 22 (11.70%) respondents have used online public access catalogue and a minimum of 10 (5.31%) have used selective dissemination of information services facilitated by the library.

Table 4 Time Allocated for Searching the Internet in the Library

Time Allocated for Searching the Internet	No. of Responses	%
One hour per day	46	24.46
Two hours per day	112	59.57
No Restriction	30	15.95

Table 4 shows that a maximum of 112 (59.57%) respondents have used internet for searching information two hours per day, followed by 46 (24.46%) have used internet for searching one hour per day and a minimum 30 (15.95%) respondents have used for searching internet with no time restriction.

From the analysis of Table 5, it is clear that a majority of 76 (40.42%) respondents have accessed information from internet by searching the OPAC by subject, followed by 64 (34.04%) have accessed information from internet using OPAC by Author/ Title, 50(26.59%) have accessed by putting together a search strategy involving features such as Boolean operators and truncation symbols, 48 (25.53%) have accessed lecturer's reading lists held on OPAC, 46 (24.46%) have accessed full text from electronic journals and a minimum 38 (20.21%) respondents have used library web pages to link to electronic resources.

Table 5 Method of Accessing Information from Internet

Sl. No.	Method of Accessing Information from Internet	No. of Responses	%
1	Search the OPAC by Author/ Title	64	34.04
2	Search the OPAC by Subject	76	40.42
3	Access Lecturer's Reading Lists held on OPAC	48	25.53
4	Access Full Text from E-Journals	46	24.46
5	Put Together a Search Strategy Involving Features Such as Boolean Operators and Truncation Symbols	50	26.59
6	Use of Library's Web Pages to Link to Electronic Resources	38	20.21

From the analysis of Table 6, it is clear that a majority of 86 (45.74%) respondents have used electronic information for career or job related information services, followed by 80 (42.55%) have used internet as hobby or interest related information services, 72 (38.29%) have used electronic information for statistical data, 70 (37.23%) have used for newspaper and a minimum of 30 (15.97%) respondents have used electronic information as reading recommended for course mark.

Table 6 Use of Electronic Information Services

Sl. No.	Electronic Information Services	No. of Responses	%
1	Reading Recommended for Course Mark	30	15.95
2	Statistical Data	72	38.29
3	Hobby or Interest Related	80	42.55
4	Career or Job Related	86	45.74
5	Newspaper	70	37.23

Table 7 Rating of Electronic Information Services for Studies

Sl. No.	Rating of Electronic Information Services for Studies	No. of Responses	%
1	Essential	56	29.78
2	Of Some Use	78	41.48
3	Of Little Use	62	32.97
4	Use Less	14	7.44

From the analysis of Table 7, it is clear that a majority of 78 (41.48%) respondents have suggested as the electronic information services are of some use for studies, followed by 62 (32.97%) have gave opinion as of little use, 56 (29.78%) have opted as essential and a minimum of 14 (7.44%) respondents have gave their opinion as the electronic information services are of useless.

Table 8 Role of Library for Promoting the Use of E-Resources in the Library

Sl. No.	Role of Library for Promoting E-Resources in the Library	No. of Responses	%
1	Providing Links from Library Home Page	66	35.10
2	Conduct Orientation Programme for Users	64	34.04
3	E-mail/Internet Mailing List	82	43.61
4	Guides and Tutorial (printed/electronic)	64	34.04
5	Posters	30	15.95

From the analysis of Table 8, it is clear that a majority of 82 (43.61%) respondents are using E-resources by E-mail/Internet mailing list, followed by 66 (35.10%) are using links from library home page, each of 64 (34.04%) from orientation programme for users and from guides/tutorial (printed/electronic) and a minimum 30 (15.95%) have opted for using poster.

Table 9 Method of Learning for Use Electronic Resources

Sl. No.	Method of Learning for Use of Electronic Resources	No. of Responses	%
1	Trail and Error	12	6.38
2	Audience from other Students	22	11.70
3	Guideline from Library Staffs	44	23.40
4	Self Taught	84	44.68
5	Courses Offered by Universities and Colleges	56	29.78
6	Guidance from Lectures	64	34.04
7	Guidance from Computing Staff	66	35.10
8	External Courses	28	14.89

It is observed from the Table 9 that a majority of 84 (44.68%) respondents have learnt from self study, followed by 66(35.10%) through guidance from computing staff, 64 (34.04%) have guidance from lecturers, 56 (29.78%) have learn from courses offered by Universities and 44 (23.40%) by the guidance from library staff, 28 (14.89%) from external courses, 22 (11.70%) from guidance of other students and a minimum 12 (6.38%) respondents have learnt to use electronic resources by trail and error method.

From the analysis of the Table 10, it is clear that a maximum of 68 (36.17%) respondents have used ASME journals, followed by each of 32 (17.02%) have used ACM digital library, JEEE /TEE (Electronic Library Online), Elsevier Science Direct and ACM Digital Library, followed by 30 (15.95%) have used EBSCO database and Nature, 26 (13.82%) have used ASCE Journals and ASTM standards, 20 (10.63%) have used Springer link and a minimum 10 (5.31%) respondents have used Pro-quest science in the library.

Table 10 Use of Full Text Databases of INDEST and AICTE E-Resources in the Library

Sl. No.	Full Text Databases	No. of Respondents	%
1	ACM Digital Library	32	17.02
2	ASCE Journals	26	13.82
3	ASME Journals	68	36.17
4	ASTM Standards	26	13.82
5	EBSCO Database	30	15.95
6	JEEE/TEE (Electronic Library online)	32	17.02
7	Insight	32	17.02
8	Nature	30	15.95
9	Proquest Science	10	5.31
10	Elsevier Science Direct	32	17.02
11	Springer Link	20	10.63

Table 11 Use of Bibliographic Databases of INDEST and AICTE E-Resources in the Library

Sl. No.	Bibliographic Databases	No. of Responses	%
1	Compendex on EI village	26	13.82
2	INSPEC on EI village	54	28.72
3	J-GATE Custom Content for Consortia (JCCC)	38	20.21
4	Math Sci Net	34	18.08
5	SCI finder Scholar	40	21.27
6	Web of Science	84	44.68

It is seen from the Table 11 that a majority of 84 (44.68%) respondents have used the bibliographic databases as web of science followed by 54 (28.72%) are using INSPEC on EI Village, 40 (21.27%) are using SCI finder Scholar, 38 (20.21%) are using J-GATE Custom content for consortia (JCCC), 34 (18.08%) are using Math Sci Net and a minimum 26 (13.82%) respondents have used COMPENDEX on EI village in the library.

It is clear from Table 12 that a majority of 88 (46.80%) respondents have opted E-resources as easier access to information, followed by 72 (38.29%) have opted as faster access to information, 54 (28.72%) have opted as accessed to current information and a minimum of 22 (11.70%) respondents have gave opinion as accessed to a wider range of information which might improve their academic career.

Table 12 Role of Electronic Resources in Improving Academic Career

Sl. No.	Role of E-resources in Improving Academic Career	No. of Responses	%
1	Access to current up to date information	54	28.72
2	Easier access to information	88	46.80
3	Faster access to information	72	38.29
4	Access to a wider range of information	22	11.70

Table 13 Type of Problems Usually Encountered by Accessing Electronic Information

Sl. No.	Type of Problems Encountered by Accessing E- Information	No. of Responses	%
1	Inadequate number of PCs	80	42.55
2	Lack of time	96	51.06
3	Lack of support from library staff	08	04.25
4	Insufficient skill in handling IT tools	48	25.53

From the analysis of the Table 13 it is clear that a majority of 96 (51.06%) respondents have faced problems by lack of time, followed by 80 (42.55%) have faced problem as inadequate number of PCs provided by the institute, 48 (25.53%) have faced by insufficient skill in handling IT tools and a minimum of 8 (04.25%) respondents have faced problem by lake of support from library staffs in accessing electronic information resources in the institute.

7. FINDINGS

From the analysis of collected data, some useful findings have drawn which are represented in the following:

i. A majority of 142 (75.53%) users are frequently use internet followed by 90 users (47.87%) are using CD-ROM services and 80 users ae (42.55%) using online journals and a minimum of 8 users (4.25%) are using open access resources on web.
ii. In order to ascertain the time of searching the internet in the library, a majority of (59.57%) have used two hours per day.
iii. The method of accessing information from internet was found that most of the users accessing

information from internet through searching the OPAC by subject.

iv. A maximum of 86 (45.74%) respondents use the electronic information services for career or job related and a minimum of 30 (15.95%) are using for reading recommended for course mark.

v. In order to ascertain the role of library for promoting the use of e-resources in the library, a maximum of 82 users (43.61%) have suggested for providing e-mail / internet mailing list, whereas a minimum of 30 users (15.95%) have suggested for providing posters for promoting the use of e-resources in the library.

vi. The method of learning for use of electronic resources was found that a maximum of 84 respondents (44.68%) have learnt by self-taught, and a least number of 12 (6.38%) have learnt by trail and error method.

vii. In order to ascertain the use of full text data bases of INDEST and AICTE e-resources that a maximum of 63 (36.17%) users are using ASME journals where as a minimum of 10 users (5.31%) are using Proquest science. In addition to this, it was found for the use of bibliographic databases of INDEST and AICTE e-resources that a maximum of 84 (44.68%) are using web of science and a minimum of 26 (13.82%) are using Compendex on EI Village.

viii. In order to ascertain the type of problems usually encountered by accessing electronic information that a majority of 96 (51.06%) have suggested for lack of time and a minimum of 8 respondents (4.25%) have suggested for lack of support from library staff.

8. SUGGESTIONS

There are a number of suggestion as given by the respondents are represented below.

i. To provide more number of CD-ROM services.
ii. To provide e-Journals and e-books.
iii. More number of PCs with LAN connection are to be required.
iv. Sufficient time should be given to use e-resources.
v. To provide mailing list and subject gate ways.
vi. To provide more number of e- databases.
vii. To provide digital library services.
viii. To provide internet facility.
ix. More number of trained staff should be engaged in this purpose.
x. Automatic circulation system should be adopted in the library for easier access to information.
xi. Requirements of e-mail alert services.
xii. To provide e-thesis and dissertation.
xiii. To provide links to library home page.

9. CONCLUSION

Academic libraries not only from the pool of high-quality information resources constituting the basis of research, they also disseminate the information in it. Academic libraries are vital players in the research food chain. The increasing use of the World Wide Web has developed awareness and concerns about access and retrieval of information across networks. It puts emphasis on cooperative collection development policies suited to the current philosophy of providing access to information though a sharing mechanism, stress the need of improving the quality of library services through it, and also discuss its advantages. In the present society, academic libraries have to meet diverse, multifaceted and multidimensional information needs of their users. Academic libraries play a very important role in a academic institute. Users of academic libraries are more specific. They know what exactly they require. So to fulfill their requirements, librarians have to use electronic resources to provide information services to patrons.

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Internet Usage by Research Scholars and Members of Faculty in M.Kumarasamy College of Engineering, Karur, Tamil Nadu: A Study

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Abstract

Internet is believed to be a very powerful tool for information searching. Today from teens to old persons, everyone is using internet. The researchers and faculty in the discipline of Engineering are not exception to it. The present paper reports the results of a study through questionnaire conducting on the research scholars and members of faculty in engineering discipline. The results indicate that 96.55% of respondents have the knowledge of computers. Majority of respondents know the basic tools and techniques of internet. All the respondents make use of internet. The purpose of using internet is sending and receiving e-mail, visiting websites, chatting, reading newspaper, online learning and accessing the e-journals, etc. The internet facility available in central library is being used more frequently by the researchers and faculty in Engineering as compared to other places of internet like cyber café, etc.

Keywords: *Academics, Internet Usage, Online Learning*

1. INTRODUCTION

Recent developments in computer, communication and networking technology have given new meaning to information retrieval systems. Today information sharing is achieved through networks [1]. The network of network on the global scale is known as the internet, the information super highway, and it is growing at the rate of 10% monthly, connecting 1,300,000 domains having about 500 million users. Of all the technological developments that have taken place in the last century, the internet is the one that has had the most profound impact globally. The research scholars and members of faculty in any research organization make use of internet [2].

2. OBJECTIVES

The specific objectives of the study are as under:

i. To determine computer literacy among research scholars & members of faculty.
ii. To identify their awareness about internet & its tools.
iii. To determine the use of internet in their study & research work.
iv. To assess internet facilities provided by the central library.
v. To study their purpose of using the internet.
vi. To study the problems faced by them in using internet.

3. RELATED STUDIES

Asemi studied that all the respondents were using the internet frequently because all faculties were provided connection to the internet. It was revealed that the researchers of the University were getting quality information through the internet. 55% of the respondents searched for scientific information through the internet because the University library had provided access to various databases and online journals for all the students and staff [3].

Yadav Mishra, and Bisht conducted a study to know internet utilization pattern of the undergraduate students of G B Pant University of Agriculture and Technology, Pantnagar [4]. The findings of the study indicated that a majority of the students (85.7%) used the internet. Out of the internet users, 67.7% were male students and 32.3% are female students. The findings of the study also showed that 61.5% of the males and 51.6% of

females used internet for preparing assignments. A majority of the respondents i.e. 83.1% male and 61.3% female respondents indicated that they faced the problem of slow functioning of internet connection [5].

4. METHODOLOGY

The study has been conducted through the survey method of research. A structured questionnaire was designed and used for collecting the data. The sample for the study was selected purposefully because the research scholars and faculty in Engineering have been noticed in the internet use more frequently. The questionnaires were distributed among 112 faculty members and research scholars. Out of which as many as 58 filled in useable questionnaires were received back. The data so obtained was coded and analyzed with the help of SPSS (Statistical Package for Social Sciences). The data is also analyzed on the basis of independent variables like Status and Gender of the respondents.

5. RESULTS AND DISCUSSION

First of all, for using the internet, basic knowledge of computer is essential. The study found that 100% of the respondents have the basic knowledge of computers.

Table 1 Basic Knowledge of Computers among Respondents

Sl.No.	Knowledge of Computers	Male	(%)	Female	(%)	Total	(%)
1	Yes	24	41.38	34	58.62	58	100
2	No	-	-	-	-	-	-

Table 2 shows that 25 respondents (43%) know the internet and its tools to full extent. In this, there were 12 males (21%) and 13 females (22%) respondents. Whereas 33 respondents (57%) know it to some extent only. Out of 33 respondents, there were 12 males (21%) and 21 females (36%).

Table 2 Knowledge of Internet and its Tools

Sl. No.	Knowledge of Internet and its Tools	Male	(%)	Female	(%)	Total	(%)
1	To Full Extent	12	20.68	13	22.41	25	43.10
2	To Some Extent	12	20.68	21	36.21	33	56.90
3	Not at All	-	-	-	-	-	-

Table 3 reveals that majority of respondents (79.31%) use the internet for sending and receiving e-mails, visiting websites, on-line learning and accessing e- documents. 11 respondents (19%) use it only for online learning and accessing e-documents.

Table 3 Purpose of Using Internet

Sl. No.	Purpose of Using Internet	Male	(%)	Female	(%)	Total	(%)
1	Sending and Receiving mails	1	1.72	-	-	1	1.72
2	On-line learning and accessing e-documents	4	6.90	7	12.07	11	18.97
3	All mentioned	19	32.76	27	46.55	46	79.31

As far as the usefulness of the internet is concerned (Table 4) 46 respondents (79%) mentioned that it is very useful in their research and teaching. Another 12 respondents (21%) mentioned that it is useful in their research and teaching. On the basis of their sex, 21 male respondents (36%) assessed the internet very useful whereas three (52%) have mentioned that it is useful. 25 (43%) female respondents assessed it as very useful and rest of nine (15.52%) have mentioned as useful. The results indicated that the research scholars and lecturers have assessed internet more useful as compared to the readers and professors.

Table 4 Usefulness of Internet

Sl. No.	Usefulness of Internet	Male	(%)	Female	(%)	Total	(%)
1	Very Useful	21	36.21	25	43.10	46	79.31
2	Useful	3	51.72	9	15.52	12	20.69
3	Not Useful	-	-	-	-	-	-

Table 5 reveals that 13 respondents (22.41%) most frequently use the internet whereas 29 respondents (50%) use it frequently in the central library. Twelve respondents (20.69%) use internet occasionally whereas only four respondents (6.90%) rarely use internet in central library. As many as six, 13, five male respondents and seven, 16, seven female respondents use internet in central library most frequently, frequently and occasionally respectively. Only four female respondents rarely use internet in central library.

The research scholars have been found using internet in central library more frequently as compared to the members of faculty.

Table 5 Use of Internet in the Central Library

Sl. No.	Use of Internet in the Central Library	Male	(%)	Female	(%)	Total	(%)
1	Most Frequently	6	10.34	7	12.07	13	22.41
2	Frequently	13	22.41	16	27.59	29	50.00
3	Occasionally	5	8.62	7	12.07	12	20.69
4	Rarely	-	-	4	6.90	4	6.90

Table 6 shows that only eight respondents (13.79%) most frequently use internet at a place other than the central library whereas 15 respondents (25.86%) use it outside the central library frequently and same number rarely. Twenty respondents (34.48%) occasionally use internet at a place other than central library.

Table 6 Use of Internet at a Place other than Central Library

Sl. No.	Use of Internet Other than Central Library	Male	(%)	Female	(%)	Total	(%)
1	Most Frequently	3	5.17	5	8.62	8	13.79
2	Frequently	8	13.79	7	12.07	15	25.86
3	Occasionally	9	15.52	11	18.97	20	34.48
4	Rarely	4	6.90	11	18.97	15	25.86

Table 7 shows that 31 respondents (53.45%) spend one hour daily on internet surfing in central library whereas sixteen (27.59%) spend less than half an hour daily. Only five respondents (8.62%) spend about two hour daily on internet surfing in central library whereas six respondents (10.34%) spend more than two hours daily. The results show that female respondents spend slightly more time on internet surfing in the central library as compared to male respondents.

Table 7 Time Spent Daily in Central Library

Sl. No.	Time Spent Daily in Central Library	Male	(%)	Female	(%)	Total	(%)
1	Less than Half an Hour	8	13.79	8	13.79	16	27.59
2	About on Hour	14	24.14	17	29.31	31	53.45
3	About 2 Hours	2	3.45	3	5.17	5	8.62
4	More than 2 Hours	-	-	6	10.34	6	10.34

Table 8 reveals that 18 respondents (31.03%) spend less than half an hour daily on internet surfing at a place other than the central library whereas 28 respondents (48.28%) spend one hour daily. Only five respondents (8.62%) spend about two hour daily on internet surfing at a place other than central library whereas seven (12.07%) spend more than two hours daily. Hence it can be stated that the research scholars and faculty in Engineering use the internet at central library and other places almost equally.

Table 8 Time Spent at a Place other than Central Library

Sl. No.	Time Spent at a Place Other than Central Library	Male	(%)	Female	(%)	Total	(%)
1	Less than Half an Hour	9	15.52	9	15.52	18	31.03
2	About on Hour	10	17.24	18	31.03	28	48.28
3	About 2 Hours	3	5.17	2	3.45	5	8.62
4	More than 2 Hours	2	3.45	5	8.62	7	12.07

Table 9 reveals that only four respondents (6.90%) are fully satisfied with the speed of internet in central library whereas 32 respondents (55.17%) are little satisfied with the speed. There is no significant difference on the basis of their gender and status as far as speed of internet in central library is concerned.

Table 10 shows that thirty six respondents (62.07%) are satisfied to some extent on the availability of nodes in the central library whereas only two respondents (3.45%) are fully satisfied. Another twelve respondents (20.69%) are dissatisfied with the availability of nodes whereas eight respondents (13.79%) are not satisfied at all.

Table 9 Satisfaction Over Speed of Internet

Sl. No.	Satisfaction Over Speed of Internet	Male	(%)	Female	(%)	Total	(%)
1	Fully Satisfied	3	5.17	1	1.72	4	6.90
2	Little satisfied	12	20.69	20	34.48	32	55.17
3	Dissatisfied	7	12.07	11	18.97	18	31.03
4	Strongly Dissatisfied	2	3.45	2	3.45	4	6.90

Table 10 Satisfaction Over Availability of Nodes

Sl. No.	Satisfaction Over Availability of Nodes	Male	(%)	Female	(%)	Total	(%)
1	Fully Satisfied	1	1.72	1	1.72	2	3.45
2	Little satisfied	13	22.41	23	39.66	36	62.07
3	Dissatisfied	6	10.34	6	10.34	12	20.69
4	Strongly Dissatisfied	4	6.90	4	6.90	8	13.79

Table 11 Staff Support in Library

Sl. No.	Library Staff Support in Library	Male	(%)	Female	(%)	Total	(%)
1	Most Frequently	6	10.34	8	13.79	14	24.14
2	Frequently	8	13.79	12	20.69	20	34.48
3	Occasionally	8	13.79	8	13.79	16	27.59
4	Rarely	2	3.45	4	6.90	6	10.34

Table 11 reveals that 14 respondents (24.14%) mentioned that the library staff in internet lab most frequently help them whereas 20 (34.48%) respondents mentioned that they help frequently. 16 respondents (27.59%) mentioned that library staff in internet lab occasionally help them whereas six respondents (10.34%) mentioned that rarely help them.

6. CONCLUSION

The results of the study indicate that the internet facilities in the central library are being used very well by the research scholars and members of faculty in Engineering of M.Kumarasamy College of Engineering, Karur, Tamil Nadu. The major problems of the respondents are down of internet server, speed of internet and timings of the internet lab in Library. As library professionals are well versed with indexing and searching techniques, these techniques can be taught to the users of internet. The library should take some steps for enhancing the speed of internet and timings. The librarian and information professional has a vital role to play in supplying the right information to the right people at the right time. This slogan deserves that libraries in every corner of our country should be glued together with the internet.

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Information Seeking Behaviour among Dentists in Chennai, Tamil Nadu: A Study

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Abstract

A library's objectives are to meet the needs of its users's, but the explicit commitment to user's needs requires the librarian to examine user's behaviours as a first step to determining policy. This paper studies the information seeking behaviour among Dentists in Chennai, Tamil Nadu. A structured questionnaire was sent to 100 Dentists in Chennai and 69% of the questionnaires were filled and received from them. It emphasized that the existing infrastructure in terms of collection, services and other facilities in the libraries of Dental Educational Institutions are to be strengthened.

Keywords: *Dentists, Information Seeking Behaviour*

1. INTRODUCTION

Today, information is an important ingredient in every walk of life, and it has become an indispensable raw material for right decision making from the personal level to the governmental level. It is a well accepted generalization that a country, which is rich in information, is rich in the field of socio-economic spheres. With the growth of information deluge, each one needs an increasing variety and diversity of level, frequency, volume and use. User studies are to be recognized as an important part of the information packages. Information providers like the library and information centers need to be aware of their users' information requirements as well as their information seeking and information retrieving methods in order to that they might be able to provide better services. This study is an attempt in understanding the information needs and the information seeking behaviour of Dentists in Chennai, Tamil Nadu.

2. CONCEPT OF INFORMATION SEEKING BEHAVIOUR

Information seeking behaviour is the human behaviour with respect to searching various sources, channels including use of those information. The terms, 'Information Seeking Behaviour', 'Information Seeking Behaviours' and 'Information Using Behaviour' are synonymous terms.

Taylor defines information behaviour as the product of certain elements of the information user environment [1]. The elements are:

i. The assumption formally learned or not, made by a defined set of people concerning the nature of their work.
ii. The kinds and structure of the problems deemed important and typical by this set of people.
iii. The constraints and opportunities of typical environments within which any group or subgroup of this set of people operates and works.
iv. The conscious, and perhaps unconscious, assumptions made as to what constitutes a solution, or, better said, a resolution of problems, and what makes information useful and valuable in their contexts.

Based on the definition Taylor believes that the information behaviour of different groups of people is also different.

Wilson defines the "Information Behaviour" as "those activities a person may engage in which identifying his / her own needs for information, searching

for such information in any way, and using or transferring that information" [2].

In this context, information is viewed as any stimulus that reduces uncertainty. Need is defined as recognition of the existence of this uncertainty in the personal, or work related, life of an individual. The approaches follows Atkin's works in which information need is defined as "a function of extrinsic uncertainty produced by a perceived discrepancy between the individual's current level of certainty about important environmental objects and criterion state he seeks to achieve [3]. In other words, information seeking begins when some one perceives that the current state of possessed knowledge is less than that needed to deal with some issue (or problem). The process ends when that perception no longer exists".

From the above definitions the following references are drawn:

i. Information seeking behaviour is mainly concerned with who needs what kind of information.
ii. It is an activity of an individual in pursuit of information.
iii. It is closely related to the personal characteristics and traits of the users.

3. REVIEW OF RELATED LITERATURE

The information seeking skills of Physicians and Biomedical Scientists in India has been studied by Schwartz through focus group sessions conducted at All India Institute of Medical Sciences, New Delhi and the Tata Memorial Cancer Centre/ Cancer Research Institute, Bombay [4]. Ellis and Haugan studied the information needs of engineers and research scientists in the Research and Development Department of an International Oil and Gas Company at Statoil's Research Centre in Trondheim, Norway [5]. Wildemuth, *et al* analysed the information seeking behaviour of medical students for the identification of the patient's symptoms through interview method [6].

In the study of information seeking habits of medical and engineering personnel at different levels such as Students, Teaching Staff members, Practitioners and Research workers. Lalitha found that both formal and informal approaches were adopted for collecting their information [7]. Manorama Tripathi and Prasad analysed the information seeking behaviour of scientists in physical science and social sciences [8].

Subramanian studied [9] the information needs and information seeking behaviour of Engineering faculty in Tamil Nadu, Gopalakrishnan analysed [10] the information seeking behaviour of National Institute of Fashion Technology faculty, Gopal Reddy [11]surveyed the information seeking behaviour of Sanskrit faculty and Abraham attempted to investigate the information needs and information seeking behaviour of small scale entrepreneurs in Dindugal district of Tamil Nadu [12].

4. OBJECTIVES

i. To examine the information needs of dentists in Chennai.
ii. To identify the information seeking behaviour pattern of dentist under study.
iii. To analyse most sought sources of information and the motivating factors for information seeking behaviour.
iv. To analyse the extent of use and dependence on various sources of information by the sample dentists under survey.

5. DATA ANALYSIS AND INTERPRETATION

A total of 100 Dentists were identified from Chennai, attached to the various Dental Colleges. Out of which 69 have been responded.

Table 1 Distribution of Questionnaire and Responses Received

Sl. No.	Description	Number of Questionnaires	%
1	Number of Questionnaires Distributed	100	-
2	Number of Questionnaire Received	69	69
3	Number of Questionnaire Not Responded	31	31

Distribution of questionnaire and responses received are shown in Table 1. Accordingly, a total of 69 out of 100 sample have been responded and the response rate is 69 %.

Table 2 Classification of Respondents by Sex

Sl. No.	Sex	Frequency	%
1	Male	42	60.87
2	Female	27	39.13
Total		69	100

Table 2 reveals that a majority of the respondents (60.87 %) comprise of male and (39.13 %) represents female community.

Table 3 Classification of Respondents by Age

Sl.	Age	Frequency	%
1	Below 25 Years	12	17.39
2	Between 26 - 30 Years	7	10.14
3	Between 31 - 35 Years	7	10.14
4	Between 36 - 40 Years	20	28.99
5	Between 41 - 45 Years	9	13.04
6	Between 46 - 50 Years	9	13.04
7	About 50 years	5	7.25
Total		69	100

It is observed from Table 3 that more than one-fourth of the respondents fall in the age group of 36-40 years. Only 5 respondents (7.25%) are above the age of 50.

Table 4 Classification of Respondents by the Frequency of Visit to their Respective Institution's Library

Sl.No.	Frequently Visit to the Library	Frequency	%
1	Almost Daily	35	50.72
2	Once in a week	15	21.74
3	More than once in a	5	7.25
4	Once in fortnight	8	11.59
5	Once in a month	3	4.35
6	Occasionally	2	2.90
7	Never	1	1.45
Total		69	100

The frequency of using their respective institution's library by the sample Dentists has been grouped as shown in Table 4. About 50 (72%) of the sample visits the parent institution's library daily, 21 (74%) visit once in a week. From the above analysis it is inferred that more percent of the sample visit their respective institution's library almost daily.

Table 5 Classification of Respondents by Time Spent in the Institution's Library

Sl. No.	Time Spent in the Library per week	Frequency	%
1	More than 20 hours	40	57.97
2	16 to 20 hours	12	17.39
3	11 to 15 hours	8	11.59
4	07 to 10 hours	5	7.25
5	04 to 06 hours	2	2.90
6	Less than 4 hours	2	2.90
Total		69	100

It is observed from the table 5 that 57.97% of the sample spend more than 20 hours per week in the institution's library, followed by 17.39 % between 16 to 20 hours per week. Therefore, it is inferred that lesser the number of respondents greater the number of hours spent in the respective institution's library.

Table 6 Classification of Respondents by Time Spent in the Institution's Library

Sl. No.	Time Spent in the Library	Frequency	%
1	More than 5 hours	25	36.23
2	3 to 5 hours	40	57.98
3	Less than 2 hours	4	5.79
Total		69	100

It is observed from the Table 6 that 36.23% of the samples spend more than 5 hours per day in the institution's library, However nearly 2/3rd of the sample spend between 3 to 5 hours in a week. Therefore, it is inferred that lesser the number of respondent greater the number of hours spent in the library.

In an academic environment people visit other libraries also, keeping this in mind, the opinions were sought and data is given Table 7.

Table 7 Classification of Respondents by Visits to other Libraries

Sl. No.	Visits to Other Libraries	Frequency	%
1	MGR Medical University Library	40	58.00
2	Indian Institute of Technology Library	2	2.90
3	Madras Dental College Library	5	7.24
4	British Council library	1	1.44
5	Ramachandra Medical College Library	1	1.44
6	Connemara Public Library	10	14.49
7	Other Dental College Libraries	10	14.49
Total		69	100

It is noted that a majority of the Dentists (58.00%) are visiting MGR Medical University Library. Only 7.24 % of the samples are using Madras Dental College Library.

It is observed from the Table 8 that 50.72% of the sample spend minimum 2 hours per week in other institutions libraries, followed by 39.13 % for 3 to 5 hours per week. Therefore, it is inferred that lesser the number of respondents greater the number of hours spent in the other libraries.

Table 8 Classification of Respondents by Time Spent in Other libraries

Sl. No.	Time Spent in the Library	Frequency	%
1	Below 2 hours	35	50.72
2	Between 3 and 5	27	39.13
3	More than 5 hours	7	10.15
Total		69	100

Table 9 presents the WAM values along with rank order for the nature and types of information required. A Total of ten types of information were identified as the nature and types of information required by the respondents and the responses were analyzed using various statistical tools.

From the Table 9, it can be seen that nature and types of information requirement of dentists based on WAM values are as follows:

i. Conference Proceedings / Seminar Reports (3.35%),
ii. Other General Books (3.20%)
iii. Project Reports (2.91%) are ranked first second and third respectively. CD ROM products and other items are ranked subsequently.

Table 9 Nature and Types of Information Required

Sl. No.	Nature and Types of Information	1	2	3	4	WAM	Rank
1	Year book, Dictionaries, Encyclopedias etc.	20	40	7	2	1.87	6
2	Subject Related Text Books	40	25	2	2	1.51	10
3	Subject Related Reference Books	25	15	27	2	2.09	5
4	Other General Books	10	10	5	44	3.20	2
5	Subject Related Journals / Periodicals	20	45	3	1	1.78	7
6	Information about Current Information	5	50	9	5	2.20	4
7	Project Reports	2	7	55	5	2.91	3
8	Conference Proceedings / Seminar Reports	7	12	40	20	3.35	1
9	CD Rom	30	30	8	1	1.71	8
10	Audio and Video Recordings	35	25	7	2	1.65	9

Table 10 presents WAM values on point scaling, for the eight variables according to the ranking order. A number of factors would contribute in motivating any information seeker. A total of eight motivational factors have been considered in this study and the analysis has been made as follows:

Table 10 Motivational Factors for Information Seeking Behaviour

Sl.No.	Motivational Factors	1	2	3	4	WAM	Rank
1	To Prepare for the University Examinations	30	35	3	1	1.64	6
2	To do My Research Work	5	45	12	7	2.30	4
3	General Awareness	40	25	2	2	1.51	7
4	For Participation in Seminars / Conferences	5	25	30	9	2.62	3
5	To Write and Publish Paper (Articles)	30	35	2	2	1.65	5
6	To Evolve Innovative Ideas / Techniques	2	2	4	61	3.79	1
7	To Prepare Competitive Examinations	40	25	3	1	1.49	8
8	For Pleasure of Doing Good Work, Self – Fulfillment and Self - Satisfactions	1	3	5	60	3.76	2

1-Not Motivator 2-Motivator 3-Fairly Motivator 4- Strongly Motivator

From Table 10 it can be seen the information seeking behaviour of students/staff members. Primarily based on the WAM values are as follows:

i. To evolve innovative ideas / Techniques (3.79)
ii. For pleasure of doing good Work Self – fulfillment and Self – satisfactions (3.76)
iii. For Participation in Seminars / Conferences (2.62) are ranked first, second and third respectively.

From the Table 11 it is seen that books and handbooks/ reference books are ranked first and second respectively. Conference proceedings are ranked as third. Journals/ periodicals and internet browsing are ranked subsequently.

Dental college libraries provide a number of services to the user communities as stated above. Opinion on these services are also ascertained and given in Table 12. The WAM values for nine variables, according to their use are shown in Table 12. Based on WAM, the services are ranked.

Table 11 Dependence on Formal and Documentary Sources

Sl.No.	Sources	1	2	3	4	WAM	Rank
1	Text books	45	15	8	1	1.49	7
2	Handbooks / Reference Books	2	5	2	60	3.74	1
3	Conference Proceedings and Papers	5	2	40	22	3.14	2
4	Journals / Periodicals	20	40	7	2	1.87	5
5	DCI Reports	50	10	7	2	1.43	8
6	CD ROM	25	25	15	4	1.97	3
7	Audio / Video Recordings	35	20	12	2	1.72	6
8	Internet Browsing	12	55	1	1	1.87	4

1-Not dependence 2- Occasional dependence 3-Frequent dependence 4-High dependence

Table 12 Extent of Use of Institution's Library Services

Sl. No.	Services	1	2	3	WAM	Rank
1	Loan of Books	1	22	66	3.52	1
2	Reference Services	5	12	62	3.11	2
3	Journals / Periodicals Circulation	2	9	58	2.81	3
4	Selective Dissemination Services	5	15	49	2.64	5
5	Bibliographical Services (Details about Books)	7	2	40	1.89	8
6	Current Awareness Services (List of New Addition)	1	49	19	2.26	7
7	Reprographic Services	2	20	47	2.65	4
8	CD Rom Loan	10	25	34	2.35	6

1-Marginally 2-Substantially 3-Completely

It is observed that "Loan of books" and "Reference services" and "Journals Circulation" are ranked as 1, 2 and 3.

The Table 13 presents the WAM values along with rank order for the importance of various channels of information. A total of six types of channels of information were identified.

Table 13 Importance of Various Channels of Information

Sl. No.	Channels of Information	1	2	3	WAM	Rank
1	Personal Library	50	2	17	1.52	6
2	Institution's Library	20	7	42	2.32	3
3	Public Libraries	10	15	44	2.49	1
4	Other College Libraries	20	10	39	2.27	4
5	Conferences / Seminars	9	20	40	2.45	2
6	Discussion with Classmates	20	20	29	2.13	5

1 - Least important 2 - Important 3 - Most important

From Table 14, it can be seen the satisfaction level of the dentists in the institution's library sources. Ranking of satisfaction on the institution's library sources based on the WAM values are as follows:

Books (2.83), Journals / Periodicals (2.19) and Internet Browsing facilities (1.97) are ranked first, second and third respectively, CD ROM products and audio / video recordings are ranked subsequently.

Table 14 Satisfaction on the Institution's Library Sources

Sl. No.	Sources	1	2	3	WAM	Rank
1	Books	4	63	2	2.83	1
2	Journals / periodicals	22	12	35	2.19	2
3	News papers	8	60	1	1.89	4
4	Audio / Video recordings	35	32	2	1.52	6
5	CD ROM products	25	42	2	1.66	5
6	Internet Browsing facilities	3	65	1	1.97	3

1 - Highly satisfied 2 - Satisfied 3 - Not dissatisfied

From the Table 15, it can be seen the dentists satisfaction on institution's library services. It is found that loan of book services ranked first, journals and periodicals circulations services are ranked second and the reference services are ranked as third.

Table 15 Satisfaction on Institution's Library Services

Sl. No.	Library Services	1	2	3	WAM	Rank
1	Loan of Books	25	25	17	1.83	1
2	Reference Services	60	7	2	1.56	3
3	Bibliography Services	50	17	2	1.30	7
4	Reprography Services	60	7	2	1.16	8
5	CD ROM loan & Services	50	15	4	1.33	5
6	Journals/ Periodicals Circulations	25	40	4	1.69	2
7	Reservation Services	40	25	4	1.48	4
8	News Paper Clippings	50	17	2	1.31	6

1 - Highly satisfied 2 - Satisfied 3 - Not dissatisfied

6. CONCLUSION

The significance of information as a vital resource in every sphere of life emphasises the information needs of the people and thoughts together. The information needs and information seeking behaviour differ from person to person. The present study of information seeking behaviour of dentists has resulted in a number of findings and observations. Based on the analysis of data and the resulting findings and observations, led to the formulation of suggestions, to enhance the effectiveness of information seeking behaviour and to promote the utilisation of information resources in the Institution's library to the optimum level.

From the foregoing discussion on the information needs and information seeking behaviour of Dentists in Chennai , it emphasises that the existing infrastructure in terms of collection, services and other facilities in the libraries of Dental Educational Institutions are to be strengthened. As evident in this study, the libraries are yet to emerge as an effective information handling institutions in the light of changes in IT environment. Of course, libraries in general and libraries in Dental institutions in particular, suffer from financial constraints as well as limited manpower which hinders the provision for effective information services. Further this study stresses that the librarians should accept the roles being forced by IT revolution which would supplement and compliment the information seeking behaviour of users, either students or faculty. Only a well balanced collection with the provision for IT based services, in addition to the services offered by Library and Information Science professionals, the process of information seeking behaviour cannot be fruitful and meaningful. Hence the Dental educational institutions on one hand and the librarians on the other hand, shall strive together more professionally with blend of service-mindedness to the community, by effectively utilising Information Technology.

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Usage of E-Journals among Physicians in Nagercoil, Tamil Nadu: A Study

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Abstract

The study about the e-journal usage among physicians in and around Nagercoil, Tamil Nadu helps to understand the time spent on internet, perceptions about online searching for e-journals and experience of physicians in e-journal features (hyperlinks, e-mail alert, video graphics, etc). Majority of physicians spent one to two hours weekly for browsing internet. Physicians have a positive perception about e-journals and online searching. Most of the physicians felt that features in e-journal are useful. Physicians prefer HTML format. Physicians search information by title, author and journal name to retrieve relevant information.

Keywords: *E-journal, E-journal Usage, Physicians*

1. INTRODUCTION

Electronic publishing has led to a new era of communication and information sharing. Electronic journals have helped publishers and scholars to disseminate information much more quickly than previously possible. E-journals are simply serial publication in which the end products are made available in digital format and those contents may or may not peer reviewed. CD-ROM and internet are used for the dissemination of the electronic journals. The main advantage of CD-ROM is that in libraries it can be handled same as conventional print form. For internet available journals, the subscriber gets the materials e-mailed. E-journals can also be accessed from the central host which holds the e-journal via the open network and browsed remotely, which is becoming increasingly common.

2. ELECTRONIC JOURNALS

On the internet, newspapers, popular magazines, and scientific and general journals can be found. A large proportion of the present electronic magazines contain the same text and pictures as the paper variety of the same magazine. Often, they contain nothing new in comparison with the paper version, except for the occasional hyperlink with related documents. These hyperlinks refer to another document, or to a place in the same document where more information, related to the word in question, is to be found. The main advantage of electronic magazines is especially their quick dissemination and the simple method of storage. Real electronic magazines can profit from the advantages of the www: fast communication, interactivity and audio-visual information. Unlike the above-mentioned category of electronic magazines, these e-zines or e-journals per definition have no paper equivalent. e-zines and e-journals on the internet are not always free.

3. NEED AND SIGNIFICANCE OF THIS STUDY

The central job of doctors is to meet the needs of patients by drawing on the knowledge accumulated by medicine over 5,000 years. Medicine, in modern jargon, is a knowledge based business, and experienced doctors use about two million pieces of information to manage their patients. Pauker and Wyatt defined Clinical information as "the commodity used to help make patient care decisions [1&2]. Wyatt says about a third of doctors' time is spent recording and synthesizing information [3]. According to Hersch and Lunin a third of the costs of a hospital are spent on personal and professional communication [4]. Tannendaum reported most of the information doctors use when seeing patients they keep in their heads in what has been called "a constantly expanding and reinterpreted database"[5].

Wyatt reported some of the information doctors known are out of date and wrong, new information may not have penetrated, and the information may not be there to deal with patients with uncommon problems. These

deficiencies have become more serious as the rate of change in medical knowledge has accelerated: the doubling time of the biomedical knowledge base is currently about 19 years, meaning that medical knowledge will increase fourfold during a professional lifetime. Inevitably, doctors cannot practice high quality medicine without constantly updating the information within their heads and finding information to help them with particular patients [3]. This realization has lead Hersch and Lunin to the development of medical informatics, which can be defined "as the development, use, and evaluation of information technology in health care [4].

In times of technological evolution, online access to medical content is growing; electronic journals (e- journals) in particular are an increasingly important resource for physicians. Comparing the use of an identical set of print and electronic journals, Morse and Clintworth noted while print uses for the journals investigated over the six- month study period an academic health sciences library were 1,800, electronic uses were approximately in 28,000 [6]. So far no systematic study has been conducted on this area of e-journals usage among the physicians in Tamil Nadu.

4. STATEMENT OF THE PROBLEM

The present study is intends to study the e-journal usage among the physicians in and around Nagercoil, Tamil Nadu and hence the study is entitled as "Usage of E-journals among the Physicians in Nagercoil, Tamil Nadu".

5. OBJECTIVES OF THE STUDY

i. To find the average time spent by the physicians for accessing e-resources.
ii. To asses out the perceptions of physicians about e-journal usage and online searching for e-journals.
iii. To identify the most preferred format of e-journals.
iv. To ascertain the experience of physicians in e-journal features (hyperlinks, e -mail alert, video graphics, etc).
v. To analyse the commonly followed searching pattern for e-journal.

6. LIMITATIONS OF THE STUDY

The major limitations of the study are

i. The present study is confined only to 140 respondents with computer knowledge.
ii. The study is conducted to physicians working in and around Nagercoil, Tamil Nadu.

7. METHODOLOGY

Questionnaire is administered among the sample of 140 physicians using stratified random sampling technique by giving due weightage to various categories. The collected data were analyzed using SPSS (Software Package for Social Sciences).

8. DATA ANALYSIS AND INTERPRETATION

8.1 Time Spent for Internet

Time is an important constrain to the physicians in their busy schedule. Weekly time spent by the physicians for using internet is given in Table 1.

Table 1 Weekly Time Spent for Internet

Sl. No.	Weakly Time Spent on Internet	No. of Samples	%
1	< 1 hour	55	39.30
2	1 - 2 hour	70	50.00
3	2 - 5 hour	15	10.70
Total		**140**	**100**

Table 1 reveals that 39.30% of the physicians spent less than one hour in internet, 50% spent 1-2 hours, and 10.70% spent 2-5 hours on browsing internet. It is concluded that 50% of the physicians spent 1-2 hours weekly for browsing internet.

8.2 Physician's Perceptions about E-Journals and Online Searching

Every individual perception varies with respect to e-journal and online searching. To study the users' opinion about eight aspects of searching are analyzed.

Table 2 clearly gives an understanding that 44.44% of the physicians agree somewhat and 35.28% physicians agree strongly. Hence, the researcher concluded that perceptions towards various aspects of e-journal and online searching are positive and they have right perception, eventhough varying degree of acceptance.

Table 2 Physician's Perceptions about E-Journals and Online Searching

Perception about E-Journals	Agree Strongly %	Agree Somewhat %	Undecided %	Disagree Somewhat %	Disagree Strongly %
E-Journal Usage Decreases the Quality of Research Literature Searches	21.40	39.30	10.70	14.30	14.30
E-Journal Usage Increases Scholarly Productivity	46.40	50.00	-	3.60	-
Use of Online Searching Increases Exposure to Non-Peer-Reviewed Papers	48.10	51.90	-	-	-
E-Journals Make Current Awareness of Recent Research Easy and Fast	75.00	21.40	-	3.60	-
E-Journals Currently Waste Users' Time Because of User-Unfriendly Interfaces	25.00	32.10	25.00	3.60	14.30
E-Journals Provide Other Valuable Services or Features Beside Full-Text Articles	37.00	55.60	7.40	-	-
The More Use Online Retrieval of Research Content, the Less Bother to Obtain Content Offline	10.70	57.10	10.70	14.30	7.20
Pay No Amount for Online Access to Full-Text Articles, No Matter How Small That Amount is	18.60	48.10	11.10	11.10	11.10
Total	35.28	44.44	8.11	6.31	5.86

8.3 Physicians Experience towards E-journal Features

Features in e-journal are an increasing factor with respect to the advancement in internet applicability. In this case some features will be liked by some, others may dislike it. So experience have been taken all the known features in e-journals and asked for the experience with that feature. This had been looked onto with a great detail in the following Table 3.

From the data in the Table 3, it is evident that 54.18% of physicians felt that features in e-journal are useful and 20.07 % felt it is not useful. From the above findings, it is concluded that user's opinion towards various e- journal features are positive and they are of the opinion that it is useful, for their professional activities and they have negative attitude towards the cost factor involved in the e-journal.

8.4 Most Preferred Format for Reading Full Text E-Journals on the Screen

Reading of the full text e-journal is influenced by its format. There are different types of format such as HTML, PDF and Word. Most preferred format is given in Table 4. Table 4 shows that 44.29% of the physicians prefer HTML format, 30% likes PDF format, 22.14% say rather than reading from the screen, they prefer print them out and read the print copy, and 3.57% don't have access to the full-text articles online.

8.5 Search Strategy Used to Follow to Retrieve Relevant Information

Search strategy followed by the physician while this sample helps to find what kind of information the physicians want to retrieve relevant information are summarized in Table 5.

Table 3 Physicians Experience towards E-Journal Features

Physicians Experience	Used		Never Heard of it %	Not used	
	Useful %	Not Useful %		Don't Plan to Use it (%)	Would like to Try it (%)
E-Mailed Table of Contents Alerts	66.70	11.10	14.80	-	7.40
E-Mailed Article Citation Alerts on Topics of Interest to You	65.50	11.50	11.50	-	11.50
Videos or Animated Graphics	55.60	22.20	11.10	-	11.10
Hyperlinks from One Article to a Cited Article in the Same Journal	66.70	14.80	7.40	3.70	7.40
Hyperlinks from One Article to a Cited Article in a Different Journal at No Charge (Toll-Free Linking)	66.70	14.80	7.40	3.70	7.40
Hyperlinks from an Article to a Scientific Database	51.90	14.80	18.50	-	14.80
Hyperlinks from an Article to an Author's E-Mail Address	40.70	29.60	14.80	3.80	11.10
Hyperlinks from an Article to an Author's Website	48.10	25.90	7.50	3.70	14.80
Pay–Per-View (Paying Online For Immediate Access to a Single Article)	22.20	44.40	3.70	7.50	22.20
Online Peer Reviews (Downloading Articles to Review, Submitting Reviews Online)	57.70	11.60	7.70	3.80	19.20
Total	**54.18**	**20.07**	**10.44**	**2.62**	**12.69**

Table 4 Preferred Formats for Reading Full Text E-Journals on the Screen

Sl. No.	Preferred Format for Reading Full Text E-Journals Articles	No. of Samples	%
1	HTML	62	44.29
2	PDF	42	30.00
3	Prefer to print them.	31	22.14
4	Don't have access to full-text article online.	05	03.57

Table 5 reveals the search strategy followed by the physicians at the time of retrieve relevant information for e-journal. 89.30% physicians prefer title and author in the search found. 82.10% physicians prefer journal name on the search found. Hence it is concluded that title, journal name and author are the most profound key terms among physicians for retrieve relevant information.

Table 5 Search Strategy Used to Follow to Retrieve Relevant Information

Sl. No.	Key Terms	Yes (%)	No (%)
1	Title	89.30	10.70
2	Author	82.10	17.90
3	Journal Name	89.30	10.70
4	Date of Publication	50.00	50.00
5	Page Numbers	21.40	78.60
6	ISSN Number	10.70	89.30
7	Number of Times Cited	17.90	82.10
8	Abstract	30.90	69.10
9	First Page of Full Text of the Article.	42.90	57.10
10	Sentence in Article that Matched Searched Terms	39.30	60.70

9. FINDINGS

The finding of the present study or derived from the analysis are summarized below.

i. 50% of the physicians spent 1-2 hours in internet and 39% spent less than one hour on internet weekly.
ii. 39.30% of physicians agree somewhat that e-journal usage decreases the quality of research literature search. 50% of physicians agree somewhat that e-journal usage increases scholarly productivity. 51.90% of physicians agree somewhat that online searching increases exposure to non-peer-reviewed papers. 75% of physicians agree strongly that e-journals make current awareness of recent research easy and fast. 57.10% of physicians agree that e-journal waste user time because of user unfriendly interface. Majority agree e-journals provide other valuable services or features beside full-text. 57.10% of physicians agree that since they get retrieval content online they are least bothered about print journals. 48.10% felt that they will do without an article or go to the library rather than pay any amount for the online access to full-text article. No matter how small that amount is.
iii. Considering the physicians experience with the e-journals features, it was found that 66.70% of physicians felt that e-mailed table of contents alerts are useful. 65.50% of physicians felt that e-mailed article citation alerts on topics of interest are useful. 55.60% of physicians felt that videos or animated graphics are useful, while 22.20% felt not useful. 66.70% of physicians felt that hyperlinks from one article to a cited article in the same journal are useful. 66.7% of physicians felt that hyperlinks from one article to a cited article in a different journal at no charge (toll-free linking) are useful. 51.90% of physicians felt that hyperlinks from an article to a scientific database are useful. 40.7% of physicians accepted that hyperlinks from an article to an author's e-mail address are useful. 48.10% of physicians have an idea that hyperlinks from an article to an author's website are useful. 44.40% of physicians have an idea pay per-view (paying online for immediate access to a single article) is not useful. 48% of physicians felt that electronic manuscript submission (through online forms or email) is useful. 57.70% of physicians felt that online peer reviews (downloading articles to review, submitting reviews online) is useful.
iv. With respect to most preferred format for reading full text e-journal article on the screen, 44.29% of physicians favoured HTML and 30% of physicians favoured PDF.
v. In search strategy used to retrieve relevant information, 80% of the physicians searched by title, author and journal name and some by abstract.

10. CONCLUSION

The attitude of the physicians towards e-journals and its various features are positive and encouraging. Physicians are depending more on e-resources for their current information needs. Familiarity with latest tools on internet application will enhance their browsing techniques and save precious time.

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Digital Library for Engineering Education: A Prototype Design

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Abstract

There are number of digital libraries being developed all over the Globe. But a comprehensive digital library for a specific discipline is yet to emerge that connects to a number of digital resources. Therefore, an attempt has been taken to present a prototype design model of a digital library for the discipline of Engineering Education.

Keywords: *Digital Library, Engineering Education*

1. INTRODUCTION

The society has been well acquainted with printed information sources. Publishers have played a key role in the generation of printed information, while distributors, booksellers and more particularly libraries have been contributing in the distribution of information. The developments in the Information and Communication Technology (ICT), and its application in Library and Information Centres have brought significant changes in information collection, handling, organisation, consolidation, repacking and dissemination.

One of the major important contributions of web technology has been the creation of digital libraries, which allows users to access information resources from virtually anywhere and anytime in the world. Rapid developments in the field of digital libraries all over the world have given rise to a large number of publications in different digital forms. Added to this, electronic publishing, networking and consortia have become the popular terms of the present day information scenario.

All these developments are contributing towards the design and development of digital libraries.

2. DIGITAL LIBRARY: AN OVERVIEW

Digital libraries basically a store of information materials in electronic format and manipulate large collections of those materials effectively. They provide access to materials that are not part of the library collections through interlibrary loan and document delivery services, including the use of electronic information services and networked information.

Digital libraries, includes all types of library materials in digital form, either retrospectively converted materials, or newly published materials, or both, which may be derivatives of print works or original electronic publications.

3. SCOPE AND OBJECTIVES OF DIGITAL LIBRARIES

The advent of digital libraries has changed the role of the Library and Information Professionals, as well as the required user capabilities. A digital library collection may include two types of information resources. One type comprise of 'digital original' resources, which are some times referred to as resources that are born digitally. The other type comprises 'digital surrogates', which are created from traditional information resources through format conversion. While both types of resources have the same access and management requirements, they arise different issues of selection and acquisition; and their preservation imperatives are also different. Digital libraries aim at unhindered access to information content over computer and communication networks, which justify the need for resorting to such setup for useful information resources.

The Primary Objectives of Digital Library are:

i. To collect, store, organise and access information in digital form via communication channels.
ii. To meet the requirements of patrons by providing better services.
iii. To provide personalised and retrospective services in efficient way.
iv. To have large digitised databases.
v. To save the time of library staff by avoiding routine jobs.
vi. To provide coherent view of all information within a library in any format.
vii. To serve widely dispersed communities throughout the network.
viii. To minimise massive storage and space problem of large libraries.
ix. To reduce cost involved in various library activities.
x. To promote economic and efficient delivery of information;
xi. To leverage the considerable investment in computing/ communications infrastructure; and
xii. To strengthen communication and collaboration between research, business, government and educational communities.

4. PROTOTYPE DESIGN OF DIGITAL LIBRARY FOR ENGINEERING EDUCATION

The opening screen of the digital library for Engineering Education is shown in Figure 1.

Fig. 1 Opening Screen of the digital library for engineering education

The screen in Figure 1 contains links for e-books, e-journals, e- projects, e-databases and tutorials. It also provides links to the traditional library services of that particular library. The advantage of having providing the links to the traditional library services to the user of digital library services have the facility for search and access the resources of their own library, wherein the design is customised.

Fig. 2 Screen displaying e-books

On clicking the 'e-books' in the opening screen (Figure 1), the next screen is displayed containing e-books collection (Figure 2). In Figure 2, it can be seen that links have been provided to general collection on Engineering Science and Technology subjects, international collections, digital collection of students and teachers and special formats and genral in digital library. By clicking the link on the Computer Science in General collections in Figure 2, it leads to the link of e-books on Computer Science as shown in Figure 3. On clicking any one of the e-books shown in Figure 3, immediately, it takes to the full text of the respective book in the library.

Fig. 3 Screen displaying e-books on computer science

On clicking 'e-projects' in Figure 1, it will lead to the broad subject categories of e-projects submitted by the students of respective institutions as shown in Figure 4.

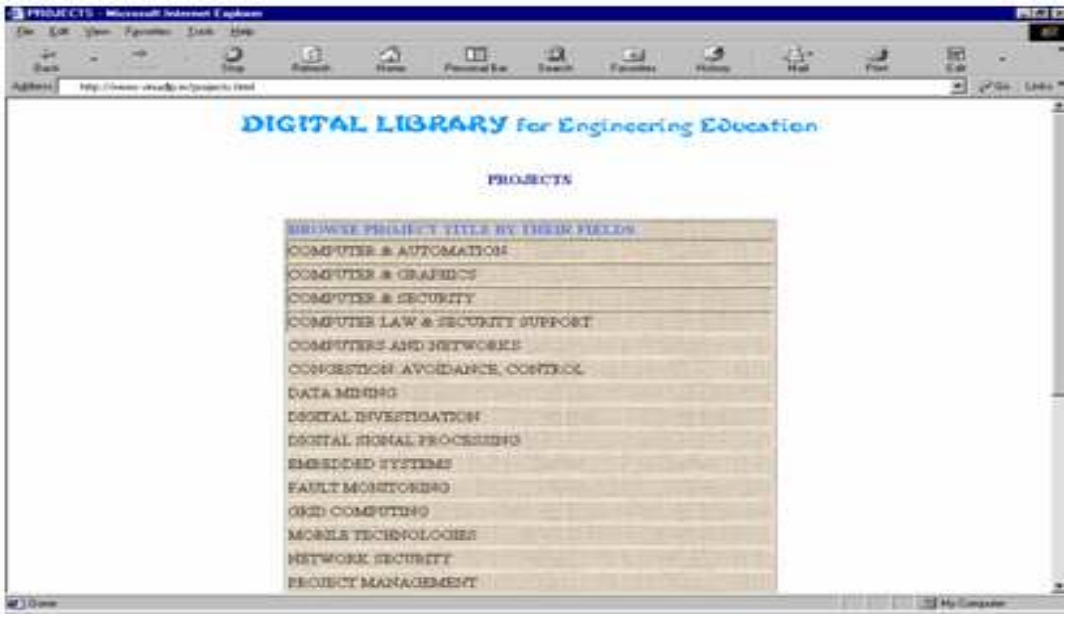

Fig. 4 Screen displaying e-projects list

On clicking the 'e-journals' link as shown in Figure 1, a display of 'Journal Shelf' containing list of journals will be displayed as shown in Figure 5.

On clicking the 'Journal Shelf' in Figure 5, it leads to the location of the journal in the shelf is shown in Figure6, which contains the key word search option that facilitated either to browse the journal or to view the 'Journal Shelf'.

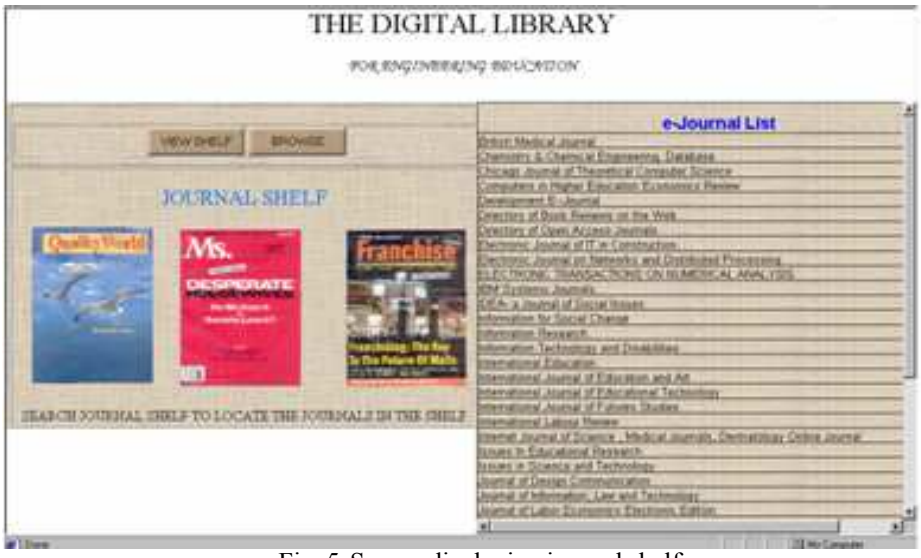

Fig. 5 Screen displaying journal shelf

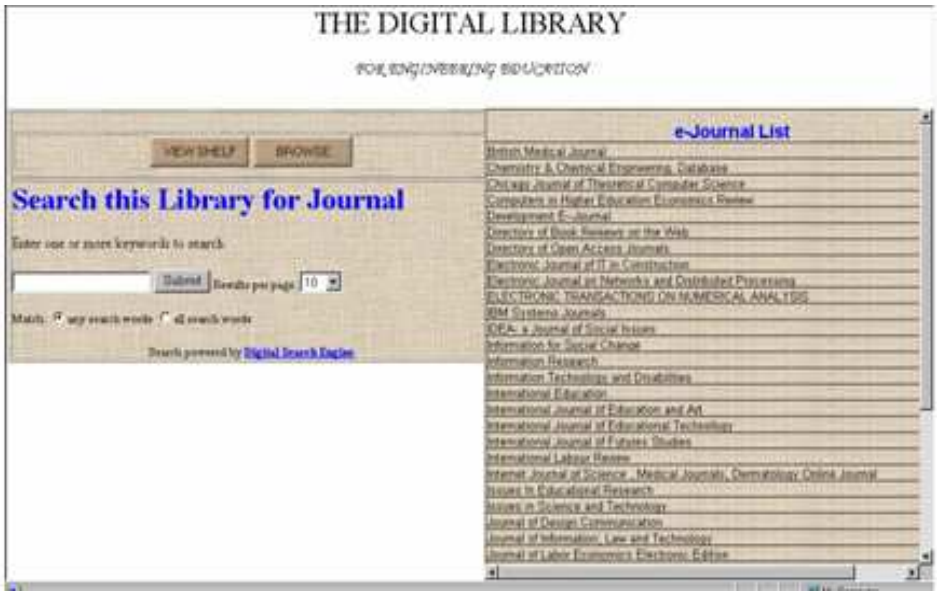

Fig. 6 Screen displaying search option for journals and list of e-journals

By clicking the 'e-databases' link from Figure 1, leads to the list of 'e-databases' as shown in Figure 7. It also contains provision for browsing the database either for full text or bibliographical details.

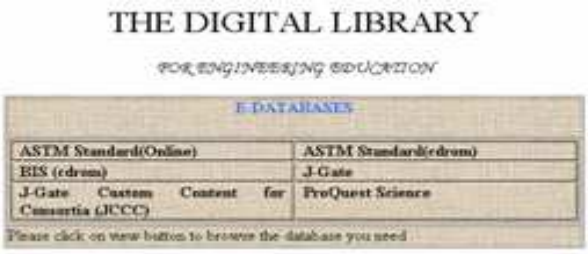

Fig. 7 Screen displaying list of e-databases

On clicking the 'Tutorials' button from Figure 1, it leads to the tutorials for various programmes as shown in Figure 8.

Fig. 8 Screen displaying tutorials on programming languages

By clicking one of the buttons under 'Tutorials', for example Java, it leads to the 'Java Tutorials' screen which is a practical guide for programmers and other details about Java as shown in Figure 9.

Fig. 9 Screen displaying the tutorial links for Java

The output screen (Figure 10) provides provision to search the contents of digital library by using the keyword search.

Fig. 10 Screen displaying the search menu option

The output screen as shown in Figure 11 provides list of journals by alphabetical links, which will provide access to the content in the journals.

Fig. 11 Screen displaying the list of journals by alphabetical links

5. SALIENT FEATURES OF THE PROTOTYPE DESIGN MODEL OF DIGITAL LIBRARY FOR ENGINEERING EDUCATION

In the foregoing pages, the prototype design model of digital library for Engineering Education has been outlined. Some of the salient features of the prototype design model are as follows:

i. The design model covers various branches of Engineering Science and Technology resources.
ii. The resources comprising of e-books, e-journals, e-databases and e-projects.
iii. It also covers web based user education programmes under the caption of tutorials for various programming languages and platforms.
iv. The model also provides facilities to access traditional library services of the respective institutions.
v. Facilitates to search the digital library for Engineering Science and Education by keywords.
vi. Facilitates to access the full text of the resources listed in the contents.

vii. Since it is a prototype design structure, there is every scope to update, modify and include some other provisions to make digital library a more comprehensive one.

6. CONCLUSION

Libraries around the world have been working on the challenges for several years. They have created many digital library initiatives and projects and have formed various national schemes for jointly exploring key issues. No library is fully successful with digital library. Hence, co-operative activities and finding resources will help in building the digital library. India is also slowly entering into the digital library arena.

In order to meet the current requirements of the engineering students, research scholars, faculties and engineering professionals, a prototype digital library is designed for engineering disciplines.

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Usage of E-Resources among the Legal Professionals of Madras High Court, Tamil Nadu : A Study

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Abstract

The fast growth of Information and Communication Technology and particularly the e-resources have changed traditional methods of research, storage, retrieval and communication of scholarly information. Now-a-days, e-resources have emerged as the most powerful medium for storage and retrieval of information. In order to retrieve relevant information, users have to make use of different electronic resources. The purpose of this study is to identify the electronic information channels used by the legal professionals of the Madras High Court. A questionnaire was distributed to 1000 Advocates of Madras High Court and 710 filled in questionnaires were returned, giving an overall response rate of 71 %. It was found that majority of the respondents (51.72%) in the age group of 51-55 years have 4-5 hours of access to internet. On the whole, respondents perceived Madras High Court library collections, services and facilities as adequate to meet their information needs effectively.

Keywords: *E-resources, Internet, Legal Information, Legal Professionals, Library Services, Madras High Court*

1. INTRODUCTION

Law is a highly knowledge-intensive domain and obtaining accurate and up-to-date legal information can mean the difference between winning or losing cases. The information work carried out by lawyers can be complex, often involving finding and working with a wealth of different types of information. This 'wealth' of legal information spans different types of documents (e.g. law reports/legal cases, legislation, commentary articles, forms and precedents etc.), a wide range of legal topic areas and a range of jurisdictions.

Information-seeking is an important part of lawyers' work and unlike many other professions; the legal profession has access to many dedicated electronic resources. Notable examples are the high-profile commercial platforms - Manupatra, SCC-Online, Indlaw-Online, LexisNexis and Westlaw (which are commonly referred to by the legal professionals as legal databases, but can also be considered to be digital law libraries).

2. REVIEW OF LITERATURE

Kannappanavar and Rajanikanta's paper highlights the use of e-learning resources in medical colleges. The study has found that Medical education popularized only after the independence of the country. It is found that majority of the colleges under the study area have e-information resources, e-databases. Almost all colleges under study are also becoming members of a consortium. As far as the infrastructure facilities are concerned, almost all colleges under study have provided very good infrastructure facilities to their libraries to serve their clients effectively [1].

Varatharajan and Chandrashekara have found that digital libraries and digitization play an important role in preserving and disseminating knowledge in art and culture, education, science and technology, literature and humanities, media and entertainment, cultural heritage, and history. In India, a substantial number of libraries and information centres have initiated digital library activities. Indian society has created and preserved the resources of traditional and cultural heritage in various

forms; however, thousands of ancient books and manuscripts that remain in perishable palm leaves urgently need digitization. This article describes some of the digital libraries and institutional repositories of India [2].

Lohar and Roopashree have analyzed the collected data to cover the use of electronic resources and how the electronic resources have improved the academic career of the faculty and also the problems that are faced in using the electronic resources. They conclude that the main intention of the use of electronic resources has been the academic interest of the users [3].

Barbara J. Bergman has discussed the position of electronic resources as a specialty to deal with the management of digital resources, but little has been written about the librarians now working in this specialty. Electronic resources management appears to substantially blur the line between public and technical services [4].

Sajjad Ur Rehman and Vivian Ramzy have discussed the electronic resources as vital, but extremely expensive and medical librarian are genuinely concerned with their effective use. It is a widely held view that low awareness and poor skills are among the primary reasons for their under utilization. A questionnaire based survey of health professionals affiliated with three reaching faculties of Kuwait University has been conducted to find out the nature and extent of use and the reasons of low use of these resources [5].

3. OBJECTIVES OF THE STUDY

The following objectives are evolved for the purpose of the present study:

i. To examine the respondents' duration and quantum of time utilization in search of legal information.
ii. To identify the respondents' extent of requiring various legal information.
iii. To study the respondents' frequency of utilizing legal information.
iv. To analyze the respondents' extent of access to e-resources.
v. To examine the respondents' purpose of gathering e-resources.

4. METHODOLOGY

The researcher has employed a well structured questionnaire for collecting the data from the advocates of Madras High Court and its Madurai branch. The questionnaire has been prepared in such a way that the respondents could easily understand the items. A total number of 1000 questionnaires were distributed among the practicing advocates, who reside in and around Chennai and Madurai. They are personally requested to fill up the questionnaire at their earliest convenience in order to help the investigator to collect the same during his next visit. The investigator has to make second, third and fourth visits to the bars for collecting the filled-in-questionnaires from the practicing advocates. During these visits, the investigator could collect questionnaires from only 710 out of 1000 advocates among whom the questionnaires were distributed. This constitutes 71 % of the total response. While selecting sample, stratification method has been adopted with a view to give relative weightage to the respondents of different categories.

5. DATA ANALYSIS AND INTERPRETATION

5.1 Distribution of Respondents by Age

Table 1 Age-wise Distribution of Respondents

Age	No. of Respondents	%
Below 36	86	12.11
36-40	101	14.23
41-45	112	15.77
46-50	201	28.31
51-55	87	12.25
Above 55	123	17.32
Total	710	100

A study of data in Table 1 indicates the age-wise distribution of respondents. It could be noted that out of the total 710 respondents, 12.11 % of them belong to the age group of below 36 years and 14.23 per cent of them come under the age group of 36-40 years. In this study, 15.77 % of the respondents' age is in the range of 41-45 years and 28.31 % of them are found in the age group of 46-50 years. It is observed that 12.25% of the respondents belong to the age group of 51-55 years and the rest 17.32% of them belong to the age group of above 55 years.

It is concluded from the above table that majority of the respondents are found to be with the age group of 46-50.

5.2 Distribution of Respondents by Designation

The legal professionals have been asked to indicate their designation. Different types of designations were listed in the questionnaire, viz., Independent advocates, Senior advocates, Panel advocates, Government advocates and Junior advocates.

Table 2 Designation-wise Distribution of Respondents

Designation	No. of Respondents	%
Independent Advocates	114	16.06
Senior Advocates	287	40.42
Panel Advocates	55	7.75
Government Advocates	42	5.92
Junior Advocates	212	29.86
Total	710	100

A study of data in Table 2 indicates the designation-wise distribution of respondents. It could be noted that out of the total 710 respondents, 16.06 % of them are independent advocates and 40.42 % of them are senior advocates. In this study, 7.75 % of the respondents are panel advocates and 5.92 % of them are government advocates. It is observed that 29.86 % of the respondents are junior advocates.

It is concluded that more senior advocates followed by junior advocates are the respondents in the study.

5.3 Distribution of Respondents by Gender

Table 3 describes the distribution of respondents by gender.

Table 3 Gender-wise Distribution of Respondents

Gender	No. of Respondents	%
Male	475	66.90
Female	235	33.10
Total	710	100

A study of data in Table 3 indicates the gender-wise distribution of respondents. It could be noted that out of the total 710 respondents, more than two thirds of the respondents (66.90%) belong to the male group and the rest one third of them (33.10%) are females.

It is concluded that male advocates constitute more in number than female advocates, indicating the presence of male domination in legal profession in Tamil Nadu.

5.4 Field of Specialization

The advocates have been asked to indicate the field of specialization. The responses are given in Table 4.

Table 4 Age-wise Respondents' Field of Specialization

Age	Civil and Constitutional Law	Criminal Law	Property Law and Family Law	Company Law and Labour law	Taxation, Consumer Disputes and IPR	Total
Below 36	12 (13.95)	16 (18.60)	28 (32.56)	21 (24.42)	9 (10.47)	86
36-40	27 (26.73)	39 (38.61)	9 (8.91)	16 (15.84)	10 (9.90)	101
41-45	35 (31.25)	23 (20.54)	6 (5.36)	41 (36.61)	7 (6.25)	112
46-50	10 (4.98)	29 (14.43)	86 (42.79)	44 (21.89)	32 (15.92)	201
51-55	55 (63.22)	12 (13.79)	9 (10.34)	6 (6.90)	5 (5.75)	87
Above 55	23 (18.70)	65 (52.85)	16 (13.01)	8 (6.50)	11 (8.94)	123
Total	162 (22.82)	184 (25.92)	154 (21.69)	136 (19.15)	74 (10.42)	710

Data presented in Table 4 indicate the age-wise respondents' field of law specialization. It could be noted that out of the total 710 respondents, 22.82 % of them have specialized themselves in civil and constitutional law. 63.22% of the respondents in the age group of 51-55 have specialized themselves in civil and constitutional law. In this study, 25.92 % of them have specialized in criminal law and more than a half of the respondents of the highest age group have specialized themselves in criminal law. Out of the total 710 respondents, 21.69 % of them have specialized themselves in property law and family law. Majority of the respondents (42.79%) in the age group of 46-50 years have specialized themselves in property law and family law. In this study, 19.15 % of the respondents have specialized in company law and labour law. Majority of the respondents (36.61%) in the age group of 40-50 years have specialized themselves in company law and labour law. Moreover, 10.42 % of the respondents have specialized in taxation, consumer disputes and IPR laws.

It could be seen clearly from the above discussion that specialization in criminal law takes the first order reporting among the advocates of Madras high court, specialization in civil and constitutional law the second, specialization in property and family law the third, specialization in company law and labour laws the fourth and specialization in taxation, consumer disputes and IPR laws the last.

5.5 Frequency of Library Visits

The frequency of library visits by the user is usually influenced by factors such as collection, organization, and maintenance of the library resources along with the library resources, facilities and the library services.

Table 5 Age-wise Respondents' Frequency of Library Visits

Age	Daily	Thrice a Week	Twice a Week	Once in a Week	Once in a Fortnight	As and When Required	Total
Below 36	6 (6.98)	12 (13.95)	18 (20.93)	9 (10.47)	8 (9.30)	33 (38.37)	86
36-40	21 (20.79)	26 (25.74)	13 (12.87)	19 (18.81)	7 (6.93)	15 (14.85)	101
41-45	9 (8.04)	37 (33.04)	21 (18.75)	18 (16.07)	16 (14.29)	11 (9.82)	112
46-50	12 (5.97)	19 (9.45)	91 (45.27)	31 (15.42)	27 (13.43)	21 (10.45)	201
51-55	6 (6.90)	46 (52.87)	11 (12.64)	9 (10.34)	8 (9.20)	7 (8.05)	87
Above 55	5 (4.07)	9 (7.32)	12 (9.76)	70 (56.91)	14 (11.38)	13 (10.57)	123
Total	59 (8.31)	149 (20.99)	166 (23.38)	156 (21.97)	80 (11.27)	100 (14.08)	710

Data presented in Table 5 indicate the age-wise respondents' frequency of library visits. It could be noted that out of the total 710 respondents, 8.31 % of them make daily library visit. In this study, 20.99 % of them make library visit thrice a week and majority of the respondents (52.87%) in the age group of 51-55 years make library visit thrice a week. Out of the total 710 respondents, 23.38 % of them make library visit twice a week. Majority of the respondents (45.27%) in the age group of 46-50 years make library visit twice a week. In this study, 21.97 % of the respondents make library visit once in a week. Majority of the highest age group respondents (56.91%) make library visit once in a week. In this study, 11.27 % of the respondents make library visit once in a fortnight and the rest 14.08 % of them make library visit as and when required.

It could be seen clearly from the above discussion that library visit of twice a week takes the first order reporting among the advocates of Madras High Court, library visit of once in a week the second, library visit of thrice a week the third, library visit of as and when required the fourth and library visit of once in a fortnight the fifth and the daily library visit behaviour the last.

5.6 Information Sources

The advocates have been asked to indicate which of the following sources they depend most for their professional competency. Different types of sources are listed in the questionnaire, viz., personal collection at home, personal collection at office, bar library, Madras High Court library and senior professionals. The responses are given in Table 6.

Table 6 Age-wise Respondents' Dependence on Sources

Age	Personal Collection at Home	Personal Collection at Office	Bar library of Madras High Court	Madras High Court Library	Professional Seniors and Colleagues	Total
Below 36	28 (32.56)	21(24.42)	9 (10.47)	12 (13.95)	16 (18.60)	86
36-40	9 (8.91)	16 (15.84)	10 (9.90)	27 (26.73)	39 (38.61)	101
41-45	6 (5.36)	41 (36.61)	7 (6.25)	35 (31.25)	23 (20.54)	112
46-50	86 (42.79)	44 (21.89)	32 (15.92)	10 (4.98)	29 (14.43)	201
51-55	9 (10.34)	6 (6.90)	5 (5.75)	55 (63.22)	12 (13.79)	87
Above 55	16 (13.01)	8 (6.50)	11 (8.94)	23 (18.70)	65 (52.85)	123
Total	154 (21.69)	136 (19.15)	74 (10.42)	162 (22.82)	184 (25.92)	710

Data presented in Table 6 indicate the age-wise respondents' dependence on sources. It could be noted that out of the total 710 respondents, 21.69 % of them depend on personal collections at home. Majority of the respondents (42.79%) in the age group of 46-50 are dependent on personal collections at home. In this study, 19.15 % of them depend on personal collections at office and more than one third of the respondents (36.61%) in the age group of 41-45 years depend on personal collections at office. Out of the total 710 respondents, 10.42 % of them depend on the Bar library of Madras High Court. In this study, 22.82 % of the respondents depend on the Madras High Court library. More than a half of the respondents (63.22%) in the age group of 51-55 years depend on Madras High Court library. Moreover, 25.92% of the respondents depend on professional colleagues and seniors.

It could be seen clearly from the above discussion that depending on professional colleagues and seniors takes the first order reporting among the advocates of Madras High Court, depending on Madras High Court library the second, depending on personal collections at home the third, depending on personal collections at office the fourth and Bar Library of Madras high Court the last.

5.7 Internet Access

The use of e-resources partially depends on the extent of internet access. Most of electronic information resources are accessible through internet. The advocates have been asked to indicate the frequency of access to internet. The responses are given in Table 7.

Table 7 Age-wise Respondents' Frequency of Access to Internet

Age	Less than 2 hours	2-3 hours	3-4 hours	4- 5 hours	Above 5 hours	Total
Below 36	11 (12.79)	26 (30.23)	21 (24.42)	16 (18.60)	12 (13.95)	86
36-40	9 (8.91)	29 (28.71)	24 (23.76)	21 (20.79)	18 (17.82)	101
41-45	61 (54.46)	27 (24.11)	7 (6.25)	8 (7.14)	9 (8.04)	112
46-50	18 (8.96)	21 (10.45)	86 (42.79)	42 (20.90)	34 (16.92)	201
51-55	8 (9.20)	11 (12.64)	16 (18.39)	45 (51.72)	7 (8.05)	87
Above 55	13 (10.57)	12 (9.76)	19 (15.45)	27 (21.95)	52 (42.28)	123
Total	120 (16.90)	126 (17.75)	173 (24.37)	159 (22.39)	132 (18.59)	710

Data presented in Table 7 indicate the age-wise respondents' frequency of access to internet. It could be noted that out of the total 710 respondents, 16.90 % of them have below 2 hours of access to internet. More than a half of the respondents (54.46%) in the age group of 41-45 years have below 2 hours of access to internet. In this study, 17.75 % of them have 2-3 hours of access to internet and majority of the respondents (30.23%) of the lowest age group have 2-3 hours of access to internet. Out of the total 710 respondents, 24.37 % of them have 3-4 hours of access to internet. Majority of the respondents (42.79%) in the age group of 46-50 years have 3-4 hours of access to internet. In this study, 22.39% of the respondents have 4-5 hours of access to

internet. Majority of the respondents (51.72%) in the age group of 51-55 years have 4-5 hours of access to internet. Moreover, 18.59 % of the respondents have above 5 hours of access to internet and majority of the highest age group respondents (42.28%) fall under this category.

It could be seen clearly from the above discussion that 3-4 hours of access to internet takes the first order reporting among the advocates of Madras high court, 4-5 hours of access to internet the second, above 5 hours of access to internet the third, 2-3 hours of access to internet the fourth and below 2 hours of access to internet the last.

5.8 Advocates' Opinion towards Library Services

The importance of existence of libraries is to satisfy the information needs of its user. It has to move with the time and equip with modern technological gadgets to satisfy the needs of the users. The Madras High Court library and its bar library are service oriented libraries. Their main aim is to provide information to their clientele. Madras High Court library gives priority to the needs of the advocates. In order to support the argument and other activities of the High Court, the library should provide such services, which help in promoting and facilitating the effective use of information in any form by the clientele of the library.

Table 8 Age-wise Respondents' Views on Library Services

Age	Excellent	Good	No Opinion	Poor	Very Poor	Total
Below 36	26 (30.23)	19 (22.09)	9 (10.47)	14 (16.28)	18 (20.93)	86
36-40	7 (6.93)	14 (13.86)	10 (9.90)	29 (28.71)	41 (40.59)	101
41-45	4 (3.57)	39 (34.82)	7 (6.25)	37 (33.04)	25 (22.32)	112
46-50	84 (41.79)	42 (20.90)	32 (15.92)	12 (5.97)	31 (15.42)	201
51-55	7 (8.05)	4 (4.60)	5 (5.75)	57 (65.52)	14 (16.09)	87
Above 55	14 (11.38)	6 (4.88)	11 (8.94)	25 (20.33)	67 (54.47)	123
Total	142 (20.00)	124 (17.46)	74 (10.42)	174 (24.51)	196 (27.61)	710

Data presented in Table 8 indicate the age-wise respondents' views on library services. It could be noted that out of the total 710 respondents, 20 % of them report that the services of the library are excellent. Majority of the respondents (41.79%) in the age group of 46-50, report that the services of the library are excellent. In this study, 17.46 % of them report that the services of the library is good and more than one third of the respondents (34.82 %) of the age group of 41-45 years report that the services in the library are good. Out of the total 710 respondents, 10.42 % of them report that they have no opinion about the services in the library. In this study, 24.51 % of the respondents report that the services in library are poor. More than a half of the respondents (65.52%) in the age group of 51-55 years report that the services in the library are poor. Moreover, 27.61 % of the respondents report that services in library are very poor.

It could be seen clearly from the above discussion that the services in library are very poor takes the first order reporting among the advocates of Madras High Court; poor services take the second position, excellent services the third, good services the fourth and having no opinion the last.

6. SUGGESTIONS

The following suggestions are put forward to improve the use of the e-resources among the legal professionals of the Madras High Court:

i. Legal education curricula should be revised at the national level to accommodate the integration of information literacy and the use of e-library, either as embedded or standalone courses. This is in recognition of the changes in technology, especially, in managing legal information.
ii. The Madras High Court library and its bar library should urgently develop its e-library project by procuring all necessary facilities and also open the planned internet café for advocates to access the e-library and make effective use of its resources. The library of bar association and High Court should subscribe for more e-journals and e-databases. There

should be specific budget for new e-resources and the renewal of existing e-resources.

iii. Awareness should be generated on the online journals to obtain current legal information. More computer terminals should be installed in the bar library for easy access to advocates. The problems of slow access speed can be overcome by increasing the bandwidth.

iv. Compared to the total number of advocates, the number of users using the e-resource is small. Further, those who do use the e-resource do not have adequate knowledge of the above mentioned resources. Therefore, it is recommended that the qualified IT staff should be appointed to provide the expert guidance to users about e-resources and internet.

v. There should be complete campus-wide networking with the internet browsing facility connecting the advocate chambers. Some orientation training programmes should be organized by the bar association at regular intervals so that the maximum users can improve their excellence or proficiency in the use of the e-resources for their professional purposes.

vi. Electronic based legal services should be provided to users on payment basis as the legal professionals are in favour of fee based library services. so that there will be no financial constraints for the libraries to provide better electronic resource services to its users.

vii. A Quality Assessment Team (QAT) should be developed in Madras High Court library and its bar library to assess the quality of library service.

7. CONCLUSION

Library and information centres are playing a crucial role in the growth and development of the nation directly/ indirectly by providing better services to the members of the society. Law is a powerful weapon in providing justice in any system / organization. In fact, in the absence of proper implementation of law, the Library and Information Centres can not function in proper manner. Lawyers have been respected for their role models, setting the tone and lifting the quality of public life by the professional and personal integrity, penetrating intellect, dedication to public causes, philanthropic disposition and commitment to public service. Electronic resources have become the vital part of human life in the 21st century. High Court libraries and their bar libraries are rapidly transforming into digital libraries. It is important that Madras High Court library and its bar library maintain the E-Library with all necessary technology, for the effective use of legal information. A large portion of legal professionals in the Madras High Court are aware about the e-resources, but they do not know all its techniques and applications. Further, a few legal professionals of the Madras High Court still have no knowledge about the e-resources and related applications. For this purpose, there is a need for effective user education, to develop awareness and knowledge of the legal professionals. More efforts by librarians at Madras High Court and its bar are needed to educate users to effectively use the e-resources and its techniques and applications.

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Information Literacy and Use Pattern of Research Scholars in Bharathidasan University Library, Tiruchirappalli: A Case Study

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Abstract

This paper deals with the information seeking behaviour of scholars in difference disciplines in Bharathidasan Univerisity, Tiruchirappalli, Tamil Nadu. It highlights the sources used for gathering of information and the services utilized for their collection of information. This study also analyzes the ways to promote the library infrastructure and its services for the scholars of Bharathidasan University, Tiruchirappalli, Tamil Nadu.

Keywords: *Information Literacy, Information Seeking Behaviour, Research Scholars*

1. INTRODUCTION

Information literacy enables people to interpret and make informal judgments as users of information sources [1]. Information literacy is a part of the basic entitlement of every citizen, in every country in the World, freedom of expression and the right to information is instrumental to building and sustaining democracy. The concepts were introduced in 1974 by Paul Zurkowshi, President of the information Industry Association in a proposal submitted to the National Commission on Libraries and Information Science [2]. The proposal recommended that a national programme be established to achieve Universal Information Literacy within the next decade. Zurkowshi further defined this concept as "People trained in the application of information resources to their work can be called information literate" [3]. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information solution to their problems [4] . The present study is an attempt to examine the information literacy and use pattern of scholars in Bharathidasan University Library, Tiruchirappalli, Tamil Nadu.

2. OBJECTIVES OF THE STUDY

The objectives of this study is how the scholars gathering information and fulfill their information needs. The aim is to find out how the scholars seek information and to what extent they use existing library and information services. The objectives of the study are to determine as follows :

i. Types of information sources used.
ii. Services used to locating the information.
iii. To identify the role of library staff educating the library users.
iv. Identify the usage of library hours by scholars.
v. Know the level of satisfactory information literacy in locating the information needs by the scholars.

3. METHODOLOGY

A questionnaire was developed and distributed for collection of data required for the purpose. This preliminary study is limited to the survey of research scholars in various departments in Bharathidasan University, Tiruchirappalli, Tamil Nadu. The data analyses and interpretation is based on the response of 120 scholars in the Bharathidasan University in various disciplines.

4. DATA ANALYSIS AND INTERPRETATION

The sample population had 120 scholars. The respondents are frequently used library shown in the Table 1 below.

Table 1 Frequency of the Library Visit

Sl. No.	Frequency	No. of Respondents	%
1	Daily	48	40.0
2	Twice in a week	25	20.9
3	Weekly	21	17.5
4	Monthly once	14	11.6
5	Occasionally	12	10.0
Total		120	100

The Table 1 shows that 40% of scholars made visit to the library daily. It is quite interesting to find that 21% of the users visit twice in a week and monthly once respectively and 10% of scholars use library occasionally.

Table 2 Frequency of Borrowings of Books

Sl.No.	Frequency	No. of Respondents	%
1	Regularly	73	60.83
2	Occasionally	47	39.16
Total		120	100

The Table 2 shows that majority of the respondents (61%) are regularly borrowing books while only 39% of the respondents occasionally borrowing the books.

Table 3 Types of Information Sources Used

Sl.No.	Types of Information Sources	Total	%
1	Books	78	30.40
2	Journals	70	27.34
3	Newspapers	52	20.30
4	Reports	8	3.12
5	Internet	48	18.75
	Total	256	100

The Table 3 reveals that 30% of the respondents use books, 27% of the respondents use journals, and 20% of respondents use internet. Reports are used by very few (3.12%) respondents.

Table 4 Usage of Information Services

Sl.No.	Service Used	Total	%
1	Reference	42	24.70
2	Photocopy	32	18.80
3	Internet	44	25.80
4	Printing & Documents Delivery	24	14.11
5	CD Writing	4	2.35
6	Theses and Research section	24	14.11
	Total	170	100

Table 4 shows that 24.7% of respondents used reference service, 18.8% of respondents used photocopy service, 25% of the respondents used internet and 14% of the scholars used theses and research section. It is also interesting to know that 14% have used printing and documentation service, and CD writing service used by 2.35% of respondents .

Table 5 Source Preferred to Locate the Books

Sl.No.	Finding Books	Total	%
1	Library OPAC	36	28.5
2	Library Staff	18	14.2
3	Librarian	8	6.34
4	Directly from the Shelf	54	42.8
5	Help from other Users	8	6.3
6	Latest Addition Display	2	1.5
	Total	126	100

Table 5 shows that 42.8% of scholars have got books for reference directly from the shelf while 28% of respondent only used OPAC, librarian and library staff were approached only by 20% of the research scholars.

Table 6 Media to Locate the Information Required

Sl.No.	Particulars	Total	%
1	Magazine	40	21.0
2	Dailies	14	7.40
3	Reading books	48	25.5
4	Watching T.V.	10	5.30
5	Listening Radio	6	3.19
6	From Teachers	20	10.60
7	Through their Friends	10	5.30
8	Internet Browsing	24	12.7
9	CD ROM Database	-	-
10	Library Display	16	8.50
	Total	188	100

Table 6 shows that 25.5% of scholars have got their information from reading books and while 21% of research scholars prefer magazine and 12.7 of scholars use internet for gathering the information. 5.3% of respondents watching TV and get information through their friends respectively. 10.6% of the scholars get information from their teachers.

Table 7 Awareness of Library Sources and Services

Sl. No.	Particulars	Poor	%	Fair	%	Good	%	Very Good	%
1	Library Collection	3	6	7	14	27	54	13	26
2	Library Services	-		8	16	30	44	12	24
3	Library Rules	-	-	2	4	32	64	16	32
4	Latest Information	1	-	2	4	28	56	19	38
5	Communication/Circular of the Library	2	4	8	16	13	26	27	54
6	Assistance & Instruction of Library Staff	1	2	5	10	25	50	18	36

It is evident from the Table 7 that most of the respondents have awareness on library collection, rules, services, library communication, library instruction and up to-date of information. 56% of the respondents rated good for awareness on latest information. Awareness of library collection and library service are over all good level by 54% and 44 % of scholars respectively. Opinion about communication to the users is rated as very good by the respondents.

Table 8a Information Literacy Level for Accessing of E-resources

Sl. No.	Search Engines	No. of Respondents	%	Rank
1	Google	86	48.4	I
2	Yahoo	48	26.9	II
3	MSN	16	8.9	III
4	AltaVista	12	6.7	IV
5	Ask.com	10	5.6	V
6	Web Live Search	06	3.3	VI
	Total	178	100	

Table 8a shows that the majority of research scholars (48.4%) access e-resources through Google search engine. 27% of scholars used Yahoo search engine, 8.9% of scholars used MSN search engine. The Altavista is coming at the 4th place, rest of them are coming in the next places respectively.

Table 8b Search Techniques Used by the Respondents

Sl.No.	Search Techniques	No. of Respondents	%
1	Enter a Single Word	46	28.0
2	Enter a Several Word	36	21.0
3	Enter phrase in Quotes	22	13.4
4	Plus Sign(+) for Many Results	40	24.0
5	Field Syntax	8	4.8
6	Boolean Operators (AND, OR, NOT)	12	7.3
	Total	164	100

Table 8b reveals that the majority of research scholars enter single word for access the data and they give choice for the search technique of using plus sign. 24% of the respondents use several word search for access the data. The Boolean operation technique is used by 7.3% of scholars. Some other techniques are used by very low persentage of scholars.

Table 9 Satisfaction Over the Awareness of Information Literacy

Sl.No.	Opinion Satisfaction	Total	%
1	Satisfied	108	90
2	Unsatisfied	12	10
	Total	120	100

90% of the research scholars have satisfied over awareness of information literacy and 10% of the respondents are not satisfied

5. FINDINGS

i. The Bharathidasan University Research Scholars have thirst of knowledge to develop their research activities. 40% of scholars made daily visit to the library. The least percentage of scholars visits library on monthly once and occasionally.
ii. The majority of the respondent (61%) are regularly borrowing books while 39% of the scholars occasionally borrowing the books from the library.
iii. 30% of respondents have used books, while journals are used by 27% of scholars. Internet is used by 18% of the scholars.
iv. Among the library services, the reference service and internet have been used by more number of respondents. Photocopy and printing documents are used by 18% and 14 % respectively.
v. The source preferred to locate the books directly from the shelf is 42.8%. It shows that the scholar were familiar to locate the books from stack and the shelve arrangement is good. While 28% scholars are using library OPAC, only 14% of scholars ask help from library staff.
vi. 56% of the respondents rated good for awareness on latest information. Awareness of library collection and library service are over all good level by 54% and 44 % of scholars respectively.
vii. Majority of research scholars (48.4%) access e-resources through Google search engine. 27% of scholars used Yahoo search engine, 8.9% of scholars used MSN search engine.
viii. Majority of research scholars enter single word for access the data and they give choice for the search technique of using plus sign. 24% of the respondents use several word search for access the data. The Boolean operation technique is used by 7.3% of scholars.
ix. 90% of the respondents were satisfied on information use and the level of information literacy.

6. SUGGESTIONS

i. It is recommended that the library professional and authorities must aim for more number of apt information literacy programme to enhance the awareness of library resources and services as the users belongs to heterogeneous groups.
ii. Most of the scholars noted that current journals are not received in time in library. The library authorities

may inform the vendors to supply the issues immediately after the journal is published.

iii. Back volumes are not prompt arrangements in the shelve and unable to know the availability of back issues. So action may be taken to enter all back issues entries on the system

iv. Latest arrival of books is not shown in the new arrival desk. The list of new arrival of books may be sent to each department regularly.

v. The scholars must be informed by the library staff about UGC-CSIR, NET Examination, Scholarship details, and Job opportunities through the scroll screen display or OPAC monitor. This will be helpful to promote the scholars endeavors.

vi. Most of the scholars are using internet and reference services behind office hours. Hence, reference section should be opened till 8.00 pm.

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Collaborative Authorship in Scholarly Publications: An Overview

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Abstract

This paper discusses the perspectives of collaborative authorship in scholarly publications. Beyond any doubt, many studies prove an upward trend in the growth of collaborative author productivity and none failed to compare the figures with that of the single authored publications which always prove to be smaller. The matter of concern of this paper, though not displayed explicitly, questions any immediate conclusion that single authored publications may become extinct. The paper provides a lead to information scientists to undertake studies with specific aim to track down the growth or decline of single authored publications exclusively in specific subject domains.

Keywords: *Authorship Trends, Bibliometrics, Collaborative Authorship, Research Collaboration*

1. INTRODUCTION

The Author scholar of any contribution is a social animal. He or she works in a social environment and resulting publications of any research benefit the scholar community and ultimately the society. Achievement as "such a reward is not bestowed by one specific nation (according to its law) but by an international community of peers" suggesting that claiming authorship or copyright in science is often based on the subjectivity of people already established in scientific realm. The Royal Swedish Academy of Sciences has identified single contributors for a very long time. To quote one example, in Physics, at least upto 1951, the prize had gone to individuals only, though later, more than one was awarded in a single field. But it is to be noted that they all need not be collaborative contributions, but separate simultaneous contributions with a few exceptions.

2. AUTHORSHIP PATTERN: DOMAIN OF LIBRARY AND INFORMATION SCIENCE

Studies on the authorship pattern being one of the areas in Bibliometrics and Scientometrics as well, fall under the domain of Library and Information Science, though some studies have been carried out as purely statistical analyses.

2.1 Single Vs Collaborative Authorship

In general, the bulk of the research professional lives are spent working in cooperation and collaboration with others within committees or groups, research teams, boards, departments, professional societies, or corporations. Self-sufficiency, though a noble ideal, is arguably an obsolete one. Individually authored contributions continue to persist, though claimed to be on the decline in various disciplines while collaborative scientific productivity has been on the increase and becoming popular among the scientific community. Karisiddappa *et al.,*analysed the authorship pattern in psychology and found that the proportion of single authored papers has fallen to 39.43% in 1988 when compared to 84% in the 1920's indicating the trend towards multiple authorship [1].

2.2 Collaborative Authorship

According to Merriam-Webster's Online Dictionary (2009) , the word "collaborative" means "to work jointly with others or together especially in an intellectual endeavour"[2].

As found in records, collaboration is said to have been existing for more than hundreds of years, and still continues to play a vital role in the construction of written

work. Although the present science culture tends to put more emphasis on the collaborative contributions, it may not be fair to discredit the advantages and accomplishments of author as a single person.

2.3 Single Author: Declining Trend

Price , on the basis of a survey of Chemical Abstracts observed a steady increase in the trend towards multiple authorship and held that "… if it continues at the present rate, by 1980 the single authored papers will be extinct" [3]. Almost after three decades of the speculation of price, single authored articles have not become extinct but reported to be definitely on the decline.

3. COLLABORATIVE AUTHORING OR WRITING

According to A. Dillon (1993), collaborative writing denotes "activities involved in the production of a document by more than one author, then pre-draft discussions and arguments as well as post-draft analyses and debates are collaborative components" [4]. The collaborative authoring process includes the writing activity as well as group dynamics. R. Rimmershaw states that "...any piece of writing, published or unpublished, ascribed or anonymous, to which more than one person has contributed, whether or not they grasped a pen, tapped a keyboard, or shuffled a mouse." This definition is specific to collaborative online publishing [5].

As Biagioli points out, "Collaboration in scientific writing is particularly interesting because it is considered to be the norm, but methods of recognizing individuals within the collaborative group, or the group as a whole, are constantly being challenged and changed. Singular authorship in genral other than science is developed from an idea that the individual creator used his own intellect and exertion to create a work" [6]. There is a claim that Science writing cannot be the work of an individual, as any work cannot be independent of citations from other's contributions, though the author for a contribution is one field .

3.1 Collaborative Authorship: Origin

Evidences are more for collaborative authorship in the publications of English literature. Documented, collaborative efforts in writing began as early as the Elizabethan era in England and continued well into the 1600's, when William Shakespeare's claim to individual authorship expressed "the always-already present…human desire to possess what one has written". An examination of theatre during this era suggests "the drama…was written by more than one person, produced through collective forms of thinking" and therefore emphasized authorship as a pluralized phenomenon [7]. The joint award is noticed in Physics for the first time in 1951 for nobel prize [8].

3.2 Collaborative Authorship: A Librarian's Approach

Authorship information provides an effective tagging to any document. This factor provides the lead clue to the identification of a specific document. So far as the provision of research information in libraries, librarians are concerned with core journals and productive authors in each of the fields of interest to his/her users. Within the population of authors of scientific productivity, patterns emerge such as single, joint and multiple authorship. Joint authors denote the combination of two authors in producing a document or publication. However author collaboration is the act whereby two or more people agree to execute a certain project, be it intellectual or non-intellectual. Among the previous studies of author collaboration were those of Gupta who reported increase in author collaboration in the literature of exploration geophysics [9]. Price also reported some incidence in collaboration in science [10]. Clarke also reported collaboration among the biomedical writers [11]. Frame and Carpenter studied international collaborative behaviour among scientists and reported a higher degree of collaboration in the basic fields of science rather than in applied fields [12]. Price and Beaver found that most productive member was by far the most collaborative in the literature of oxidative phosphorylation and terminal electron transport [13]. Mullins described groups of collaborators as "solidarity groups" [14].

3.3 Collaborative Authorship: Factors of Correlation

Goffman (1977) in one of his studies, related authorship patterns to the Shannon entropy measure [15]. Analysts showed more interest in covering longer period, exceeding a decade in tracing collaborative authorship trend. Pao (1982) studied the pattern in computational

musicology from 1949 to 1975 and concluded that even though a small number of authors were coauthors, the heavy collaborators were also the most prolific in the field [16]. Weintraub (1980) provided a theoretical generalisation that whereas scientists collaborate, humanists rarely collaborate [17]. Shaw (1979) reported that co-authorship establishes a relation among authors which is a measure of the extent to which they communicate directly and that the strength of this relationship between two authors may be computed by counting the number of papers they produce jointly [18].

3.4 Types of Collaborative Contributions

Subramanyam (1983) inferred that collaboration has also been found to influence the visibility and productivity of scientists [19]. He went further and identified six types of author collaboration: teacher-pupil collaboration, collaboration among colleagues, supervisor-assistant collaboration, researcher-consultant collaboration, collaboration between organisations and international collaboration. He also observed that the degree of collaboration varies from one discipline to another. It is high in the scientific and technical fields but low in the humanities.

3.5 Collaborative Index

Lawani (1972) introduced the term collaborative index to describe the average number of authors per paper for a given set of papers [20]. He stated that "the greater the collaborative index of a set of papers, the higher the proportion of quality papers in the set" and that the collaborative index can be used to measure quality in the aggregate.

3.6 Increasing Trends in Collaborative Authorship

At the beginning of the twentieth century, 80% of chemistry papers had one author; sixty years later, most had multiple authors. In the first decade of the twentieth century, 75% of biological and physical science papers had one author. By contrast, a 1997 report on the most frequently cited papers in biology concluded that solo research performance, as represented by single-author papers, is near extinction. In 1963, only 18% of articles in nine key anthropology journals had more than one author; twenty years later, it was 40%. Although only 8% of papers in the American Economic Review were multiauthored in 1950, by 1993, the percent had increased to 54.9%. Between 1895 and 1925, only 1% of articles in four core sociological journals were written by more than one author, providing a stronger evidence for the dominance of multiple authors even during the earlier part of the twentieth century.

3.7 Collaboration and Publication Acceptance

Collaborative publications in journals are found to be on a trend of constant increase, these articles have a greater incidence of being accepted for publication. Studies indicate a relationship between these two factors, particularly in fields where a majority of publications are results of collaborative authorship. In fact, one pair of researchers noted that multiauthored papers in The Physical Review had a 95% acceptance rate. An examination by Peter Hernon, Allen Smith, and Mary Bailey Croxen of papers submitted to C&RL for an eleven year period, from 1980 to 1991, indicated that single authors submitted more papers, but those papers by multiple authors were published more frequently [21]. Stanley Presser's study, though limited to one social psychology journal, found that collaboration is associated with more favourable review of papers, both those from Ph.D. departments and non-Ph.D. departments [22]. He expressed that the relation was somewhat stronger in the latter, suggesting that collaboration is more important in minor departments.

3.8 Collaboration and Article Quality

One is made to presume that the quality of a paper may be better, if journals are more likely to accept papers with more than one author and the percentage of published multìauthored papers increasingly outweighs that of single authored ones. Numerous studies have attempted to prove this association by defining quality in different ways, including prestige of a journal, peer and/or editorial assessments of papers, frequency of citation, funding, and type of article.

3.9 Collaboration and Author Productivity

It may be difficult to fix up the relationship between collaboration and productivity as the interacting and influencing factors may be many and not a single one. Superficially, it seems reasonable to assume that by sharing research work, the per capita productivity of

scientists gets enhanced. However, there are wide ranging variables, and except in a few cases, it is impossible to determine whether a writer could have been even more productive in a different mode.

An explicit evidence of a relationship came from the field of chemistry in a study by Derek J. De Solla Price and Donald Beaver [23]. They discovered that chemists working alone or with another author wrote four papers in five years, but those working with more than twelve collaborators each wrote fourteen articles. Zhang Haiqi found that often-cited papers in biology had more authors, typically between six or seven, than less-cited articles. Analyzing chemists' Publication styles, Alan E. Bayer and John C. Smart [25] determined that the most likely authors collaborate and those who wrote equal numbers of single and multi-authored publications also were most likely to remain productive throughout their careers [25]. The relationship between collaboration and productivity appears to rest on the number of collaborators. The greater the number of collaborators, greater is the potential for increased productivity. Indeed, a recognized trend in collaboration is the increase of collaborative authorship. James L. Terry in one of his studies of thirteen social sciences journals from 1984 to 1994 summed up this pattern and found that the trend over time within each profession is towards a gradual increase in the average number of authors per article [26]. Of course, not all research and not all fields at present mandate a research process that is exclusively collaborative. However, the trend towards greater numbers of collaborators in growing in the sciences and social sciences has been a general trend in many of the Bibliometric and Scientomentric studies.

4. CONCLUSION

As evidenced in many of the publications on the authorship pattern in the sciences and social sciences, collaboration is said to encourage author productivity and enhances the quality of articles. Patel referred to the increase in collaboration as part of a process following specialization in which a discipline is reintegrated at a higher level. According to Pulla Reddy and Vimala [27] (1996) "Collaborative research is a well recognized feature of modern science, and there has been a consistent trend towards increased collaboration in all branches of science during the present century" [27].

Collaboration offers academics an opportunity to participate in research and development at a higher level. Collaboration brings other benefits as well besides alleviating the professional isolation and to some extent the citation amnesia as Gallegher[28] points out 'Collaborative contributions project a main focus in all disciplines, partnering increased opportunity and due recognition for contributing to the research and development of disciplines' [28]. Though many studies find single authored publications, on the decline, is only a comparative look. As scientists project a healthy trend for collaborative authorship, no doubt, it is on the constant increase in many disciplines. When this number of collaborative publications authors is compared with the number of single authored contributions, the latter always presents a smaller number. Otherwise, single authored contributions maintain a continuous profile though low comparatively. Studies look into single authored publications as a byproduct of authorship pattern studies. Perhaps, exclusive 'single authored publication' studies in different subject areas may reveal the exact growth rate. New entrant-scholars, Ph.D. holders on a teaching job hunt and Indian scientists in general opt either for single authored publication mostly or for joint authors and not a group. Single author concept and speculations on this species are constants and die hard.

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Use Pattern of E-Resources in Aalim Muhammed Salegh College of Engineering Library, Chennai, Tamil Nadu: A Study

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Abstract

The rapid advances in information processing, storage and communication technologies have revolutionized the role of worldwide libraries in disseminating information services to the users. Libraries are facing new challenges, new competitors, new demands, new expectations and variety of information services from users tailored to their wants and needs. Efforts are begin made globally to improve information and communication technology and growing nations of globalization. The paper presents the findings of the survey about the knowledge and use of electronic resources by the users of Aalim Muhammed Salegh College of Engineering, Tamil Nadu.

Keywords: *E-Resources, Higher Education, Use Pattern*

1. INTRODUCTION

Today libraries face significant challenges in responding to change while sustaining their traditional functions. E-resources play a vital role in creation and dissemination of knowledge [1]. E-resources include e-journals, internet information and online journal databases. Gail Macmillan defines e-journals as "any serials produced, published and distributed nationally and internationally via electronic networks such as Binet and Internet" [2]. Online journal database is a database containing the full text information of an article available in the journal, e.g., Springer-Verlag, and IEL online [3]. Aalim Muhammed Salegh College of Engineering was established in the year 1990. At present, the College has 6 UG courses and 2 PG courses. The well equipped modern Library has a collection of 22700 books and 153 journals. The library has a digital section which consists of 10 multimedia based systems with internet connectivity. The digital section provides CD-ROM retrieval services and also provides access to freely available e-journals in the internet.

2. OBJECTIVES OF THE STUDY

The main objectives of the study are:

i. To determine the purpose and utilization of e-resources.
ii. To find out frequency of using library for e-resources.
iii. To study comparative usage of print verses electronic journals.
iv. To find out the hindrances and problems faced by the users while accessing and using electronic journals.
v. To study the satisfaction level of users for infrastructural facilities provided by the library.
vi. To find out whether library staff give orientation and extend their help to use e-resource facility.
vii. To suggest measures for improvement of the use of e-journals.

3. METHODOLOGY

For the purpose of the study, AMS College of Engineering Library was taken into consideration where the free e-journal access are given to all the users. In order to collect the comprehensive and relevant data for the study, the questionnaire method was used. List of questions were formulated keeping in view the objectives of the study [4]. The digital section of the library has

only 10 systems.The response with data was received from 40 students for this study.

4. DATA ANALYSIS AND INTERPRETATION

The data collected were analysed and inference derived, based on standard statistical techniques.

Table 1 reveals that 27 (67.2%) users were male and 23 (32.5%) users were female who access e-resource for different purpose.

Table 1 Gender-wise Access of E-resources

Sl.No.	Gender	No. of Respondents	%
1	Male	27	67.5
2	Female	13	32.5

Table 2 shows that 33 (82.7%) were Undergraduate students and 7 (17.5%) students were Postgraduate Students.

Table 2 Qualification-wise Access of E-resources

Sl.No.	Qualification	No. of Respondents	%
1	UG	33	82.5
2	PG	7	17.5

From the Table 3, it is clear that 30% of the users access e-resource to know the latest information in their specialisation. 20% of the users access for their projects. 15% of the users access for preparing notes. 12.5% of the users used e-resource for seminar work. 10% of them access e-resource for journal articles reading and 7.5% of them access for career development. Only 5% of the users access e-resources for communication purpose.

Table 4 shows the frequency of using e-resources. Here an attempt has been made to find out the frequency of using the e-resources. It reveals that 55% of the users access daily and 25% of them access e-resources 2-3 times a week. Only 10% of the users access e-journals occasionally.

Table 3 Purpose of Accessing of E-resources

Sl. No.	Qualification	No. of Respondents	%
1	For knowing Latest Information	12	30.0
2	For Project Work	8	20.0
3	For preparing Notes	6	15.0
4	For Seminars	5	12.5
5	For Journal Papers Reading	4	10.0
6	For Career Development	3	7.5
7	For Communication	2	5.0

Table 4 Frequency of Using E-resources

Sl. No.	Frequency	No. of Respondents	%
1	Daily	22	55.0
2	2-3 times in a week	10	25.0
3	Once in a week	4	10.0
4	Occasionally	4	10.0

Table 5 Users Attitude Towards Access of E-Resources

Sl. No.	Type	No. of Respondents	%
1	E-resources	29	72.5
2	Print	8	20.0
3	Both	3	7.5

Table 5 shows that 72.5% of the users want to access only electronic journals, 20% of the users want to read from print versions and 7.5% of the users want to access from both.

Table 6 Format Preferred by the Users to Refer the Internet

Sl. No.	Formats	No. of Respondents	%
1	HTML	26	65.0
2	PDF	14	35.0
3	RTF	-	-

Table 6 reveals the formats preferred by users to refer the internet e-resources. Nearly 65% of students prefer html format for the reference of e-resources and 35% prefer pdf. No one is aware of rtf format.

Table 7 Hindrance of Accessing of E-journals

Sl. No.	Problem	No. of Respondents	%
1	Lack of Infrastructure	10	25.0
2	Not Easy to Use	9	22.5
3	Unorganized	8	20.0
4	Difficult to Read from Screen	7	17.5
5	Lack of Training	4	10.0
6	Preference of Paper Journals	2	5.0

Table 7 reveals the hindrances of accessing electronic journals. Even though e-resources are very important source of information, but there are some problems faced by users. Lack of infrastructure, lack of training, difficult to read from screen etc. Here an attempt has been made to find the major problems faced by the users while accessing e-resources.

Table 8 Taking Assistance for Accessing of E-resources

Sl. No.	Assistance Taken From	No. of Respondents	%
1	Library Staff	22	55.0
2	Friends	10	25.0
3	Without Assistance	8	20.0

Table 8 indicates that majority of the students are taking assistance from library staff and 25% of them are taking assistance form friends while using internet in the library. Nearly 20% of the students are using internet without assistance.

Table 9 Satisfactory Level of Infrastructural Facilities

Sl. No.	Level	No. of Respondents	%
1	Fully Satisfied	26	65.0
2	Partially Satisfied	10	25.0
3	Unsatisfied	4	10.0

Table 9 shows the satisfactory level of infrastructural facilities provided by library for accessing e-resources. 65% of the users fully satisfied with the infrastructure facility. 25% of the users partially satisfied and 10% of the users are not satisfied.

5. FINDINGS

This study offers a way to identify the acceptance of e-resources, advantages and the problems encountered while accessing e-journals. The major findings of the study are:

i. The frequency of usage of e-resources is increasing day by day.
ii. In comparison to female users, male users are more interested in accessing e-resources.
iii. Electronic resources are more popular with science students.
iv. Majority of the users use the electronic journals for knowing latest information in the specialized subjects.
v. Majority of the users access internet daily.
vi. Easy accessibility, easy search and timeless availability of e-resources are the key advantages as revealed in the study.
vii. Most of the students find lack of training in using internet.
viii. Nearly 65% of the users are fully satisfied with the facilities provided by the AMS College of Engineering library.

6. CONCLUSION

The study carried out at AMS College of Engineering Library reveals that e-journals have become the vital part of information dissemination process. It is clear from the study that younger generation has accepted the digital reading culture and use of electronic journals is going to acquire a considerable training exercise. The study also brought out some major suggestions for improving the use of e-journals. This study will help the information professionals in developing e-journal services to their users.

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Information Access Pattern among the Students of Professional and Non-Professional Courses in Annamalai University: A Study

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Abstract

The present study aims to find out the information access pattern among the students of professional and non-professional courses in Annamalai University. The sample of 1800 students selected randomly were studied. The results revealed that non-professional course students differed in information access on the basis of religion-wise, gender-wise and community-wise than professional course students.

Keywords : *Access Pattern, Information, Students*

1. INTRODUCTION

The present era is the era of information and knowledge revolution. Many electronic resources are available in the library. The increase in information available on the Web has affected information seeking behavior. Innumerable types of information, in a large variety of containers and in many different locations, are all available in one place (Fidel *et al.,* 1999) [1]. In the modern society, the types of information and the media which present them have become manifold and multifarious, offering men and women a vast selection.

Any analysis of the literature of information seeking behaviour must be based upon some general model of what might be called "information behaviour", of which information seeking behaviour is a part. Wilson's (1981) model shown in Figure 1 locates the concepts of information need, information seeking, information exchange, and information use in a flow diagram that can be seen as charting the behaviour of an individual faced with the need to find information. Wilson argues that a general model of this kind is useful in identifying areas where additional research could be of value and points to the lack of research on information use as an example [2].

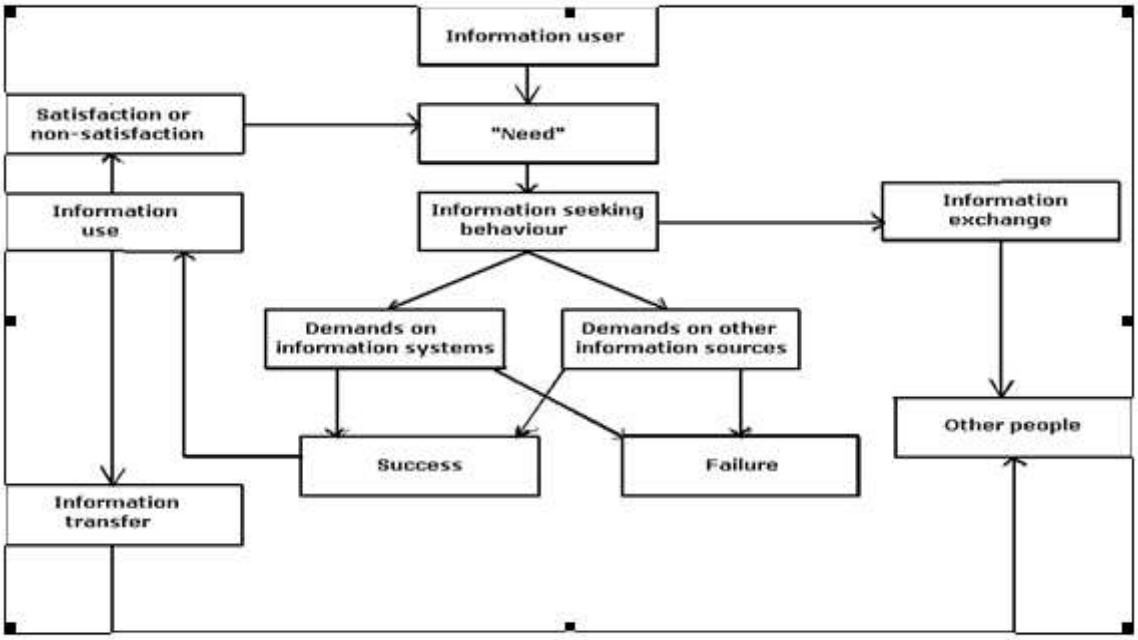

Fig.1 Areas of information behaviour research

According to Wilson a general model of information behaviour needs to include at least the following three elements [3]:

i. An information need and its drivers, i.e., the factors that give rise to an individual's perception of need.
ii. The factors that affect the individual's response to the perception of need and
iii. The processes or actions involved in that response.

2. REVIEW OF LITERATURE

This chapter deals with the relevant review of literature. The analysis of review of literature is the key focus of any research. It enables one to be aware of the past and current trends in any particulars, branch of research.

P.S.Kawarter (1988) has conducted a study of the information seeking behaviour of research scholars of three universities of Rajasthan to ascertain the views of the scholars on the adequacy of library resources and services [4].

Marchionini (1995) reveals that information seeking is a fundamental human process closely related to learning and problem solving. Many factors initiate the search for information, among these are the individuals' task or profession [5].

3. OBJECTIVES

The following objectives are framed for the purpose of the present study:

i. To identify the students' sources and purposes of collecting information in the library.
ii. To study the respondents' desired areas and methods of searching for information in the library.
iii. To examine the respondents' extent of access to network consortium.
iv. To analyze the respondents' extent of knowledge about computer software and database information.

4. STUDY AREA

To analyse the information access pattern among the students of professional and non-professional courses in Annamalai University have been taken as study area.

5. METHODOLOGY

This study aims at analyzing the information access pattern among the students of professional and non-professional courses in Annamalai University. In this study, a total of 1800 students are selected as sample, including 900 professional course students and 900 non-professional course students. While selecting the sample, stratification method has adopted with a view to relative weightage to the respondents of different categories. Thus, the sampling of the study belongs to the stratified random sampling method. All the students have been responded and the total number of filled-in questionnaires received was 1800.

6. RESULTS AND DISCUSSION

Table 1 Religion-wise Distribution of Respondents

Sl.No.	Religion	No. of Respondents	%
1	Hindu	1265	70.28
2	Muslim	125	6.94
3	Christian	410	22.78
	Total	1800	100

A study of data in Table 1 indicates the religion-wise distribution of respondents. It could be noted that out of the total 1800 respondents, 70.28% of them belong to the Hindu religion, 6.94% belong to Muslim community and 22.78% of the respondents are found in the Christian group.

It is concluded that more than two thirds of the respondents are Hindus.

Table 2 Community-wise Distribution of Respondents

Sl.No.	Community	No. of Respondents	%
1	Forward Community	360	20.00
2	Backward Community	454	25.22
3	Most Backward Community	660	36.67
4	Scheduled Community	326	18.11
	Total	1800	100

A study of data in Table 2 indicates the community-wise distribution of respondents. It could be noted that out of the total 1800 respondents, 20% of them belong to the forward community group and 25.22 % of them come under the backward community group. In this study, 36.67% of the respondents are found to be in the most backward community group and the rest 18.11% of them belong to the scheduled community group.

It is concluded that more than half of the respondents belong to the most backward community and backward community groups.

Table 3 Gender- wise Distribution of Respondents

Sl.No.	Gender	No. of Respondents	%
1	Male	1206	67
2	Female	594	33
	Total	1800	100

A study of data in Table 3 indicates the gender-wise distribution of respondents. It could be noted that out of the total 1800 respondents, more than two thirds of the respondents (67%) belong to the male group and the rest one third of them (33%) are females.

It is concluded that male students constitute more in number than female respondents, indicating the presence of male domination in University education.

Table 4 Distribution of Respondents According to Parental Occupation

Sl.No.	Occupation	No. of Respondents	%
1	Labour	150	8.33
2	Farmer	455	25.28
3	Business	256	14.22
4	Private employees	387	21.50
5	Government employees	552	30.67
6	Total	1800	100

A study of data in Table 4 indicates the parental occupation-wise distribution of respondents. It could be noted that out of the total 1800 respondents, 8.33% of them belong to the labour households and 25.28% of them belong to the farm households. In this study, 14.22% of the respondents belong to the business households and 21.55%of the parents are private employees. It is observed that 30.67% of the respondents' parents are government employees.

It is concluded that more than a half of the respondents belong to the non-farm households.

Data presented in Table 5 indicate the gender-wise respondents' frequency of library visits. Majority of the female respondents (43.10%) make library visits thrice a week. A considerable number of male respondents (24.71%) make library visits twice a week.

Table 5 Gender-wise Respondents' Frequency of Library Visits

Gender	Daily	Thrice a week	Twice a week	Once a week	Once in a fortnight	As and when required	Total
Male	89 (7.38)	137 (11.36)	298 (24.71)	237 (19.65)	218 (18.08)	227 (18.82)	1206
Female	176 (29.63)	256 (43.10)	59 (9.93)	44 (7.41)	33 (5.56)	26 (4.37)	594
Total	265 (14.72)	393 (21.83)	357 (19.83)	281 (15.61)	251 (13.94)	253 (14.06)	1800

Chi-square Summary Result

Chi-square Calculated Value	Degrees of Freedom	Chi-square Table Value 5%
503.3	5	11.1

Chi-square test is applied for further discussion. The computed chi-square value is 503.3, which is greater than its tabulated value at 5% level of significance. Hence, the difference in gender status is statistically identified as significant with respect to respondents' frequency of library visits.

It could be seen clearly from the above discussion that male respondents lag behind female respondents in the frequency of library visits.

Data presented in Table 6 indicate the gender-wise respondents' source of collecting study materials. Half of the female respondents (49.83%) make use of books and reference sources to collect study materials. A considerable number of male respondents (23.30%) make use of books to collect study materials.

Chi-square test is applied for further discussion. The computed chi-square value is 430, which is greater than its tabulated value at 5% level of significance. Hence the difference in gender status is statistically identified as significant with respect to respondents' source of collecting study materials.

It could be seen clearly from the above discussion that female respondents mainly depend on books and reference sources to collect the study materials than male respondents.

Table 6 Gender wise Respondents' Source of Collecting Study Materials

Gender	Books	Books and Reference Sources	Periodicals and Books	Theses and Project Works	Conference Proceedings	Journal Articles	Total
Male	281 (23.30)	114 (9.45)	181 (15.01)	169 (14.01)	213 (17.66)	248 (20.56)	1206
Female	151 (25.42)	296 (49.83)	42 (7.07)	46 (7.74)	33 (5.56)	26 (4.38)	594
Total	432 (24.00)	410 (22.78)	223 (12.39)	215 (11.94)	246 (13.67)	274 (15.22)	1800

Chi-square Summary Result

Chi-square Calculated Value	Degrees of Freedom	Chi-square Table Value 5%
430.0	5	11.1

A study of data in Table 7 indicates the gender-wise respondents' desired area of library information collection. One third of the female respondents (33.33%), would like to collect information from the circulation section. Majority of the male respondents (32.01%) wish to collect information from the reference section.

Table 7Gender-wise Respondents' Desired Area of Library Information Collection

Gender	Reference Section (%)	Periodical Section (%)	NBM Section (%)	Acquisition Section (%)	Reprographic Section (%)	Circulation Section (%)	Thesis Section (%)	Total
Male	386 (32.01)	167 (13.85)	168 (13.93)	93 (7.71)	143 (11.86)	95 (7.88)	154 (12.76)	1206
Female	38 (6.40)	44 (7.41)	166 (27.95)	87 (14.65)	22 (3.70)	198 (33.33)	(39) (6.56)	594
Total	424 (23.56)	211 (11.72)	334 (18.55)	180 (10.00)	165 (9.17)	293 (16.28)	193 (10.72)	1800

Chi-square Summary Result

Chi-square Calculated Value	Degreesof Freedom	Chi-square Table Value 5%
387.7	6	12.6

Chi-square test is applied for further discussion. The computed chi-square value is 387.7, which is greater than its tabulated value at 5% level of significance. Hence the difference in gender status is statistically identified as significant with respect to respondents' desired area of library information collection.

It could be seen clearly from the above discussion that female respondents mainly wish to collect information from circulation section.

Data presented in Table 8 indicates the gender-wise respondents' place of work with internet. Majority of the female respondents (49.16%) make use of University internet service. A considerable number of male respondents (29.52%) work in the browsing centre.

Chi-square test is applied for further discussion. The computed chi-square value is 453.5, which is greater than its tabulated value at 5% level of significance. Hence,

the difference in gender status is statistically identified as significant with respect to respondents' place of work with internet.

It could be seen clearly from the above discussion that female respondents mainly make use of university library internet for their information requirement.

Table 8 Gender-wise Respondents' Place of Work with Internet

Gender	Department and Home (%)	University Library (%)	Browsing Centre (%)	University and Home (%)	University Library and Browsing Centre (%)	Total
Male	210 (17.41)	112 (9.29)	356 (29.52)	232 (19.24)	296 (24.54)	1206
Female	27 (4.55)	292 (49.16)	33 (5.56)	183 (30.81)	59 (9.93)	594
Total	237 (13.17)	404 (22.44)	389 (21.61)	415 (23.06)	355 (19.72)	1800

Chi-square Summary Result

Chi-square Calculated Value	Degrees Freedom	Chi-square Table Value 5%
453.5	4	9.49

A study of data in Table 9 indicates the gender-wise respondents' methods of searching information in libraries. Majority of the female respondents (42.59%) seek library information with the help of the librarian and library staff. The male respondents constitute more number in seeking library information with the help of catalogue (25.62%) or by searching the shelves (24.30%) than the female respondents.

Chi-square test is applied for further discussion. The computed chi-square value is 100.1, which is greater than its tabulated value at 5% level of significance. Hence, the difference in gender status is statistically identified as significant with respect to respondents' methods of searching library information.

It is concluded that female respondents mainly seek library information with the help of the librarian and library staff.

Table 9 Gender- wise Respondents' Methods of Searching Library Information

Gender	Searching The Shelves (%)	By Using Catalogue (%)	Asking help from Librarian or Library Staff (%)	Through Internet (%)	Total
Male	293 (24.30)	309 (25.62)	433 (35.90)	171 (14.18)	1206
Female	85 (14.31)	80 (13.47)	253 (42.59)	176 (29.63)	594
Total	378 (21.00)	389 (21.61)	686 (38.11)	347 (19.28)	1800

Chi-square Summary Result

Chi-square Calculated Value	Degrees of Freedom	Chi-square Table Value 5%
100.1	3	7.81

A study of data in Table 10 indicates the gender-wise respondents' knowledge of computer software operating system. Majority of the female respondents (58.75%) are familiar with the use of Window95/98. More than a half of the male respondents (60.45%) are familiar with the use of Windows NT server, and Windows 2000 (67.08%).

Chi-square test is applied for further discussion. The computed chi-square value is 16.47, which is greater than its tabulated value at 5% level of significance. Hence, the difference in gender status is statistically identified as significant with respect to respondents' knowledge of Windows 95/98. A similar result has been observed with respect to respondents' knowledge of computer software operating system such as Windows NT Server and Windows 2000.

It is concluded that female respondents mainly use the Windows 95/98 and male respondent mainly use the Windows NT Server and Windows 2000.

Table 10 Gender-wise Respondents' Knowledge of Computer Software Operating System

Gender	Windows 95/98		Windows NT Server		Windows 2000		Total
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	
Male	586 (48.59)	620 (51.41)	729 (60.45)	477 (39.55)	809 (67.08)	397 (32.92)	1206
Female	349 (58.75)	245 (41.25)	289 (48.65)	305 (51.35)	362 (60.94)	232 (39.06)	594
Total	935 (51.94)	865 (48.06)	1018 (56.56)	782 (43.44)	1171 (65.06)	629 (34.94)	1800

Chi-square Summary Result

Software / Operating System	Chi-Square Calculated Value	Degrees of Freedom	Chi-Square Table Value 5%
Windows 95/98	16.47	1	3.84
Windows NT server	22.53	1	3.84
Windows 2000	6.597	1	3.84

7. SUGGESTIONS

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

- The professional course students and non-professional course students should refer more electronic journals for getting the latest information.
- The professional and non-professional course students try to avoid printed version of books because they may be outdated.
- The University Librarian and the staff members should conduct training program/orientation programme to the professional and non-professional course students on how to search for information from the different kinds of electronic resources available online and database.
- There is s need to include more number of journals in UGC –INFONET consortium.

8. CONCLUSION

This study analyzes the information access pattern among the students of professional and non-professional courses in Annamalai University. The information access pattern has gained momentum in the context of the information age. The availability of infrastructure facilities is quite adequate in searching library and electronic information. In the overall situation students from technical education and high socio economic status can access variety of information in different sources and in different mode. The female students are accessing the information more than male students.

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Usage of E-Resources among the Members of Faculty of Arts and Science at Annamalai University: A Study

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Abstract

Information and Communication Technology (ICT) enabled products and services and the availability of online information resources have changed the way of services in academic institutions. ICT is the integration of computer and communication technology used to process, store and disseminate information. Automation and internet have changed the way in which libraries operate. Electronic resources have changed how scholars conduct their research and how researchers try to locate the required information. The main objective of this paper is to find out the purpose of using e- resources, the preferred place and format for accessing e-resources, and how often they access e-resources. The sample for the study consisted of 60 members of faculty from Arts and Science at Annamalai University. Simple percentage has been used to analyse the data and the findings are reported.

Keywords: *E-Resources, Higher Education, Use Pattern*

1. INTRODUCTION

Information touches all human activity and is communicated in a multitude of ways, which includes speech, pictures, video, text, etc. Access to information is generally recognized as contributing significantly to the efficiency of any organization [1]. Recent developments in computer, communication and networking technology have given new meaning to information retrieval systems. Today information sharing is achieved through networks [2].

According to Online Dictionary for Library and Information Science [3], electronic resource includes software applications, electronic texts, bibliographic databases, etc.

2. OBJECTIVES

The main objectives of the study are:

i. To find out the purpose of using e-resources.
ii. To ascertain the preferred place of accessing e- resources.
iii. To find out the frequency of using e-resources for locating the required information.
iv. To identify the preferred format for downloading the article.

3. METHODOLOGY

For the purpose of data collection, a questionnaire was prepared by the investigator regarding the various aspects of e-resources. 80 questionnaires were distributed to the members of faculty of Arts and Science and 60 questionnaires were returned filled.

4. DATA ANALYSIS AND INTERPRETATION

Table 1 shows that out of 60 respondents 32 (53.4%) were belong to Arts and 28 (46.6%) faculty members were belong to Science. Further, 50% of the members of faculty are Lectures, 33.3% are Readers and 10% of members of faculty are Professors.

From Table 2 it is clear that six (9.6%) Arts and nine (14.4 %) Science faculty members used e-resources for assisting research work, and two (3.2%) Arts and three (4.8%) Science faculty members used e-resources for their project purpose, two (3.2%) Arts and ten (16%) Science faculty members used e-resources to get current information. 15 (24 %) Arts and two (3.2%) Science faculty members used e- resources to prepare their class notes and seven (11.2%) Arts and four (6.4%) members of faculty belong to Science used e-resources for preparing articles.

Table 1 Designation-wise Respondents

Faculty / Designation	Faculty		Designation		
	Arts	Science	Lecturers	Reader	Professors
No. of Respondents	32	28	30	20	10
%	53.4	46.6	50.0	33.3	16.6

Table 2 Purpose of using E- Resources

Faculty / Designation		No. of Respondents	To Assist Research	%	Project Purpose	%	Current Inform-ation	%	Prepare Class Notes	%	To Prepare Articles	%
Faculty	Arts	32	6	9.6	2	3.2	2	3.2	15	24	7	11.2
	Science	28	9	14.4	3	4.8	10	16.0	2	3.2	4	6.4
Designation	Lecturer	30	3	4.8	-	-	7	11.2	15	24	5	8.0
	Reader	20	7	11.2	2	3.2	3	4.8	2	3.2	6	9.6
	Professor	10	5	8.0	3	4.8	2	3.2	-	-	-	-

Three (4.8%) Lecturers, seven (11.2%) Readers and five (8%) Professors used e-resources for assisting research work, two (3.2%) Readers and three (4.8%) Professors used e-resources for project work, 7 (11.2%) Lecturers and three (4.8%) Readers and two (3.2%) Professors used e-resources to get current information on their subject and 15 (24%) Lecturers and two (3.2 %) Readers used e-resources for preparing class notes and five (8%) Lecturers and six (9.6%) Readers used e-resources for preparing articles.

From the Table 3 it is inferred that seven (11.2%) Arts and six (9.6%) Science faculty members preferred department to access e-resources, ten (16%) Arts and 12 (19.2%) Science faculty members preferred University library as the preferred place for accessing e-resources. ten (16 %) Arts and eight (13%) Science faculty members preferred internet café as the preferred place to access e-resources. Five (8%) Arts and two (3.2%) Science faculty members preferred house to access the e-resources.

Table 3 Preferred Place to Access E- Resources

Faculty / Designation		No. of Respondents	Department	%	University library	%	Internet cafe	%	House	%
Faculty	Arts	32	7	11.2	10	16	10	16	5	8
	Science	28	6	9.6	12	19.2	8	13	2	3.2
Designation	Lecturer	30	6	9.6	9	14.4	15	24	2	3.2
	Reader	20	5	8	9	14.4	3	4.8	3	4.8
	Professor	10	2	3.2	4	6.4	---	--	2	3.2

Six (9.6%) Lecturers, five (8%) Readers and two (3.2%) Professors preferred department to access the e- resources, nine (14.4%) Lecturers and Readers and four (6.4 %) Professors preferred University library as the preferred place to access the e-resources and 15 (24 %) Lecturers and three (4.8%) Readers preferred internet café as the preferred place to access the e-resources. Each two (3.2%) Lecturers and Professors, three (4.8%) Readers preferred house for accessing e-resources.

From Table 4 it is inferred that five (8%) Arts and six (9.6%) Science faculty members access e-resources daily, 12 (19.2%) Arts and 14 (23.3%) Science faculty members access e-resources thrice a week, 10 (16%) Arts and eight (13.3%) Science faculty members access e-resources once a week and only five (8%) Arts faculty members access e-resources once in a month. seven (11.2%) Lecturers and four (6.4%) Readers access e-resources daily, 12 (19.2%) Lecturers, each seven (11.2%) Readers and Professors access e-resources thrice a week.

From Table 5 it is clear that 15 (24%) Arts and 17 (28.3%) Science faculty members preferred PDF format to download articles, six (9.6%) Arts and three (4.8%)

Table 4 Frequency of Using E- Resources

Faculty / Designation		No. of Respondents	Daily	%	Thrice a Week	%	Once in a Week	%	Once in a Month	%
Faculty	Arts	32	5	8.0	12	19.2	10	16.0	5	8.0
	Science	28	6	9.6	14	23.3	8	13.3	-	-
Designation	Lecturer	30	7	11.2	12	19.2	8	13.3	3	4.8
	Reader	20	4	6.4	7	11.2	7	11.2	2	3.2
	Professor	10	-	-	7	11.2	3	4.8	-	-

Table 5 Preferred Format for Downloading Articles

Faculty / Designation		No. of Respondents	PDF	%	HTML	%	Word Format	%	Others	%
Faculty	Arts	32	15	24	6	9.6	11	18.3	-	-
	Science	28	17	28.3	3	4.8	8	13.3	-	-
Designation	Lecturer	30	17	28.3	4	6.4	9	14.4	-	-
	Reader	20	10	16	3	4.8	7	11.2	-	-
	Professor	10	5	8	2	3.2	3	4.8	-	-

Science faculty members preferred HTML format for downloading articles, 11(18.3%) Arts and eight (13.3%) Science faculty members preferred word format for down loading articles. 17 (28.3%) Lecturers, 10 (16%) Readers and five (8%) Professors prefer PDF format for downloading articles, four (6.4 %) Lecturers, three (4.8%) Readers and two (3.2%) Professors prefer HTML format, nine (14.4%) Lecturers, seven (11.2%) Readers, and three (4.8%) Professors prefer word format for downloading articles.

5. FINDINGS

i. The members of faculty belong to Science used e-resources to get current information in their respective subjects, while Arts faculty members used for preparing class notes.
ii. Both the members of faculty preferred PDF format for downloading articles.
iii. 5 (8%) members of belong to Arts use e-resources only once in a month.
iv. Lecturers used e- resources for preparing class notes while Professors and Readers used it for assisting research and project work.
v. Lecturers preferred internet café for accessing e-resources, while Professors and Readers preferred Department and University library as a preferred place for accessing e-resources.

6. CONCLUSION

The members of faculty have started using a variety of e-resources to prepare for classes and for assisting research. E- Resources have changed the traditional practices of library and information centre in delivery of services to the end users. The ICT has now-a-days become an important technology in academic institutions as it plays an important role in meeting information needs of the members of faculty and institutions as a whole. It becomes imperative for the members of faculty to use e-resources so as to keep themselves updated with the latest information in their subjects.

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