IJISS

ISSN: 0973-8967
Vol. 4 No. 1

January - June 2010

# *Indian Journal of*
# Information Science and Services

A Refereed Research Journal on Library and Information Science

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# *Indian Journal of Information Science and Services*

**(ISSN: 0973-8967)**

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# *Indian Journal of Information Science and Services*

**Volume 4 Number 1** **January - June 2010**

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# CONTENTS

# Libraries of Engineering Institutions in Bangalore: A Case Study and Future Plan for 2020

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**Abstract**

*Engineering Institutions have become social pride in the educational sector due to ample employment opportunity in engineering field. The need to satisfy the regulatory bodies such as AICTE and affiliated Universities and to win over the tough competition among the institutions, the management of engineering institutions have invested on library facilities on par with other facilities. However, lack of expertise in library science and technology and lack of vision for future development have resulted in poor planning, execution and maintenance of library facilities.*

*In the present paper, a survey has been conducted in libraries of engineering colleges in Bangalore city and the current status of library facilities has been analysed in terms on stock, number of library staff, their education level, library usage by the students and faculty, working hours, in-campus hostels, journals subscribed, advanced technological adoption such as wi-fi,and e-learning facilities etc. Statistical tools were used to derive the indexes on each parameter considered. Further, suggestions have been made to rightly equip these learning centres to cater to the need of forthcoming 2020.*

*This study revealed the fact that a few self-financing engineering institutes have well planned and maintained the libraries whereas a few of them were not up to the mark. The government and university institutes were found to be well funded but poorly managed due to lack of motivation among the staff and faculty. The common factor among all the institutes was the lack of vision for the future. Taking into consideration of the present status and future requirement, suggestions have been made in the current study to upgrade the facility and human resource and measures for improvised usage of learning centres in the engineering institutes.*

***Keywords:*** *Engineering Institutions, Future Plans, Libraries, Library Services*

## 1. INTRODUCTION

Library is the heart of any institute; it nurtures the faculty, students and staff by providing a window to the knowledge domain. The advancements in technology have changed the shape and functioning style of libraries. Engineering institutes being technical institutes, it is normally expected that such institutes shall make use of advanced technology to upgrade the library and library services. However, the reality is far from this expectation, making these libraries also to function in conventional manner without taking any advantage from the technical advancements.

Various kinds of grants have been given to the libraries of a few engineering colleges by the management, TEQIP and World Bank service, to upgrade the library with modern facilities and services. Type of services provided by the library are reference, borrowing, internet, current awareness, online access and many more. As the libraries move into digital age, their role is constantly being challenged, the library space will need to be redesigned to accommodate computer workstations, scanners, network servers and other applications. For establishing these technologies, libraries need adequate analysis and planning.

In this view, the current study was taken up to map the current status and propose future plan for libraries of engineering institutes in Bangalore. Twenty two engineering colleges belonging to different categories such as private funded and government aided were

considered for the study. Personal meetings and discussions with library staff, students, faculty and management helped in data collection about the current status. The current status of the libraries in these colleges has been discussed in terms of statistics. Keeping in view, the future growth and requirement, certain recommendations have been made and future plan for 2020 has been laid out.

## 2. LITERATURE REVIEW

Over the last decade, the scientific programs have inspired and directed not only major technological changes but also the social and cultural changes as well. Jakovlevas- Mateckis [1] in his paper conceptual principles of the planning of modern public libraries, highlights on various sociological research to identify what kind of library is needed for the current user. He discussed the functions, library technologies and the form of information media and how these helped in the development of libraries. Further he concludes how library can be designed and developed based on the requirement by the current users.

Retail technology application in library environment is a situation in which organization has a transaction with a consumer. In the paper entitled retail technology application and their role in the modern library, the author John Stanley [2] highlights various issues on consumer data which emphasizes that changes should take place to enhance the consumer's experience. Further the author identifies the implementation strategies in three phases namely, Macro design, Learning strategies and Operationalizing. It is concluded that libraries will become community hub in future.

Varatharajan [3] in his research paper, 'Strategic planning for new technology in libraries: an outline', identifies that technology is playing a vital role for generating and disseminating information in the network environment. He stresses upon the use of appropriate technology to serve the users to meet their expectations. He proposes a strong strategic planning involving processes such as identifying the needs, setting the goals, involving everyone in the process of planning and executing, and finally maintaining the services.

The instructional program is needed for every information system as the new reader who enter the library premises, they are not aware how information is identified, selected, organized, stored and retrieved. To support this, the author Dariush Alimohammadi [4] in his paper entitled Library instruction : past lesson, and future plans highlights on the need for systematic and continuous instructional program for the students and the researchers. Further he proposes a strong plan in delivering effective instruction for the undergraduate students, the skills taught were in the areas of library tour, understanding with subject headings and classification, searching both manual and computerized catalogues, database search etc.

The cultural legacy of the modern library was examined on a basis to provide changes in the LIS field and LIS education. In the paper entitled the cultural legacy of the modern library for the future, the author Francis Miksa [5] highlights the significant features of modern library with the emerging library as how the library is viewed as a social institution, what are the target it should reach in meeting the readers satisfaction, and how to generate funds for libraries.

Further, the author discusses on LIS education and emerging libraries and identifies that the emerging library will differ from the modern library of the past in terms of electronic information provided to its readers, with reference to LIS education it should train the professionals in delivering better services in electronic format and other forms, they should also be on par with the technology. It is concluded that LIS education should help the professional in training with the technological changes in the present day requirement with the help of these training the LIS professional can better satisfy the requirement in any libraries.

Bousmaha Baiche [6] discusses about the forecasting collection growth of the libraries. Further this book also emphasizes on the building for the library. He proposes various architectural design such as the floor area for an individual study areas, heights of the shelves etc.

American Disabilities Agency [7] (ADA) compliance FY 2006 report represents various provisions for the disabilities in usages of the library. The report highlights on various aspects such as the parking, exterior signage, ramps, floors, lighting, the circulation desk and the stack area. These provisions are very essentials in any library for the disabled readers.

## 3. METHODOLOGY

The methodology involved survey using the questionnaire specially prepared to collect the relevant information on the current status on services provided by the libraries, student and staff strength and requirements, the lacunae in the services, the need for future etc. The face to face meeting with library staff, a section of students and faculty in each college visited which helped to gather additional information on the aspiration of library staff, students and faculty. The gathered information was processed using statistical tools to identify the current status and to map the future requirements.

## 4. RESULTS AND DISCUSSION

The common sections and services rendered by the engineering college libraries are:

- Reference section
- Circulation section
- Periodical section
- Online access to e-journals
- Book bank facility
- Inter- library loan facility
- Digital library section
- Technical section
- Audio-visual section
- Departmental libraries

Committee members involved for the libraries are:

- Head of Department
- Faculty members
- Student members
- Academic Director
- Principal
- Management
- Library staff

E-learning practices were through:

- EDUSAT by Visveshwariah Technological University (VTU).

In this section, the results are discussed in two phases; viz., (i) discussion on the current status and (ii) discussion on future plan and recommendations.

### 4.1 The Current Status

The staff student ratio in undergraduate (UG) and postgraduate (PG) studies is well within the referred limit ( Figure 1).

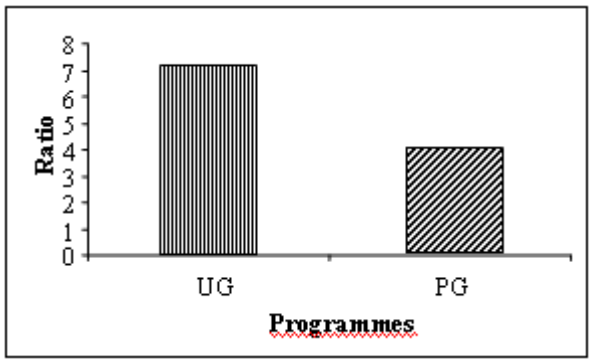


Fig. 1 The student and faculty ratio for UG and PG programmes on an average of all 22 engineering colleges

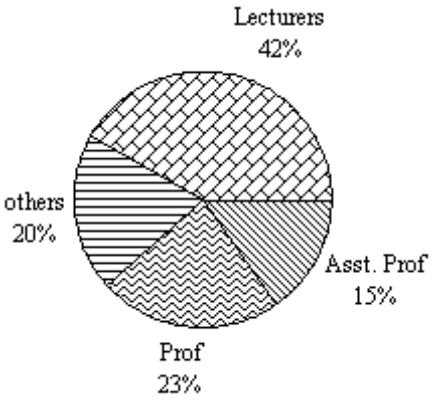


Fig. 2 The teaching faculty breakup for UG and PG programmes on an average of all 22 engineering colleges. Others refer to teaching assistants and technical staff.

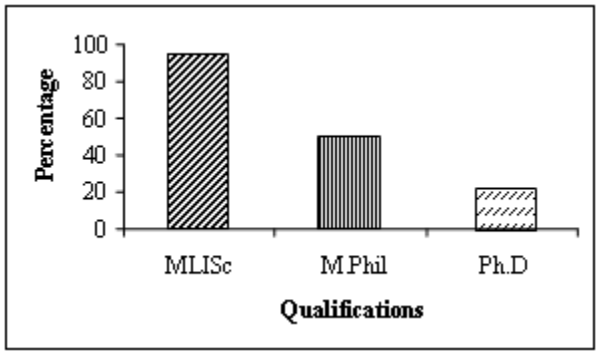


Fig. 3 The qualification profile of Chief librarian / Librarian on an average of all 22 engineering colleges

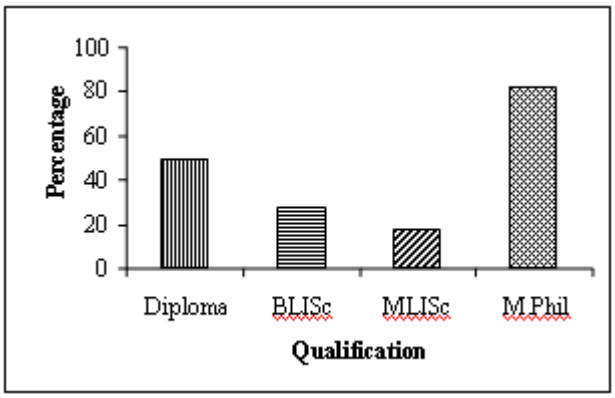


Fig. 4 The qualification profile of Deputy librarian, Assistant librarian and Library assistant on an average of all 22 engineering colleges

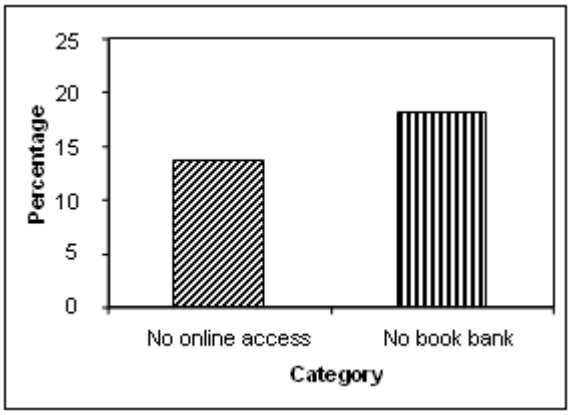


Fig. 5 The statistics of non-availability of online access of journals and book bank facility on an average of all 22 engineering colleges

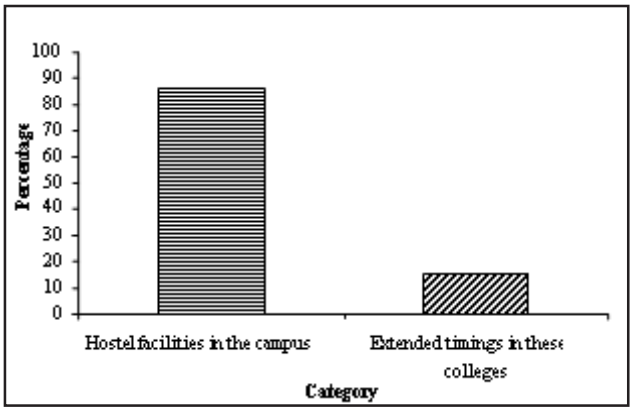


Fig. 6 The statistics of colleges having in-campus hostel facility and the extended timings of library in these colleges on an average of all 22 engineering colleges

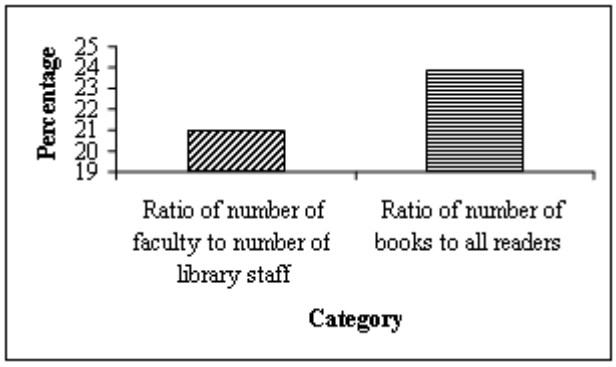


Fig. 7 Ratio of number of faculty to number of library staff and ratio of number of books to all readers in these colleges on an average of all 22 engineering colleges

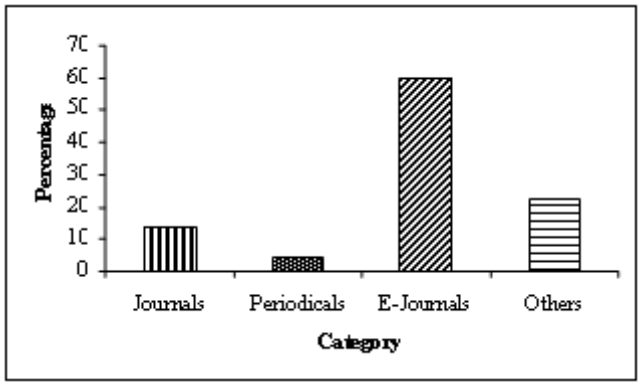


Fig. 8 The statistics of number of other resources available in the libraries on an average of all 22 engineering colleges

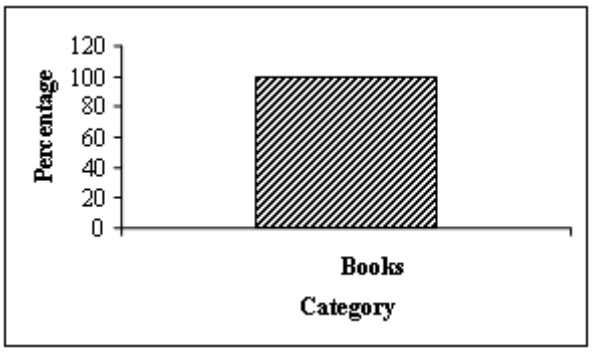


Fig. 9 The statistics of number of books available in the libraries on an average of all 22 engineering colleges

The data collected in this section is the student faculty ratio for UG and PG programmes on an average of all 22 engineering colleges. The UG ratio indicated 7.17 % and PG ratio indicated 3.99% (Figure 1), which predict that there is a constant and large intake in UG programmes and 3.99% opt for PG as many UG are observed by campus interviews.

Forty two percent of lecturer comprises in the teaching faculty breakup for UG and PG programmes. It is evident from the Figure 2 that many fresher are also given opportunity, encouraged to join the lecturer post with the minimum qualification .The others indicate 20% which refers to teaching assistant and technical staff.

The profile of Chief librarian and Librarian on an average of all 22 engineering colleges (Figure 3) indicates 95% of library staff are qualified with MLISc degree, 50% are qualified with M.Phil. degree and Ph.D with 23% the least which shows the lack of opportunities and other resources in pursuing Ph.D.

The profile of Deputy librarian and Assistant librarian on an average of all 22 engineering colleges indicates 81.8% as shown in Figure 4. The staff have M.Phil. degree which is the highest and are well qualified as per the requirements of the college and university norms.

The statistics of non-availability of online access of journals (Figure 5) which is 13.6% colleges do not have the online facility, the reason could be negligence on developing library resources, other reasons could be lack of funds and less importance given to the library growth and developing additional resources. On the other side 18.1% of colleges do not have the book bank facility, the reason could be due to a small number of collections and they would like to treat all the students alike without any category reservation.

The statistics of colleges having the in-campus hostel facility which indicates a positive sign in encouraging the students to be within the campus, where there can be a in-house reading and discussions among their own group which helps in well prepared for the next days class.15% of the colleges indicated in Figure 6 have extended timing in these colleges where there is a in-campus hostel facility, this not only motivates, helps students in improving their knowledge by reading various latest books and journals in their area of interest.

The ratio of number of faculty to the number of library staff which is around 21% as shown in Figure 7 where as the ratio of number of books to all readers is 23.8% which is higher than the ratio of faculty and library staff which clearly indicates there is sufficient number of books to all readers in the library.

With the present day technology libraries are developing themselves in providing better online services as shown in Figure 8. 60% of the colleges subscribe to e-journals on an average in all 22 engineering colleges and other resources indicate 22% which includes like CD ROM, DVD and other multimedia facilities , which says that the libraries are on par with the latest technology.

Figure 9, referes 100 % of books available in libraries of these colleges on an average of all 22 engineering colleges, the collections when compares to other resources, books are at a higher end, which shows that there is a sufficient number of books as compare to other resources.

## 5. FINDINGS

- There is a large intake of lecturers in UG programmes when compared to PG programmes.
- Lecturers with minimum experience are encouraged to join in teaching.
- It is observed that colleges lack in getting Ph.D for the post of Chief librarian and Librarian.
- As per the university norms for the post of Deputy librarian, Assistant librarian, Library assistant, the staff are well qualified to meet this requirement.
- It is observed that due to lack of funds and less importance given in development of the library there is a non-availability of online resources in the colleges.
- It is observed that in-campus hostel facility and extended library timings has encouraged a student to use the library in best possible way for their courses.
- The current status indicates sufficient number of books to readers in all the 22 engineering colleges.
- The present day technology has helped the libraries in providing better online services to the readers.
- There is a sufficient number of books availability in all the 22 engineering colleges for students and faculty.

## 6. SUGGESTION FOR FUTURE PLAN 2020

- Proposed revision of the curriculum on information science, to include training programmes and various seminars.
- To organize short term courses in emerging areas like building digital libraries, repositories, designing of web page, other library related software technology.
- To promote new arrivals, articles/journals alerts, library updates and publication.
- To conduct orientation programmes for new readers in the library.
- To promote library services with appropriate online resources and electronic databases.
- To improve display of materials so that readers can find easily and use.
- To increase collection and provide space for collection display, to make it easier to use.
- To increase seating arrangements.
- To create meeting rooms for library programmes.
- To increase the computer systems.

## 7. CONCLUSION

The advancement in technology have changed the shape and functioning style of libraries. In this paper, a survey has been conducted in libraries of engineering colleges in Bangalore city and current status of the library facilities has been analysed. The common facto identified in these colleges were lack of vision for the future. Taking into consideration of the present status and future requirements, suggestions has been made in the current study.

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# A Study on the Application of Information Communication Technology in Healthcare Profession in India

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**Abstract**

*Healthcare today involves considerable sharing of information among providers such as physicians' offices, hospitals, imaging centers, and clinical laboratories, as well as among providers and payers. A healthcare information infrastructure would provide the networks and standards to allow providers within a community to share information electronically. In addition, patients could use it to access their medical records or other healthcare information from all providers. The Primary focus of those advocating a healthcare information infrastructure is development of standards for the exchange of message so that one IT system can communicate with another. This paper deals with issues in the application of ICT in healthcare profession and the extent of application of ICT in healthcare from the point of view of medical population of five primer institution viz. All India Institute of Medical Sciences, Indra Prastha Medial Corporation and Hospital, Batra Hospital and Medical Research Centre,New Delhi, Apollo Hospitals, and Vellore Christian Medical College, Tamil Nadu.*

***Keywords:*** *Healthcare Profession, Information Communication Technology*

## 1. INTRODUCTION

Advances in information and computer technology in the last quarter of the 20th century have led to the ability to more accurately profile individual health risks, to better understand the basic physiological and pathological processes and to revolutionize diagnosis through new imaging and scanning technologies.

Such technological developments, however, demand that practitioners, managers, and policymakers are more responsible in assessing the appropriateness of new technologies [1].

The methods people use to communicate with each other have also changed significantly. Mobile telephony, electronic mail and video conferencing offer new options for sharing perspectives. Digital technologies are making visual images and the voices of people more accessible through radio, TV, video, portable disk players and the internet, which change the opportunities for people to share opinions, experience, and knowledge. This has been coupled with steps to deregulate the telecommunications and broadcast systems in many countries, which open up spaces and platforms, such as community radio, for increased communication. Reliable information and effective communication are crucial elements in healthcare practices. The use of appropriate technologies can increase the quality and the reach of both information and communication. Increased information helps people to improve their own health. At the same time, social organizations help people achieve health through healthcare systems and public health processes.

Quality healthcare relies on physicians, nurses, patients and their families, and others having the right information at the right time and using it to make the right decisions. Yet the health information needed to make these decisions changes frequently; the guidelines and clinical evidence continually evolve, as does knowledge about the condition of the patient. Information technology may provide a tool to store, integrate, and update this information base.

## 2. REVIEW ON THE SUBJECT

A review of few works could deserve due attention on the part of present study. Many researchers have pointed out the implications of ICT in healthcare profession. Pambudi, I T *et al.,* [2] explore the Patient

Record Information System (PaRIS) for primary healthcare centers in a developing country such as Indonesia. Talyarkhan, Surmaya; Grimshaw, David J and Lowe, Lucky [3], report the findings from a two-year research project, including a literature analysis and a case study. Douglas, G P; Deula, R A and Connor, S E [4], discuss the application of a computer based management information system in Malawi.

## 3. METHODS AND MATERIALS

This study aims at analyzing the application of ICTs in healthcare profession. The extent of application of ICT in health profession and medical areas can be assessed from the point of view of doctor respondents. This study primarily aims to identifying the problems in the existing level of application of ICT in healthcare profession under the exploratory research framework. In this study, 503 respondents were selected as sample representing 21% of the total doctor population in the selected institutions. The relevant data were collected from the institutions by employing questionnaire method. The collected data were classified and tabulated according to the objectives framed in the study. The general data interpretation was done with the help of percentage and average analysis.

A study of data in Table 1 indicates the institution-wise respondents views on problems in the application of ICT in healthcare profession. The problems can be assessed with the help of 12 factors. These include lack of knowledge about the environment, lack of qualified personnels, lack of institutional support, lack of adequate fund, limitations in the use of internet, low level of internet partners, privacy and confidentiality, reliability of information, network connectivity, management of computers and their program, excess and selection of information and improving patients autonomy.

**Table 1 Institution-wise Respondents' Views on Problems in Application of ICT in Health Care Profession**

| Problems | All India Institute of Medical Sciences | Apollo Hospitals | Batra Hospital and Medical Research Centre | Indraprastha Medical Corporation | Vellore, Christian Medical College | Total |
|---|---|---|---|---|---|---|
| Lack of Knowledge about the Environment | 3.52 | 3.4 | 2.25 | 3.75 | 3.79 | 3.29 |
| Lack of Qualified Personnel | 3.89 | 3.25 | 2.85 | 4.25 | 4.41 | 3.69 |
| Lack of Institutional Support | 4.10 | 3.44 | 2.97 | 3.75 | 4.49 | 3.48 |
| Lack of Adequate Fund | 4.05 | 2.77 | 2.52 | 3.49 | 3.86 | 3.16 |
| Limitations in the Use of Internet | 3.98 | 3.52 | 3.14 | 3.79 | 4.10 | 3.60 |
| Low Level of Internet Partners | 3.52 | 2.44 | 2.49 | 2.75 | 3.89 | 2.89 |
| Privacy and Confidentiality | 3.89 | 2.89 | 3.39 | 2.42 | 4.15 | 3.21 |
| Reliability of Information | 4.26 | 3.52 | 4.25 | 3.79 | 4.49 | 4.01 |
| Network Connectivity | 4.10 | 4.25 | 4.10 | 4.10 | 4.39 | 4.21 |
| Management of Computers and their Programme | 4.21 | 4.1 | 4.15 | 4.05 | 4.30 | 4.30 |
| Excess and Selection of Information | 3.55 | 2.66 | 2.79 | 2.49 | 3.87 | 2.95 |
| Improving Patients Autonomy | 3.22 | 3.86 | 4.10 | 3.75 | 4.22 | 3.98 |
| **Total** | **2.66** | **3.28** | **3.30** | **3.47** | **4.17** | **3.55** |

Out of the total chosen 12 factors, the respondents rate management of computers and their programmes as the highest level of problem consequent upon application of ICT in healthcare (mean score 4.30). The respondents rate connectivity of network as the second as it secures the mean score of 4.21. The problem of reliability of information in application of ICT in health care is rated at third order priority as it secures the mean score of 4.01. The respondents rank improving patients autonomy as the fourth order problem as it secures the mean score of 3.98. The respondents rank the lack of qualified personnel to handle ICT equipments as the fifth it secures the mean score of 3.69.

The problem of limitations in the use of the internet in the application of ICT in healthcare profession is rated at sixth order as per the perceptions of the respondents. In this perception, the respondents secured the mean score of 3.60. The respondents rate lack of institutional support as the seventh order problem as it secures the mean score of 3.48. The problem of lack of knowledge about ICT environment is rated at eighth order as the respondents secured the mean score of 3.29. The problem of privacy and confidentiality is rated at the ninth order as the respondents secured the mean score of 3.21. The respondents rank lack of adequate fund as the tenth with the mean score of 3.21. The respondents rank excess and selection of information as eleventh as it secures mean score of 2.95. The respondents rate low level of internet partners as the twelfth as it secures the mean score of 2.85.

The institution-wise analysis reveals the following facts. The respondents of Christian Medical College, Vellore, Tamilnadu, take the first position with respect to their overall perceptions on problems in the application of ICT in their healthcare profession as they secured the mean score of 4.17. The respondents of Indra Prasta Medical Corporation and Hospital get the second position with respect to their overall perceptions on problems in the application of ICT in their healthcare profession as they secured the mean score of 3.47. The Batra Hospital, New Delhi, respondents hold the third position with respect to their overall perceptions on problems in the application of ICT in healthcare profession as they secured the mean score of 3.30. The respondents of Apollo Hospital stand at the fourth position with respect to their overall perceptions on problems in the application of ICT in healthcare profession as they secured the mean score of 3.28. The respondents of All India Institute of Medical Science secure the fifth position with respect to their overall perceptions on problems in the application of ICT in healthcare profession as they secured the mean score of 2.66.

## 4. CONCLUSION

The respondents rate high level problems in the application of ICT in healthcare profession in terms of management of computers and their programme, network connectivity and reliability of information. The respondents rate moderate level problems in terms of Improving patient's autonomy, lack of qualified personnel, limitations in the use of the internet, lack of institutional support, lack of knowledge about the environment, privacy and confidentiality and lack of adequate fund. The respondents rate low level problems in terms of excess and selection of information and low level of internet partners.

The respondents of Christian Medical College, Vellore, Tamilnadu occupy the first position with respect to their realization of overall problems in the application of ICT in healthcare; respondents of Indra Prasta Medical Corporation, the second; respondents of Batra Hospital, Newdelhi, the third; respondents of Apollo Hospital, the fourth; and respondents of All India Medical Science, the last.

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# Use of Electronic Resources by the Members of Faculty in Alagappa Chettiar College of Engineering and Technology, Karaikudi, Tamil Nadu: A Survey

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**Abstracts**

*The paper evaluates the use of electronic resources among the members of faculty of Alagappa Chettiar College of Engineering and Technology (ACCET) College Library in Karaikudi, Tamil Nadu. A Survey of 100 Members of Faculty is conducted through a questionnaire. The analysis of the collected data covers the use of electronic resources and how the electronic resources are improving the academic careers of the faculty and also what are the problems that are faced in using the electronic resources.This concludes that the main intention of the use of electronic resources has been the academic interest of the users.*

***Keywords:*** *E-Resources, Members of Faculty, Utility Survey*

## 1. INTRODUCTION

Dr. RM. Alagappa Chettiar a man of ran wisdom and forethought, founded Alagappa Chettiar Educational Trust with the sole aim of developing the backward area of Karaikudi into a center for higher education and provided necessary funds for the establishment of educational institutions. The engineering college was one among the chain of institutions started by him.

Alagappa Chettiar College of Engineering and Technology started functioning from 21st July 1952 with three faculties - Civil, Mechanical, Electrical and Electronics Engineering. The foundation tablet for the main building of the college was laid by Dr. Rajendra Prasad, the then President of India on 19th February 1953. With effect from June 1966 the college has become a Tamil Nadu Government Institution under the control of Director of Technical Education. In 1969 a new faculty, Electronics and Communication Engineering was started. Further, Part Time B.E. degree courses in Civil, Mechanical and Electrical and Electronics Engineering were introduced in 1971. To keep pace with the technical advancement and to meet the requirements of industries, three new courses were started, in 1973, PG Diploma in Electro-Chemical Engineering, in 1983, M.E. in Microwave and Optical Engineering, and in 1988, Master of Computer Application (MCA). From 2001, B.E. degree course in Computer Science and Engineering is offered.

The College was started with well equipped laboratories in all the departments. The equipments were imported from U.K. and USA. Over the years the laboratories have been updated. Additional buildings have been constructed. Electrical Engineering block, Civil Engineering block, Electronics and Communication Engineering block, Library block and recently a Computer Centre at a cost of 1.6 crores have been added to the college. The college library has 45,000 volumes of books in various fields of engineering. An indoor stadium and gymnasium are available. Extensive playfields for all the major out-door games are available for both boys and girls. Separate hostel facilities are available for both boys and girls (four hostel buildings for boys and three for girls).

## 2. SCOPE AND LIMITATION

The study is confined to the members of faculty of Alagappa Chettiar College of Engineering and Technology (ACCET) regarding the use of electronic resources. Its aim is to fulfill the academic needs of the faculty members and it covers electronic resources, namely CD-ROMs, OPACs, e-books, e-journals and internet.

## 3. OBJECTIVES OF THE STUDY

i. To know the availability of different types of electronic resources in Alagappa Chettiar College of Engineering and Technology (ACCET) Library.

ii. To Study the use of different types of electronic resources by the members of faculty.
iii. To study the purpose and utilization of the electronic resources by the members of faculty.
iv. To create awareness about the web resources available for the use of members of faculty.
v. To understand and assist the end users in the problem faced during the use of web resources.
vi. To update and upgrade the level of knowledge and information about more related web resources.
vii. To collect the feedback about web resources already availed for access.

## 4. METHODOLOGY

This study attempts to examine the internet use behaviour among the members of faculty of Alagappa Chettiar College of Engineering and Technology (ACCET) in Tamil Nadu. It is primarily a fact-finding venture. The identified facts are cross tabulated with the faculty background, and occupational background of the respondents. Thus it gives an analytical orientation to the study and the design of this study is partly exploratory in nature and partly analytical in nature.

## 5. SAMPLING

A questionnaire consisting of nine questions was designed to elicit the opinion of the members of faculty. These were distributed among the members of faculty and the required data was collected which was further supplemented by informal discussions with the faculty members. The analysis and interpretation of the data is presented in the subsequent selections.

## 6. ANALYSIS AND DISCUSSION

**Table 1 Qualification-wise Distribution of Respondents**

| Age | No. of Respondents | % |
|---|---|---|
| 20-30 | 19 | 19 |
| 31-40 | 28 | 28 |
| 41-50 | 37 | 37 |
| Above 50 | 16 | 16 |
| Total | 100 | 100 |

Table 1 indicates that majority (37%) of the respondents are the age group of 41-50 and 28% of the respondents are 31-40. At the same time 19% of the

**Table 2 Sex-wise Distribution of the Members of Faculty**

| Sex | No. of Respondents | % |
|---|---|---|
| Male | 64 | 64 |
| Female | 36 | 36 |
| Total | 100 | 100 |

Table 2 reveals that 64% of male faculty members work in ACCET, whereas only 36% of the female faculty members earn their livelihood in this profession. This is a glaring example of sex-ratio imbalance of the working community.

**Table 3 Teaching Experience of the Members of Faculty**

| Experience in Year | No. of Respondents | % |
|---|---|---|
| 0-5 | 45 | 45 |
| 6-10 | 20 | 20 |
| 11-15 | 18 | 18 |
| 16-20 | 12 | 12 |
| Above 20 | 5 | 5 |
| Total | 100 | 100 |

Table 3 shows that only 5% of the members of faculty have more than 20 years of experience in teaching and at the same time 20% of the members of faculty have 5-10 years of teaching experience, followed by 45% of members of faculty who have less than 5 years of teaching experience, whereas 18% of respondents have 10-15 and 12% of members of faculty have 15-20 years of teaching experience respectively.

**Table 4 Designation-wise Distribution of the Members of Faculty**

| Designation | No. of Respondents | % |
|---|---|---|
| Lecturer | 45 | 45 |
| Senior Lecturer | 25 | 25 |
| Asst.Professor | 18 | 18 |
| Professor | 12 | 12 |
| Total | 100 | 100 |

The designation-wise distribution of respondents is shown in Table 4. 45% of the respondents are Lectures, followed by 25% of the respondents who are Senior Lecturers, 18% are Assistant Professors and only 12% are Professors working in this college.

**Table 5 Frequency of Using Electronic Resources by the Members of Faculty**

| Time Spent | Frequency | % |
|---|---|---|
| 1 Hour | 35 | 35 |
| 2 Hours | 50 | 50 |
| More than 2 Hours | 15 | 15 |
| Total | 100 | 100 |

The following Table 5 shows that out of 100 respondents 35% of the members of faculty use electronic resources 'One hour', followed by 50% who are using 'two hour', whereas, 15% of members of faculty use 'more than two hour' of electronic resources in the library.

**Table 6 Purpose of Using Electronic Resources**

| Purposes | No. of Respondents | % |
|---|---|---|
| Research Work | 20 | 20 |
| Teaching Purpose | 45 | 45 |
| For Communication | 8 | 8 |
| Finding for Relevance Information my Specialization | 12 | 12 |
| Up dating Subject Knowledge and GK | 15 | 15 |
| Total | 100 | 100 |

Table 6 reveals that majority (45%) of the members of faculty use electronic resources for teaching purposes followed by 20% members who are using for their Research work whereas 15% are using to update subject knowledge and general knowledge of information and 8% of members of faculty are using for communication purposes.

**Table 7 Use of Electronic Resources by Members of Faculty**

| Type of Electronic Resources | No. of Respondents | % |
|---|---|---|
| CD-ROMs | 20 | 20 |
| OPAC | 4 | 4 |
| E-Journals | 15 | 15 |
| E-Books | 10 | 10 |
| Online Database | 6 | 6 |
| Internet | 40 | 40 |
| Any Other | 5 | 5 |
| Total | 100 | 100 |

Table 7 shows frequency of use of electronic resources by the members of faculty. Majority (40%) of the members of faculty are using internet, followed by 20% who are using CD-ROMS and 15% who are using e-journals. However 4% of the respondents are using the OPAC system.

**Table 8 Problems Faced While Using Electronic Resources**

| Problems | No. of Respondents | % |
|---|---|---|
| Lack of Hardware | 10 | 10 |
| Lack of Software | 14 | 14 |
| Lack of Training | 20 | 20 |
| Lack of Information on Electronic Resources | 18 | 18 |
| Lack of Opearating Funds | 8 | 8 |
| Lack of Timing | 30 | 30 |
| Total | 100 | 100 |

Table 8 shows that 31 (30%) respondents have faced problems of lack of time, followed by 20% of members of faculty who indicate lack of training is the main problem while using electronic resources.

**Table 9 Success Rate of Finding Required Information in Electronic Resources**

| Success Rate | No. of Respondents | % |
|---|---|---|
| < 25% | 10 | 10 |
| 25-50 % | 20 | 20 |
| 51-75 % | 26 | 26 |
| 76-99 % | 44 | 44 |
| 100 % | - | - |
| Total | 100 | 100 |

The respondents were requested to indicate the success rate in finding the required information in electronic resources. Table 9 shows that 44 (44%) of respondents succeeded in the range of 76-99, followed by 26 (26%) respondents who succeeded in the range of 51-75 and least percentage (10%) of faculties succeeded in the range of less than 25%.

## 7. FINDINGS OF THE STUDY

i. Only 5% of the members of faculty have more than 20 years of experience in teaching.
ii. Majority (40%) of the respondents use internet and 20 (20%) use CD-ROMs.
iii. Majority of (30%) respondents have faced the problem of lack of time, and 20 (20%) faculty members indicate lack of training is the main problem while using electronic resources.
iv. Regarding the success rate of finding the required information in electronic resources, 44 (44%) members of faculty rated that they have succeeded in the range of 76-99.

## 8. SUGGESTIONS

i. The authority must conduct training programmers for faculty members regarding how to use the electronic resources effectively.
ii. Awareness should be created to use e-journals and e-books to obtain current information.
iii. More computer/terminals should be installed in the library for the benefit of the members of faculty.
iv. More funds should be given to acquire the electronic resources.

## 9. CONCLUSION

The electronic resources play a vital role in all the fields of human life. These have rapidly changed the way of seeking and disseminating information. It is clear from the study that the members of faculty of Alagappa Chettiar College of Engineering and Technology (ACCET) have used electronic resources in development their academic careers. The speed of availability and the ease of accessibility of information make the faculty members use electronic resources more frequently. This study helps the librarian to know the importance of electronic resources in the academic environment.

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# Gender in Information Communication Technology from Selected Conference Proceedings: A Bibliometric Study

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**Abstract**

*The study has been finding out the growth and characteristics of Gender in Information Communication Technology from the conference proceedings of Indian based Conference on Women in Information Technology (WIT) was organized by Annamalai University, India, during the period from 2002 to 2005 are collected for this study. This article analyzed to study year wise publication, authorship patterns, author's productivity, geographical distribution, major thematic distribution and state-wise distribution, etc.*

***Keywords:*** *Activity Index, Authorship Pattern, Bibliometrics Study, Data Analysis, Degrees of Collaboration, Gender Study, Gender in ICT*

## 1. INTRODUCTION

This study aims to assess the pattern and structural change of the contributions of Gender scientists around the world in the field of "Gender in ICT". It attempts to map the dynamics of themes that have been represented in the conference proceedings held at India on the subject 'Gender in ICT'. In this, bibliometric analysis was performed for the publication on conference on Women in Information Technology (WIT) was organized by Annamalai University, Tamil Nadu.

This thematic maps reveals to identify the thematic structure of the database of the conference proceedings, the sources and origin of the research proceedings, and the research status of the individual countries on the core theme of the discipline 'Gender and ICT'. In addition, studies of this type aim to assess the most focused area of research specialties (themes/issues) and the authorship pattern in the conference proceedings on 'Gender and ICT'.

## 2. AIMS

i. To outline the broader view of the selected conference proceedings on 'Gender and ICT'.
ii. To study the various thematic issues discussed in the conference proceedings.
iii. To assess the geographical distribution and identify the cross country variations of papers presented in the selected conference proceedings.
iv. To study the authorship pattern and evaluate the degree of collaborative trend of the authors of papers presented in the conference proceedings.

## 3. METHODOLOGY

The present study is an attempt to evaluate the research output of scientists presented in the selected conference proceedings (WIT) organized in Annamalai University, India. The research productivity is measured in terms of national as well as individual levels. The relational indicators such as the author, institution and the geographic regions are used to identify the links and interactions between the actors of national and international systems of scientific productivity. Such interactions not only constitute the flow of knowledge but also provide a picture of scientific activity based on the content of publications. These indicators help monitor changes in scientific productivity and identify emerging research topics and the relevant contributions. In addition, authorship pattern, degrees of collaboration and simple percentages have been computed to compare the relative information. Moreover, bar diagrams, line diagrams and the graphs have been drawn in appropriate situations to present the information on the research contributions in the selected conference proceedings (WIT).

## 4. DATA ANALYSIS

**Table 1 Authorship Pattern and Degrees of Collaboration**

| Year | Single Author | Multiple Authors | Total | % | Cumulative % | Degree of Collaborations C |
|---|---|---|---|---|---|---|
| 2002 | 74 (21.02) | 5 (2.67) | 79 | 14.66 | 14.66 | 0.063 |
| 2003 | 168 (47.73) | 88 (47.06) | 256 | 47.50 | 47.50 | 0.344 |
| 2004 | 38 (10.80) | 18 (9.63) | 56 | 10.39 | 10.39 | 0.321 |
| 2005 | 72 (20.45) | 76 (48.41) | 148 | 27.46 | 27.46 | 0.514 |
| Total | 352 (65.31) | 187 (34.69) | 539 | 100 | - | 0.347 |

From the above Table 1, we could know the growth of Gender in ICT research output which has increased especially in 2003 (24.6 %) has increased among the other four (2002 to 2005) years. By authorship pattern, single author publication is highest (65.31%) and collaborative author's participation is just 34.69 %. A study of data indicates the degree of collaboration in research of Gender in ICT. Based on this study, the result of the degree of collaboration C = 0.35 i.e, 35% of collaborative author's article were published during the study period.

**Table 2 Thematic Distribution of Publications in WIT Conference**

| Year | Themes | No. of Publications |
|---|---|---|
| 2002 | Current Status of Women in Information Technology Education in India | 79 (14.65) |
| 2003 | Women in the Digital Era: Opportunities and Challenges | 256 (47.50) |
| 2004 | Women in E-Governance | 56 (10.39) |
| 2005 | Gender Issues in E-Society | 148 (27.46) |
| | Total | 539 (100) |

From the above Table 2, the focused themes were on IT education followed by opportunities and challenges, e-governance and e-society. In the four conferences, a total of 539 papers were published by the women authors, among which 47.5% of the papers were on the theme "Women in Digital Era: Opportunities and Challenges" and more than one-fourth (27.46%) of the papers were on the theme "Gender Issues in e-society".

Even though WIT was the international conference, the majority of the papers were produced by the Indian authors and the foreigners contribution was very less when compared to Indians. The distribution of papers based on the country-wise origin of the authorship was given in Table 3.

Out of 79 papers published in the year 2002, 75 papers were produced by the Indian authors, two were from UK and one paper each from Australia and Ghana. In 2003 conference, out of 256 papers, 251 were produced by the Indian author and among the remaining five, two from Australia and USA. In 2004 conference except one paper by the author from Ghana, all the remaining 55 papers were produced by the Indian women authors. In the fourth conference held in 2005, three papers were presented by the foreign authors i.e two from UAE and one from Kenya; and the remaining 145 papers were produced by the Indian authors. Thus, out of 539 papers produced by the women authors of WIT conferences, 526 papers (97.58%) of them were produced by the Indian authors and only 13 papers were from other countries.

In all the four WIT conferences, a total of 526 papers were presented by the Indian authors. As the conference was held in Tamil Nadu, the majority of the authors were from Tamil Nadu region. In 2002 WIT conference, in addition to 66 papers from Tamil Nadu state, two papers each from Andhra Pradesh, Madhya Pradesh, New Delhi and Pondichery as well as another one paper from Kerala

**Table 3 Geographical Distribution of Publications in WIT Conference**

| Sl. No. | Country | No. of Publications in the Year | | | | Total |
|---|---|---|---|---|---|---|
| | | 2002 | 2003 | 2004 | 2005 | |
| 1 | India | 75 (94.94) | 251 (98.05) | 55 (98.21) | 145 (97.97) | 526 (97.58) |
| 2 | Australia | 1 (1.27) | 2 (0.78) | - | - | 3 (0.55) |
| 3 | Austria | - | 1 (0.39) | - | - | 1 (0.19) |
| 4 | Germany | - | 1 (0.39) | - | - | 1 (0.19) |
| 5 | USA | - | 1 (0.39) | - | - | 1 (0.19) |
| 6 | UK | 2 (2.53) | - | - | - | 2 (0.37) |
| 7 | Ghana | 1 (1.27) | - | 1 (1.79) | - | 2 (0.37) |
| 8 | Kenya | - | - | - | 1 (0.68) | 1 (0.19) |
| 9 | UAE | - | - | - | 2 (1.35) | 2 (0.37) |
| Total | | 79 | 256 | 56 | 148 | 539 |

**Table 4 State-wise Distribution of Publications from Indian Authors in WIT Conference**

| Sl. No. | States | No. of Publications in the Year | | | | Total |
|---|---|---|---|---|---|---|
| | | 2002 | 2003 | 2004 | 2005 | |
| 1 | Andhra Pradesh | 2 ( 2.67) | 9 ( 3.59) | - | 1 (0.69) | 12 (2.28) |
| 2 | Gujarat | - | 4 (1.59) | 4 (7.27) | 2 (1.38) | 10 (1.90) |
| 3 | Karnataka | - | 13 (5.18) | - | 3 (2.07) | 16 (3.04) |
| 4 | Kerala | 1 ( 1.33) | 7 (2.79) | - | 1 (0.69) | 9 (1.71) |
| 5 | Madhya Pradesh | 2 ( 2.67 ) | 5 (1.99) | - | - | 7 (1.35) |
| 6 | Maharashtra | - | 5 (1.99) | 1 (1.82) | 3 (2.07) | 9 (1.71) |
| 7 | New Delhi | 2 ( 2.67) | 6 (2.39) | 3 (5.45) | 7 ( 4.83) | 18 (3.42) |
| 8 | Orissa | - | 1 (0.40) | - | - | 1 (0.19) |
| 9 | Pondicherry | 2 ( 2.67) | 3 (1.20) | - | - | 5 (0.95) |
| 10 | Tamil Nadu | 66 ( 88) | 197 | 47 (85.45) | 126 ( 86.90 ) | 436 (82.89) |
| 11 | West Bengal | - | - | - | 2 (1.38) | 2 (0.38) |
| 12 | Uttar Pradesh | - | 1 (0.40) | - | - | 1(0.19) |
| Total | | 75 | 251 | 55 | 145 | 526(100) |

were presented. In WIT 2003 conference which concentrating on the theme "Women in Digital Era: Opportunities and Challenges" 251 papers were received from India, among which 251 papers were presented by the women authors from Tamil Nadu.

Next to this 13 papers from Karnataka, nine papers from Andhra Pradesh, seven from Kerala, six from New Delhi, five each from Madhya Pradesh and Maharastra, four from Gujarat, three from Pondichery, and one each from Orissa and Uttar Pradesh were presented in 2003 WIT conference. Thus out of 251 papers presented by the Indian authors, 197 were from TamilNadu and the remaining 54 papers were presented by the authors from other parts of the country.

In 2004 WIT conference, 55 papers were presented on the theme "Women in e- Governance"; among which 47 papers were from Tamil Nadu, four from Gujarat, three from New Delhi and one from Maharastra. Also, on the theme "Gender Issues in e-society" discussed in 2005 WIT conference. Out of 126 papers presented by Indian authors, 106 were from Tamil Nadu and the remaining 19 were from other seven states. Among the 19 papers, seven papers were presented by the author from New Delhi, three papers each from Karnataka and Maharastra, two papers each from Gujarat and West Bengal, and one paper each from Andhra Pradesh and Kerala.

On the whole, nearly 83% of the Indian authors i.e. 436 out of 526, presented papers in WIT conference

were from Tamil Nadu. Next to this, New Delhi stands second position with 18 papers and the contribution were made in all the four WIT conferences. From Madhya Pradesh and Pondichery, the contributions were made only in the first two WIT conferences. The women authors from Andhra Pradesh and Kerala were contributed in 2002, 2003 and 2005 conferences. Gujarat and Maharastra lend their contribution in the last three WIT conferences and 16 papers from Karnataka were presented in 2003 and 2005 conferences. Lastly, Orissa and Uttar Pradesh contributed each one paper in 2003 conference and two papers were presented by the authors from West Bengal in 2005 conference.

Moreover, Next to Tamil Nadu, the larger number of papers from New Delhi (18), followed by the nearby states Karnataka (16), Andhra Pradesh (12). Also, a considerable number of papers were presented from the developed states viz., Gujarat (10), Maharastra (9), Kerala (9) and Pondichery (5). The contribution from West Bengal, Orissa and Uttar Pradesh were very negligible, and not even a single paper could be received in WIT conference from backward states in the North and North East. In addition to the states backwardness, distance is also one of the main reasons for this unequal distribution in the contribution of paper in WIT conferences.

## 5. CONCLUSION AND SUGGESTIONS

This study has looked at patterns of authorship in articles published in "Conference on Women in Information Technology (WIT) was organized by Annamalai University, India". Single authors were responsible for the highest articles compared to collaborate authorship. By analysis of the thematic distribution of year-wise publication during 2003 has the highest publication. By geographical distribution of publication, it is found that the Indian continent is the highest output in the field of Gender in ICT. Tamil Nadu and New Delhi are the highest publication among the twelve states. The majority of the papers were produced by the Indian authors and the foreigners contribution was very less when compared to Indians. Indian scientists may be encouraged to carry out more research activities on those areas of Gender in ICT.

Eventhough WIT was the international conference, the majority of the papers were produced by the Indian authors and the foreigners, contribution was very less when compared to Indians.

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# Use and Awareness of the Internet Facilities by Members of Faculty and Research Scholars in Gulbarga University Library, Karnataka: A Study

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**Abstract**

*This study is designed to investigate the use of the internet resources by the faculty and research scholars including purposes for use, its impact on teaching and research, internet resources and services that they use, and the problems faced while using the internet.*

*A questionnaire were used to collect data from the members of faculty and research scholars in Gulbarga University, Gulbarga. A total of 305 questionnaires were distributed to the users, 214 valid questionnaires were collected from the members of faculty (67) and research scholars (147).*

*A majority of the users have been using the internet for two to four years. They use the internet frequently for, and give importance to, e-mail, search engines, and WWW resources mainly for communication, research and education. Slow speed, downloading problem and lack of training are the major problems. Most of them are interested in improving the internet use skills through formal training.*

*Gulbarga University needs to improve its information and communication technology, including e-mail accessing, and to provide orientation and training programme in the use of internet resources and facilities in library.*

***Keywords:*** *Members of Faculty, Internet, Research Scholar, University Library*

## 1. INTRODUCTION

The development of communication technology is playing a vital role in the development of society. In earlier days, verbal and graphic methods were use for communication. Now-a-days these primitive methods have given way to electronic pulses. Using computer telephone links and microwave radio transmission, a vast amount of data is being transmitting within a few seconds. Speedy access to information is now being possible through computer networks. Internet-Networks of Networks consists of a large numbers of the interconnected computers all over the world and offers access to unimaginably large amounts of information, data and interpreted materials in a timely, cost-effectiveness and comfortable manner. Being a very powerful and dynamic tool for communication, it is the largest single sources of information at the global level Internet is now developing as the major way of communication media in the present society. It is a challenge and means for Library and Information professionals for providing information services. The internet has many resources that can be harnessed by academics for good scholarly work. These include discussion groups, Usenet news groups, Telnet; file transfer protocol (FTP), e-mail, directories, search engines, information gateways and the World Wide Web (WWW) etc. Use of the internet is pervasive, evolving rapidly and indicative of major changes in the fields of research, teaching and learning. Sources of information and other opportunities available via the internet are increasing exponentially. This comes with a steady increase in depending on the internet for various purposes. Especially in the academic community (i.e. teachers and students), there is a growing dependence on the internet for various educational purposes. Use of internet by research scholars is an important area of study in today's information environment. The internet has now-a-days become an important component in academic institutions as it plays a pivotal role in meeting information and

communication needs of institutions. It makes it possible to access a wide range of information, such as up-to-date research reports, from anywhere in the world. It also enables scholars and academic institutions to disseminate information to a wider audience around the globe through having web sites and a way to search them and organize the output.

## 2. ICT DEVELOPMENTS AT THE GULBARGA UNIVERSITY

Gulbarga University established in 1980. Within a short span, the university has achieved marvelous academic and research excellence with 39 Post-graduate departments and P.G. Centres at Sandur, Bellary, Raichur and Bidar. The University Library makes sincere efforts to assure an environment for intellectual inquiry by providing user focused services. The library has over 2,20,000 books, subscribes 435 scientific journals, Sixteen CD-ROM databases (Current + Archival), 5400 dissertation/theses and technical reports, conference papers, and rare books. The University has entered into an agreement with the University Grants Commission (UGC) of India and the Information and Library Network Network (INFLIBNET) to participate in the countrywide Infonet e-journal consortium. The University computer network has a state-of-the-art fiber optic network and wireless network link to the internet providing 2 Mbps of additional bandwidth for browsing of electronic journals and databases in sciences, social sciences and humanities. The Virtual Learning Resource Centre and Digital Library developed with the financial assistance of Infosys Foundation, Bangalore. The library is providing Internet Access Facility (IAF) service to all the bonafide library members with 100 computers (donated by Infosys Foundation, Bangalore), free of charge for browsing e-resources. It is very important that use and awareness of internet resources by the faculty members and research scholars is investigated so that the findings of such a study may be taken into consideration in the university plans for effective and efficient use of internet for research work and simultaneous improvement of e-resources of its libraries.

## 3. OBJECTIVES

The purpose of the present study is to explore the use and awareness of the internet facilities and its resources by the members of faculty and research scholars of Gulbarga University, Gulbarga, Karnataka.

The following objectives are framed for the study:

i. To identify the awareness of the internet and its resources;
ii. To study the use of the internet by the members of faculty and research scholars;
iii. To find out the extent of use of the internet;
iv. To identify the different purposes that the internet is used for by faculties and researchers;
v. To find out the problems faced by the faculties and researchers;
vi. To find out the satisfaction level with the internet based resources and facilities;
vii. To suggest some suggestions to improve the internet based resources in the library.

## 4. REVIEW OF RELATED LITERATURE

A review of literature reveals that there are a large number of literatures available on the use and awareness of the internet. The present study is an attempt to clearly establish and exhibit the present status of internet resources, services, use and awareness in the Gulbarga University, Gulbarga.

Maheswarappa and Emmanuel conducted an exploratory study at Gulbarga city, which shows that all the users have computer knowledge. Mahajan conducted a study on internet use by researchers in Punjab University, Chandigrah, which analyzed how the convergence of information and communication technologies, as embodied by the internet, has transformed the present day society into a knowledge society. Chandran carry out a study on the use of internet resources and services in S.V. University, Tirupati, indicating that more than 56% of respondents used the internet to access information. They found that the majority of respondents used the internet, web and e-mail sources. All of the respondents used internet to send e-mail and 82% of web browsing, more than 60% of the respondents used internet for primary information Kaur. Bavakutty and Salih conducted survey at Calicut University, which showed that students, research scholars and faculty members used the internet on education and research purpose. Madhusudhan conduct a survey on internet use by research scholars at Delhi

University, survey revealed that most of the respondents used search engines more than subject gateways or web directories in order to locate information on the internet. Negative attitudes as well as conservatism act as barriers to effective internet use.

Internationally, studies on the internet facilities have also done. Asemi conducted a study in University of Isfahan, Iran. 100% of the users frequently used the internet. It was discovered that the researchers of the university were getting the data through internet. A number of academic user studies have also reported that the e-mail facility is the most used internet resource by staff and students. Marklein has indicated that the use of e-mail by college students in the United States is so common. Some studies have revealed that academic staffs are using the internet in various ways to enhance teaching and learning. For example, in a study entitled 'Using the internet as a teaching resource', Jefferies and Hussein reported that teaching faculty construct web pages to help structure students' data gathering and to provide access to a variety of other resources. Students, on the other hand, use e-mail to communicate with their peers and with their tutors. The researchers emphasized the fact that students preferred to send e-mail to their tutors instead of the traditional face-to-face meetings.

## 5. RESEARCH METHODOLOGY AND STUDY POPULATION

Questionnaire method is the popular method of collecting information in Social Sciences. Therefore, the present survey conducted through questionnaire method. The present survey covers research scholars and faculty members. There are 39 postgraduate departments in the campus of the university, out of which questionnaires were distributed to the respondents of science and technology, commerce and management, law and social science and only arts faculty was excluded.

A total of 305 questionnaires were distributed to the users, 214 valid questionnaires were collected from the members of faculty (67) and research scholars (147). The response rate was 70.16%.

## 6. RESULTS AND DISCUSSION

### 6.1 Awareness of the Internet

The results in table show that all have knowledge of internet.

**Table 1 Awareness of the Internet**

| Academic Status | Frequency | Yes (%) | No |
|---|---|---|---|
| Faculty Member | 67 | 67 | - |
| Research Scholar | 147 | 147 | - |
| Average | 100 | 100 | - |

### 6.2 Experience of the Internet Usage

When studying the experience of the internet use, it was observed that the majority of respondents (39.71%) had 2-4 years experience of accessing internet, followed by 26.93% with above 4 years experience in using internet. 20.09% of the respondents have used the internet 1-2 years, while only 13.06% had used the internet for below one year. It is interesting to note that faculty members had a longer experience of using the internet than research scholars and 19.72% of the research scholars using the internet below one year.

**Table 2 Experience of the Internet Usage**

| Academic Status | Faculty Member | Research Scholar | Average |
|---|---|---|---|
| Below 1 Year | - | 29 | 13.06 |
| 1-2 Years | 9 | 34 | 20.09 |
| 2-4 Years | 31 | 54 | 39.71 |
| Above 4 Years | 27 | 30 | 26.63 |

### 6.3 Frequency of the Usage of the Internet

In order to assess the frequency of using internet services, the respondents were asked to indicate any one out of six categories of using time insulate. 33.6% of the respondents used the internet 2-3 times in a week, 29.4% respondents used the internet daily and 7% fortnightly. Only 2.3% used the internet monthly.

**Table 3 Frequency of the Internet Use**

| Academic Status | Faculty Member | Research Scholar | Average |
|---|---|---|---|
| Daily | 18 | 41 | 27.6 |
| 2-3 Times in a week | 13 | 59 | 33.6 |
| Once in a Week | 33 | 30 | 29.4 |
| Fortnightly | 3 | 12 | 7 |
| Monthly | - | 5 | 2.3 |

### 6.4 Locations for Accessing the the Internet

The respondents of all the departments covered in the study had access to the internet through the central library and departments. It is important to point out that all departments provided internet access to faculty members and few departments provided internet access to research scholars. The majority of the respondents reported that they accessed the internet from central library, about 37.24% accessed at the departments, while 26.63% accessed at central computer lab. Another 18.22% also used at home. Departments and home were the most popular frequently used locations for the faculty members as shown in Table 4, whereas research scholars chose go to central library and internet cafes.

**Table 4 Location of the Internet Use**

| Academic Status | Faculty Member | Research Scholar | Average |
|---|---|---|---|
| Internet Café | 19 | 57 | 35.51 |
| Central Computer Lab | 16 | 41 | 26.63 |
| Central Library | 27 | 109 | 63.55 |
| Department | 43 | 26 | 37.24 |
| At Home | 32 | 7 | 18.22 |

### 6.5 Purpose for the Internet Use

For using internet, 45.33% of respondents say that they using the internet for research, 43% for education purpose, and 33.18% for communicating with colleagues and editors of scholarly journals, while 15.42% of the respondents admitted that they also used the internet for entertainment purpose.

**Table 5 Purpose for the Internet Use**

| Academic Status | Faculty Member | Research Scholar | Average |
|---|---|---|---|
| Research | 21 | 76 | 45.33 |
| Education | 39 | 53 | 43 |
| Entertainment | - | 33 | 15.42 |
| Communication | 26 | 45 | 33.18 |

### 6.6 Use of the Internet Resources

Table 6 showes that 60.74% of the respondents used the internet for e-journals, 27.57% for conferencing proceedings, 23.36% for e-books, 22.90% for reference document, 19.16% for electronic thesis and dissertations, 9.34% for technical reports and 6.07% for databases.

**Table 6 Use of the Internet Resources**

| Academic Status | Faculty Member | Research Scholar | Average |
|---|---|---|---|
| E-Journals | 43 | 87 | 60.74 |
| Database | 4 | 9 | 6.07 |
| Technical Reports | 7 | 13 | 9.34 |
| ETDs | 17 | 24 | 19.16 |
| E-Books | 21 | 29 | 23.36 |
| Reference | 14 | 35 | 22.90 |
| Document | - | - | - |
| Conference | 19 | 40 | 27.57 |
| Proceedings | - | - | - |

### 6.7 Ways to Browse Information from the Internet

Table 7 explains that the majority of respondents (63.08%) browsed the internet by using search engines. 33.64% of the respondents type the web addressed directly, 18.22% used internet gateways and 8.41% indicated that they used subscription databases (USD) for accessing the required information on the internet.

**Table 7 Ways to Browse Information from the Internet**

| Academic Status | Faculty Member | Research Scholar | Average |
|---|---|---|---|
| Website | 23 | 49 | 33.64 |
| USD | 11 | 7 | 8.41 |
| Internet Gateways | 16 | 23 | 18.22 |
| Search Engines | 42 | 93 | 63.08 |

### 6.8 Use of Search Engines

Users regarded internet search engines as the main tool for locating desired information. Google was the most preferred search engine with 80.37% response, followed by AltaVista (33.18%), rediff (24.76%), yahoo and MSN are 22.43%. Google is dominating in providing information on the internet.

**Table 8 Use of Search Engines**

| Academic Status | Faculty Member | Research Scholar | Average |
|---|---|---|---|
| Google | 48 | 124 | 80.37 |
| Alta Vista | 27 | 44 | 33.18 |
| Yahoo | 13 | 35 | 22.43 |
| Rediff | 19 | 34 | 24.76 |
| MSN | 21 | 27 | 22.43 |
| Khoj | - | - | - |
| Others | - | - | - |

### 6.9 Use of the Internet Services

Table 9 indicates that the 75.70% respondents has chosen the e-mail, followed by search engine (53.27%), www (48%) discussion groups and chatting (36.91), file transfer protocols (15.42%) and FAQs (frequently Asked Questions) with 14.01%.

**Table 9 Use of the Internet Services**

| Academic Status | Faculty Member | Research Scholar | Average |
|---|---|---|---|
| DG | 33 | 46 | 36.91 |
| WWW | 36 | 68 | 48.60 |
| SE | 41 | 73 | 53.27 |
| Chatting | 17 | 62 | 36.91 |
| FTP | 9 | 24 | 15.42 |
| FAQs | 11 | 19 | 14.01 |
| E-mail | 49 | 113 | 75.70 |

### 6.10 Difficulties of Accessing the Internet

Table 10 shows that more than 58% of the respondents faced the downloading problem, 51.87% of the respondents found it difficult to get the relevant information on the internet and 31.31% of the respondents faced the problem of slow speed internet access.

**Table 10 Difficulties of Accessing the Internet**

| Academic Status | Faculty Member | Research Scholar | Average |
|---|---|---|---|
| SS | 28 | 39 | 31.31 |
| FRI | 34 | 69 | 48.13 |
| LOT | 21 | 74 | 44.39 |
| IO | 18 | 62 | 37.38 |
| DP | 24 | 102 | 58.87 |
| II | 38 | 73 | 51.87 |

### 6.11 Satisfaction with the Internet Facilities

Table 13 shows that 44.86% of the respondents felt fully satisfied with the internet facilities, 28.50% partially satisfied, 14.48% least satisfied and 14.95% of the respondents did not express any opinion regarding the facilities.

**Table 11 Satisfaction with the Internet Facilities**

| Academic Status | Faculty Member | Research Scholar | Average |
|---|---|---|---|
| Fully | 37 | 59 | 44.86 |
| Partially | 20 | 41 | 28.50 |
| Least Satisfied | 13 | 18 | 14.48 |
| No Comments | 3 | 29 | 14.95 |

## 7. SUMMARY OF FINDINGS

i. Faculty members had a longer experience using the internet than the research scholars. Above 40.30% of the faculty, members had used the internet above than four years, whereas only 20.40% research scholars had the same experience.

ii. Free internet access provided by the university under study. A majority of the respondents i.e. 33.6% use the internet 2-3 times in a week for academic purposes. It is a very good sign as far as internet use is concerned.

iii. The virtual learning resource centre and digital library (Central Library) was the most comfortable place for accessing the internet (63.55%). Tough faculty members are access internet in the department itself.

iv. More than 45% of the respondents used the internet for research purpose followed by education with 43%.

v. The majority of the respondents used the internet for accessing e-journals (60.74%), for reading conference proceedings 27.57%, for consulting e-books 23.36%.
vi. The use of technical reports and electronic theses and dissertations is limited due to lack of awareness by the research scholars and students.
vii. The majority of the respondents, with 63.08% response, browsed the required information from the internet by using internet search engines.
viii. All the respondents browse information from the internet using search engines, Google (80.37%) is the most favorite search engine. AltaVista (33.18%) comes next to it.
ix. Awareness of the internet services, e-mail was the most popular internet services with 75.70% response. Next in priority came the search engine (53.27%) followed by WWW services.
x. Downloading problem, irrelevant information, finding relevant information and information overload are the major problems faced by the faculty members and research scholars.

## 8. SUGGESTIONS AND RECOMMENDATIONS

i. There is a need to increase awareness about the different techniques such as OPAC, Information Gateways, Groups, Discussion Forums, etc.
ii. There is need to develop knowledge about use of electronic theses and dissertations, technical reports, patents, etc available online.
iii. Compared to the total students, research scholars and faculty members, there are less number users using the internet technology. Further, the users are also do not have adequate knowledge about the different techniques such as Databases, ETDs, Gateways, Discussion Forums, e-learning, Technical Reports, Government publications, OPAC, etc available online. Hence, it is recommended to educate the users of the Gulbarga University Library.

## 9. CONCLUSION

Internet is a major source of communication and dissemination of information in the twenty-first century. The libraries in India are rapidly transforming into Digital Libraries and Virtual Learning Resource Centre. It is emphasized that Gulbarga University maintained the Virtual Learning Resource Centre with all necessary technological applications, for the effective use of the information in higher education and research. Of course, a major proportion of the user populations in the University are aware about the internet, but they do not know all the techniques and applications of the internet. Further, a few users of the university do not have knowledge about the internet and related applications. For this purpose, there is need for effective user education, to develop the awareness and knowledge of the users. The more efforts of the library professionals in Gulbarga University are needed to educate the users to effectively use the internet and its techniques and applications.

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# Information Seeking Behaviour of the Members of Faculty of Science and Humanities in Anna University-Chennai, Tamil Nadu: A Study

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(Received on 09 November 2009 and accepted on 10 January 2010)

**Abstract**

*This paper attempts to identify information seeking behaviour of the members of faculty of Science and Humanities, Anna University, Chennai. It reveals that out of 137 members in six departments studied, 127 staff members are having doctorate in their subjects, four are holding M.Phil. Degree and one is having only post graduation. All the 137 staff required information on current development scientific and technical news and also uses books as well as abstracting and indexing journals as their major requirements for information.*
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*Out of 137 respondents i.e. 113 staff members use and sharing information with their colleagues and their own collection. Out of 137,114 respondents i.e. 83.2% preferred to use reference service. All the respondents use the e-resources. It revealed that out of 137, 55 respondents visited to the library 10 to 20 times for getting reference and browsing internet etc. Fourty nine respondents i.e. 35.7% visiting 5 to 10 times. 17 respondents i.e. 12.4% visit every day. 15 respondents i.e. 10.9% staff visiting the library 20 to 30 times.*

***Keywords:*** *Information Seeking Behaviour, Members of Faculty, Anna Univeristy-Chennai*

## 1. INTRODUCTION

Information seeking behaviour refers the individual interest in seeking information for the academic research, education, recreation, etc. The information needs are associated with everyday life in pursuit of the knowledge in various contexts such as professional interest, academic interest, educational interest and recreational interest.

Information seeking behaviour is an activity of an individual in the process of identifying a message that suits his/her knowledge pursuit. Information seeking behaviour is synonymously used with information gathering habits or information seeking pattern. It is an act of searching or finding or locating information needed by an individual, be a professional, academician, researcher, consultant, etc. The process of searching information through various channels of communication is termed as Information Seeking Behaviour.

## 2. REVIEW OF LITERATURE

Babu [1] discusses information generation by university libraries and use of these libraries. The literature on surveys about the information seeking behavior of the students is extensive. Many studies have been conducted to investigate the information-seeking behaviour of library users based on their subject interest, occupation, information environment, and geographical location [2,3]. Information seeking behavior is different from the actual information need. The information need is a subjective, relative concept in the mind of the experiencing individual and is defined as the recognition of the existence of uncertainty [4]. Prasad and Tripathi [5] highlight the information seeking behaviour of social scientists. Shanmugam [6] presents information seeking behaviour of trainee teachers in selected teacher training colleges in Malaysia.

Information seeking behaviour is an area of active interest among librarians, information scientists, communication scientists, sociologists and psychologists. Information seeking behaviour results from the recognition of some need, perceived by the user, who as a consequence makes demands upon formal systems such as libraries, information centers, on-line services or some other person in order to satisfy the perceived need [7,8].

## 3. ANNA UNIVERSITY: A BRIEF

Anna University was established on 4th September 1978 as a unitary type of University. It offers higher education in Engineering, Technology and Allied Sciences relevant to the current and projected needs of the society. Besides promoting research and disseminating knowledge gained there from, it fosters cooperation between the academic and industrial communities. Since December 2001, it has become a large, highly renowned affiliated University, having brought into its fold about 225 self-financing engineering colleges six government colleges and three government-aided engineering colleges located in various parts of Tamil Nadu State. There are major eight department like Faculty of Technology, Faculty of Civil Engineering, Faculty of Mechanical Engineering, Faculty of Electrical and Electronics Engineering, Faculty of Information and Communication Engineering, Faculty of Management Sciences, Faculty of Science and Humanities and Faculty of Architecture and Planning.

The University Library is located in three campuses, the College of Engineering Guindy campus, Madras Institute of Technology (MIT) campus and A.C. Tech., campus. Presently the library is housing a total collection of around 1.5 lakhs of reading materials in various branches of Engineering, Science and Technology including Humanities. About 600 foreign and indian journals are currently being subscribed for around 11,000 registered users are in access of the library. Many knowledge-based services like reference, referral, bibliography, MALIBNET, reprography, CD-ROM Databases, internet browsing and e-journals are available for users. Many activities of the University Library are automated and entry into the library and issue / return / renewal transactions is made possible with RFID technology using Smart Card.

The University library is a member of INDEST – AICTE consortia and UGC INFONET. Institutional Access through IP Addresses is available for e-journals access. About 4,500 + e-journals are available for access. As part of the Digital Library Project, digitization of question papers and theses in the library is under progress. The University library has a complete set of indian standards (Full text) in CD-ROM with updates. ASTM Standards (Three Volumes – Full Text) in CD-ROM, ISO 9000 and ISO 14000 Compendium (Full text in CD-ROM) and Ei Compendex Plus in CD-ROM from 1989 to March 2003 available for access. The Digital Library serves as a gateway to the world of e-resources and one-stop shop for nascent information handing, transfer and a boon to the knowledge seekers. All the campuses are networked. The library is managed by professionally qualified library and information professionals.

## 4. OBJECTIVES

The following are the objectives of this study:

i. To trace the growth and development of faculty of Science and Humanities of the Anna University.
ii. To present an overview of the Anna University Library.
iii. To identify the information seeking behaviour pattern of the faculty of Science and Humanities of Anna University, Chennai.
iv. To study the information seeking behaviour of faculty of Science and Humanities are belonging to various departments.
v. To analyse most sought sources of information by the faculty.
vi. To examine the use of internet and CD ROM Data bases for information seeking behaviour by faculty.
vii. To examine the faculty opinions about the comprehensiveness or otherwise of University main library.
viii. To identify the channels of getting information by the faculty.
ix. To analyse the extent of use and dependence on various sources of information for teaching and research.
x. To offer suggestions if any for the improvement of library and information services of the Anna University, Chennai.

## 5. METHODOLOGY

Questionnaire method used has been for this study. Questionnaire distributed and collected from the faculty of Science and Humanities of the Anna University, Chennai.

## 6. LIMITATIONS

This study has been limited to the faculty of Science and Humanities of the Anna University, Chennai.

## 7. DAT ANALYSIS AND INTERPRETATION

### 7.1 Status of Faculty Members

**Table1 Faculty of Science and Humanities**

| Sl.No. | Department | Professors | Asst. Professors | Lecturers | Visiting Professors/ Faculty | Sr. Lectures | TRA | Total |
|---|---|---|---|---|---|---|---|---|
| 1 | Mathematics | 11 | 8 | 1 | 1 | 7 | 15 | 43 |
| 2 | Physics | 16 | 7 | 7 | - | - | 2 | 32 |
| 3 | Chemistry | 8 | 4 | 6 | 1 | 4 | 4 | 27 |
| 4 | English | 3 | 2 | 4 | 1 | 1 | 2 | 13 |
| 5 | Geology | 4 | 1 | - | - | - | - | 5 |
| 6 | Media Sciences | - | 1 | 10 | 3 | - | 3 | 17 |
| | Total | 42 | 23 | 28 | 6 | 12 | 26 | 137 |

The teaching faculty consists of 137 members in six departments, out of which there are 131 regular staff and 6 visiting Professors in the Department of Mathematics, Physics, Chemistry, English, Geology and Media Science. The strength and status of the staff members are provided in Table 1.

Many departments are having two types of faculty members, i.e. regular staff and visiting faculty. The regular staff consists of Professors, Asst. Professors, Lecturers and TRA. The Department of Mathematics is having 43 regular staff including one visiting faculty. The Department of Physics is having 32 regular staff and no visiting professors. The Department of Chemistry is having 26 regular staff members and one visiting faculty. Department of English is having 13 staff members including one visiting faculty. Department of Geology is having five staff members. The Department of Media Sciences is having 17 regular staff members including three visiting faculty. Out of 137 staff members 42 are Professors, 23 are Assistant Professors, 12 are Senior Lectures, 28 are Lecturers and 32 are belong to others.

### 7.2 Types of Information Required by the Staff

The Table 2 shows the respondents requirements of information sources. All the 137 staff required information on current development scientific and technical news. In the second rank, 121 respondents i.e. 88.3% of staff required the annual reviews, year books, recent advances etc. In the third rank, 114 respondents require the information about previous work done. In the fourth rank 100 respondents 72.9% Methods, Process and Procedures. In the fifth rank 74 respondents i.e. 54% staff required the experimental design, results & applications. At the sixth rank, 63 respondents i.e. 45.9% staff required the computer programme and model building information. In the seventh rank, 46 respondents i.e. 33.5% staff express their needs as standards patents and specifications. Finally, at the eigth rank 36 respondents i.e. 26.2% staff required product material equipment and apparatus.

### 7.3 Formal Channel of Information Retrival from the Library

There are two types of channel of communication. They are formal and informal channel. The data on formal channel used by the staff are shown in Table 3. All the 137 staff members use books as well as abstracting and indexing journals as their major requirements for information. The second choice, 124 respondents (i.e. 90.5%) use current periodicals. The third choice, 109 staff members (i.e. 79.5%) use educational CD ROM. The fourth choice, 100 respondents (i.e. 72.9%) use journal back volumes. The fifth choice, 80 respondents (i.e. 65.7%) preferred to use ISI standards. 71 respondents (i.e. 51.8%) use Ph.D. theses as their sixth choice. The seventh choice, 66 respondents (i.e. 48.2%) use reports. Finally, 56 respondents (i.e. 40.8%) use non book materials as their final choice in search of information.

### 7.4 Informal Channel of Information Retrieval from the Library

Though informal channels provide immediate information and have high feed back, these channels are

not popular among the staff. From the data, the responses were analysed which are illustrated in Table 4. All the respondents preferred to use and get information from the following channels viz., consulting Information Officer / Librarian, OPAC (Online Public Access Catalogue) and Internet. Out of 137 respondents, i.e. 113 staff members use and sharing information with their colleagues and their own collection. In the third rank, 88 respondents (i.e. 64.2%) use the University, Govt. Agency etc. 85 respondents (i.e. 62%) use their personal experience, in getting their information.

### 7.5 Types of Services Availed from the Library

All the respondents used the following services viz., CD-ROM search, Reprographic services, Internet Browsing and MALIBNET services. Out of 137,114 respondents (83.2%) preferred to use reference service. 103 respondents 75.2% marked the information services such as Bibliographic Service.

### 7.6 Purpose of Browsing Internet

The investigator also attempted to discover the purpose of browsing the internet by the faculty. The findings of the study are given below in the order of decreasing intensity. All respondents use the internet for the following purposes.

i E-mail, it is probably the most popular use of the internet.
ii File transfer, the FTP (File Transfer Protocol) is the transferring of files from one computer to another.
iii Current Research, to know the nascent information in their subjects.
iv Online communication to get valuable new ideas and to know the advancements at once.
v Online journals to get the latest research information with results and to get support for their research.

Table 6 shows that out of 137 respondents 120 staff (87.5%) uses FAQ (Frequently Asked Question) 88 respondents (64.2%) use to know the daily news and current events. 72 respondents (52.5%) use for getting data on various countries / Government information available on the internet.

### 7.7 Use of CD-ROM Database

The database of various subjects used by staff members are ranked in their order of preferences. Table 7 revealed that all the respondents use INSPEC (Science Abstracts: Physics, Electronics, Computing and the Indian Science Abstract. At the second rank, out of 137, 131 respondents (95.6%) use the MATHSCI database. The third rank, 124 respondents (90.5%) use Biological abstract, 99 respondents (72.3%) use Chemical Engineering database. Finally, 63 respondents (45.9%) preferred to use chemical abstract.

### 7.8 Number of Times Visiting the Library During the Last Month

The findings of the study are given below in the order of decreasing intensity. Table 8 showed the frequency of visit to the library during the last month. It revealed that out of 137, 55 respondents visited to the library 10 to 20 times for getting reference and browsing internet etc. 49 respondents (35.7%) visiting 5 to 10 times. 17 respondents (12.4%) visit every day. 15 respondents (10.9%) visiting the library 20 to 30 times in a month.

## 8. CONCLUSION

Resources and Services of Anna University Library, Chennai, is to be improved to satisfy all the users. Information resources like textbooks, journals. e-Journals and e- Books, CD ROMs, databases etc. are required according to the users need. Most of the faculties are doctorate so the collection should be research oriented and they need nascent electronic resources to cope up with the other countries technologies.

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**Table 2 Types of Information Required by the Members of Faculty**

| Types of Information | Dept. of Mathematics | Dept. of Physics | Dept. of Chemistry | Dept. of English | Dept. of Geology | Dept. of Media Sciences | Total | % | Rank |
|---|---|---|---|---|---|---|---|---|---|
| Annual Year Book, Recent Advances, Etc. | 38 | 29 | 24 | 10 | 05 | 15 | 121 | 88.3 | II |
| Methods, Processes and Procedures | 35 | 24 | 20 | 7 | 02 | 12 | 100 | 72.9 | IV |
| Experimental Designs, Results & Applications | 24 | 19 | 17 | 5 | 1 | 08 | 74 | 54 | V |
| Product, Material Equipment and Apparatus | 06 | 9 | 11 | 3 | 02 | 05 | 36 | 26.2 | VIII |
| Information about Previous Work Done | 37 | 29 | 22 | 9 | 04 | 13 | 114 | 83.2 | III |
| Information about Current Development | 43 | 32 | 27 | 13 | 05 | 17 | 137 | 100 | I |
| Computer Programs and Model Building Information | 15 | 20 | 14 | 5 | 04 | 05 | 63 | 45.9 | VI |
| Standard and Patent Specifications | 06 | 17 | 13 | 2 | 02 | 06 | 46 | 33.5 | VII |
| Scientific and Technical News | 43 | 32 | 27 | 13 | 05 | 17 | 137 | 100 | I |

**Table 3 Formal Channels of Sources of Information Retrieved from the Library**

| Formal Sources of Information | Dept. of Mathematics | Dept. of Physics | Dept. of Chemistry | Dept. of English | Dept. of Geology | Dept. of Media Sciences | Total | % | Rank |
|---|---|---|---|---|---|---|---|---|---|
| Books | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |
| Current Periodicals | 39 | 29 | 25 | 11 | 5 | 15 | 124 | 90.5 | II |
| Journal Back Volumes | 34 | 25 | 21 | 7 | 3 | 10 | 100 | 72.9 | IV |
| Ph.D. Thesis | 17 | 22 | 17 | 5 | 4 | 6 | 71 | 51.8 | VI |
| ISI Standards | 26 | 21 | 18 | 5 | 1 | 9 | 80 | 65.7 | V |
| Educational CDs | 35 | 29 | 22 | 7 | 4 | 12 | 109 | 79.5 | III |
| Non Book Material | 14 | 13 | 13 | 4 | 3 | 9 | 56 | 40.8 | VIII |
| Abstracting & Indexing Journals | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |
| Reports | 14 | 20 | 18 | 2 | 3 | 9 | 66 | 33.5 | VII |

**Table 4 Informal Channels of Informal Sources of Information Retrieval from the Library**

| Informal Source of Information | Dept. of Mathematics | Dept. of Physics | Dept. of Chemistry | Dept. of English | Dept. of Geology | Dept. of Media Sciences | Total | % | Rank |
|---|---|---|---|---|---|---|---|---|---|
| Personal | 31 | 22 | 18 | 7 | 3 | 4 | 85 | 62 | IV |
| Colleagues, Own Establishment | 35 | 27 | 23 | 11 | 5 | 12 | 113 | 85 | II |
| University, Govt. Agency Etc. | 30 | 24 | 17 | 5 | 2 | 10 | 88 | 64.2 | III |
| Consulting Information Officer /Librarian | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |
| OPAC | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |
| Internet | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |

**Table 5 Types of Services Utilized from the Library**

| Informal Source of Information | Dept. of Mathematics | Dept. of Physics | Dept. of Chemistry | Dept. of English | Dept. of Geology | Dept. of Media Sciences | Total | % | Rank |
|---|---|---|---|---|---|---|---|---|---|
| Reference Service | 37 | 25 | 25 | 9 | 5 | 13 | 114 | 83.2 | II |
| Bibliographic Service | 33 | 27 | 20 | 7 | 4 | 12 | 103 | 75.2 | III |
| MALIBNET Services | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |
| Reprographic Services | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |
| CD-ROM | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |
| Internet Browsing | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |

**Table 6 Purpose of Browsing Internet**

| Informal Source of Information | Dept. of Mathematics | Dept. of Physics | Dept. of Chemistry | Dept. of English | Dept. of Geology | Dept. of Media Sciences | Total | % | Rank |
|---|---|---|---|---|---|---|---|---|---|
| E-mail | 43 | 32 | 27 | 13 | 5 | 17 | 120 | 87.5% | I |
| File Transfer | 43 | 32 | 27 | 13 | 5 | 17 | 120 | 87.5% | I |
| Govt. Information | 25 | 18 | 16 | 6 | 3 | 4 | 72 | 52.5 | III |
| Current Research | 43 | 32 | 27 | 13 | 5 | 17 | 120 | 87.5% | I |
| On line Communication (Discussion groups) | 43 | 32 | 27 | 13 | 5 | 17 | 88 | 64.2% | II |
| On line Journals | 43 | 32 | 27 | 13 | 5 | 17 | 120 | 87.5% | I |

**Table 7 Use of CD - Rom Data Bases in the Library**

| Informal Source of Information | Dept. of Mathematics | Dept. of Physics | Dept. of Chemistry | Dept. of English | Dept. of Geology | Dept. of Media Sciences | Total | % | Rank |
|---|---|---|---|---|---|---|---|---|---|
| Chemical Abstract | 21 | 18 | 15 | 4 | 1 | 4 | 63 | 45.9 | V |
| Chemical Engineering | 35 | 26 | 22 | 7 | 3 | 6 | 99 | 72.3 | IV |
| INSPEC (Science Abstracts) | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |
| MATHSCI | 41 | 31 | 25 | 14 | 4 | 16 | 131 | 95.6 | II |
| Biological Abstract | 40 | 28 | 25 | 11 | 5 | 15 | 124 | 90.5 | III |
| Indian Science Abstract | 43 | 32 | 27 | 13 | 5 | 17 | 137 | 100 | I |

**Table 8 Frequently Visit to the Library in a Month**

| Informal Source of Information | Dept. of Mathematics | Dept. of Physics | Dept. of Chemistry | Dept. of English | Dept. of Geology | Dept. of Media Sciences | Total | % | Rank |
|---|---|---|---|---|---|---|---|---|---|
| 5 to 10 | 16 | 13 | 13 | 2 | 2 | 3 | 49 | 35.7 | II |
| 10 to 20 | 17 | 15 | 14 | 3 | 2 | 4 | 55 | 40.1 | I |
| 20 to 30 | 6 | 4 | 2 | 1 | 1 | 1 | 15 | 10.9 | IV |
| Every day | 6 | 5 | 3 | 1 | 1 | 1 | 17 | 12.4 | III |
| More times | - | - | 1 | - | - | - | 1 | 0.7 | V |
| 5 to 10 | 16 | 13 | 13 | 2 | 2 | 3 | 49 | 35.7 | II |

# Collection Development Practice among Engineering College Libraries Affiliated to Vishweshwarayya Technical University, Karnataka: A Study

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(Received on 19 January 2010 and accepted on 25 February 2010)

**Abstract**

*This study reports the findings of a survey of the collection development practices in the libraries of 54 engineering colleges affiliated to Vishweshwarayya Technical University, Belgaum, Karnataka. Various aspects like nature of collection development policies, general picture of collection, selection of different types of documents, basis of book selection, broken sequence, sources of acquiring books, frequently consulted book selection tools, availability of secondary sources of information, number of books added every year, less/ unused used books are investigated and analyzed in the study. Concludes that the present collection is basically print dominated and needs an integrated collection (print, non-print and electronic) based on a more pragmatic collection development policy with emphasis on media resources and electronic resources.*

***Keywords:*** *Collection Development, Engineering College Libraries*

## 1. INTRODUCTION

A huge amount of the literature on Library and Information Science reports the importance of engineering libraries including the conditions of these. A study conducted by Janak and Verma [1] examined the status of engineering college libraries in terms of collection, finances, staff, services and organization. Ullah, Pradeep kumar and Ahmad [2] examined the status of collection, facilities, manpower and services. Khan [3] analysed the collection in terms of growth in size, growth of users and compares with the growth of budget. Ahmad and Satija [4] discussed the procedures for acquiring, organizing and preserving documents to dissemination of information. Rashid and Amin [5] examined the library automation operations, collection organization, services, finance and staffing. Mary and Sankar [6] discussed the evaluation techniques for document collection. Biradar and Sampath Kumar [7] evaluated the library services.

## 2. METHODOLOGY

For the present study, survey method has been adopted and a questionnaire has been designed to gather the relevant data which would give the collection development practices among libraries of engineering college affiliated to VTU, in Karnataka. The designed questionnaires were distributed to 84 librarians of engineering colleges affiliated to Vishweshwarayya Technical University, Belgaum. Out of these, 54 colleges have responded to the questionnaire accounting for a response rate of 64.3 %.

## 3. RESULTS AND DISCUSSSION

### 3.1 Characteristics of the Study Population

It is revealed from Table 1 that nearly one third of colleges under study have been established during 1971-1980, more than one fifth of colleges were established after 2001 and more than 14% of the colleges were established between 1991 and 2000. From the table it can be noted that majority of the colleges offer post graduate courses in addition to under graduate courses, while more than one fifth of the colleges offer purely under-graduate courses. Less than 80% of the colleges are located in urban areas. More than 68% of colleges are managed by private unaided institutions; less than one fourth colleges are managed by private aided institutions.

The study also revealed that total strength of students ranges between 1001 and 2000 in less than three fifth of the colleges and it is between 2001 and 3000 in more

than one fourth of the colleges. The strength of the teaching faculty is between 101 and 200 in more than 42% of colleges and it is between 51 and 100 in one fourth of colleges. 75% of the colleges under study do share their college campus. More than 60% of the engineering college libraries operate independently. Less than 33% of colleges have common library operations. More than 75% of the colleges have departmental libraries. Less then three fourth of the colleges under study have the centralized library operations.

### 3.2 Collection Development Policies

Collection development policies (CDP) are available in 87% of engineering college libraries ( Table 2). Among these, more than 91% of the libraries have written form of collection development policies (Table 3). Of the 43 college libraries, that have written form of CDP, less then three fourth have it in out-line form, more than one fifth have it in short summary form. Only two colleges have full fledged CDP (Table 4). More than 94% of the engineering college libraries develop their collection based on CDP as they select the books only on the basis of collection development policies (Table 5).

### 3.3 General Picture of Collection of Engineering College Libraries

It is found from Table 6 that more than 85% of the engineering college libraries have a very good collection of periodicals and newspapers nearly three fourth of the libraries have a very good collection of reference books, nearly two third of college libraries have a very good collection of donated books, non-book materials and e-resources. More than 57% of college libraries have good collection of books. More than 7% of the engineering college libraries have moderately good collection of Non-books materials.

**Table 1Characteristics of Colleges**

| Library Established | Number | % |
|---|---|---|
| Before 1960 | 6 | 11.1 |
| 1961-1970 | 4 | 7.4 |
| 1971-1980 | 18 | 33.3 |
| 1981-1990 | 4 | 7.4 |
| 1991-2000 | 8 | 14.8 |
| 2001 onwards | 14 | 25.9 |
| **Course offered** | | |
| Under-Graduation | 6 | 11.1 |
| Under-Graduation+ Post-Graduation | 48 | 88.9 |
| **Location of College** | | |
| Rural | 11 | 20.4 |
| Urban | 43 | 79.6 |
| **Type of Management** | | |
| Government | 1 | 1.9 |
| Semi-Government | 3 | 5.6 |
| Private Aided | 13 | 24.1 |
| Private Unaided | 37 | 68.5 |
| **Total Strength of Students** | | |
| Less then 1000 | 7 | 13.0 |
| 1001 – 2000 | 25 | 59.3 |
| 2001 – 3000 | 15 | 27.8 |
| 3001 and above | 7 | 13.0 |
| **Total Strength of Teaching faculty** | | |
| Less then 50 | 6 | 11.1 |
| 51 – 100 | 14 | 25.9 |
| 101 – 200 | 23 | 42.6 |
| 201 and above | 11 | 20.4 |
| **Other colleges on the same campus** | | |
| Yes | 41 | 75.9 |
| No | 13 | 24.1 |
| **Indicate the library operation** | | |
| Common | 13 | 31.7 |
| Independent | 28 | 68.3 |
| **Departmental libraries** | | |
| Yes | 43 | 79.6 |
| No | 11 | 20.4 |
| **Library operation** | | |
| Centralized | 32 | 74.4 |
| Decentralized | 11 | 25.6 |

**Table 2 Collection Development Policy**

| CDP | Number | % |
|---|---|---|
| Yes | 47 | 87 |
| No | 7 | 13 |
| Total | 54 | 100 |

**Table 3 Nature of Collection Development Policy**

| Policy Format | Number | % |
|---|---|---|
| Written | 43 | 91.5 |
| Unwritten | 4 | 8.5 |
| Total | 47 | 100 |

**Table 4 Nature of Written Policy**

| Written Policy | Number | % |
|---|---|---|
| Out-line form | 32 | 74.4 |
| Short summary from | 9 | 20.9 |
| Fill-fledged document | 2 | 4.7 |
| Total | 43 | 100 |

**Table 5 Document Selection based on CDP**

| Selection based on CDP | Number | % |
|---|---|---|
| Yes | 51 | 94.4 |
| No | 3 | 5.6 |
| Total | 54 | 100 |

**Table 6 General Picture of Collection of Engineering College Libraries**

| Collection | Very Good | Good | Moderately Good | Moderately Bad | Bad | Very Bad |
|---|---|---|---|---|---|---|
| Books | 23 (42.6) | 31 (57.4) | - | - | - | - |
| Periodicals | 46 (85.2) | 7 (13.0) | 1 (1.9) | - | - | - |
| Newspaper | 48 (88.9) | 6 (11.1) | - | - | - | - |
| Books Donated | 35 (64.8) | 19 (35.2) | - | - | - | - |
| Reference Books | 38 (70.4) | 14 (25.9) | 2 (3.7) | - | - | - |
| Non-book Material | 36 (66.7) | 14 (25.9) | 4 (7.4) | - | - | - |
| E-Resources | 37 (68.5) | 16 (29.6) | 1 (1.9) | - | - | - |

(Note: Figures in the parentheses indicate percentages)

### 3.4 Selection of Documents

**Table 7 Selection of Different Types of Documents**

| Particulars | Number | % |
|---|---|---|
| Text books | 54 | 100.0 |
| Reference books | 54 | 100.0 |
| General books | 53 | 98.1 |
| Periodicals | 54 | 100.0 |
| E-Resources | 43 | 79.6 |
| E-Publication | 36 | 66.7 |
| E-Journals | 51 | 94.4 |
| Periodicals | 54 | 100.0 |

Every single engineering college library selects text books, reference books and periodicals. General books are selected in more than 98% of libraries. More then 94% select e-journals. More than three fourth of the engineering colleges do select e-resources. Two third select e-publication as well (Table 6).

The study revealed that a number of selection criteria are adopted in the selection of the books. Titles recommended by HOD's, demanded by students and prescribed in the syllabus are selected in all the engineering college libraries. More then 90% of the libraries also select books on the basis of suggestions received at the ready reference desk and suggestions received day-to-day by the reference staff. More than 85% of the libraries also select books based on CDP and suggestion from librarian (Table 8). Books are also selected arbitrarily in 68% of libraries.

**Table 8 Basis of Book Selection**

| Particulars | Number | % |
|---|---|---|
| Based on CDP | 46 | 85.2 |
| Recommended titles by HOD | 54 | 100 |
| Students Demand | 54 | 100 |
| Suggestion from Librarian | 48 | 88.9 |
| Books Prescribed in the Syllabus | 54 | 100 |
| Availability of Funds | 41 | 75.9 |
| Arbitrarily | 37 | 68.5 |
| Suggestions Received at the Ready Reference Desk | 49 | 90.7 |
| Suggestions Received Day-To-Day by the Reference Staff | 49 | 90.7 |

**Table 9 Broken Sequence**

| Particulars | Number | % |
|---|---|---|
| Text Books | 44 | 81.5 |
| UGC | 11 | 20.4 |
| SC/ST | 51 | 94.4 |
| Meritorious | 14 | 25.9 |
| Poor Student Fund | 4 | 7.4 |

It is found from the study that the engineering college libraries follow broken sequence in arranging the collection (Table 9). More than 94% of the engineering college libraries maintain SC/ST collection separately, more than 80% of the libraries maintain textbooks separately, 25% of the colleges have meritorious collection and one fifth have UGC book bank and another 7% maintain collection for poor students.

### 3.5 Sources of Acquiring Books

It may be observed from Table 9 that the college libraries follow more than one method to acquire books. More then three fourth of the college libraries invite book sellers to bring the books to the library for exhibitions. More than 50% of the college libraries visit book shops for directly acquiring the books. 46% of the college libraries also invite quotations from publishers/booksellers while less then one third of the college libraries call books on approval.

**Table 10 Sources of Acquiring Books**

| Particulars | Number | % |
|---|---|---|
| Using Standard Check List | - | - |
| Visiting to Book Shop | 30 | 55.6 |
| By Inviting Sellers to Bring the Books to the Library | 43 | 79.6 |
| By Calling Books on Approval | 17 | 31.5 |
| By Inviting Quotations | 25 | 46.3 |

### 3.6 Frequently Consulted Book Selection Tools

The study revealed that the college librarians consult more then one book selection tools. A cent percent of college librarians consult publisher catalogues, more then three fourth of the librarians also consult books seller's catalogues and book reviews. Guides to the subject literature are consulted by less then two third percent of the librarians, while more the half of the librarians also consult catalogues of Govt. publications. Few college librarians also consult National bibliographies and trade bibliographies.

**Table 11 Frequently Consulted Book Selection Tools**

| Book Selection Tool Frequently Consulted | Number | % |
|---|---|---|
| Publisher Catalogues | 54 | 100 |
| Book Seller's Catalogues | 42 | 77.8 |
| National Bibliographies | 3 | 5.6 |
| Trade Bibliographies | 5 | 9.3 |
| Book Reviews | 38 | 70.4 |
| Catalogues of Govt. Publications | 30 | 55.6 |
| Guides to the Subject Literature | 34 | 63 |

### 3.7 Availability of Secondary Sources of Information

It is observed that the engineering college libraries have various secondary sources of information. Subject bibliographies and general bibliographies are found in more than 88% of libraries. Abstracting sources have a place in more than three fourth of the libraries. Indexing sources are found in less than 75% of libraries. Union catalogues form part of the collection in 25% of the college libraries (Table 12).

**Table 12 Availability of Secondary Sources of Information**

| Particulars | Number | % |
|---|---|---|
| Subject Bibliography | 48 | 88.9 |
| General Bibliography | 48 | 88.9 |
| Abstracting Sources | 42 | 77.8 |
| Indexing Sources | 39 | 72.2 |
| Union Catalogues | 14 | 25.9 |

### 3.8 Number of Books Added Every Year

It can be seen from Table 13 that more than 25% of college libraries add on an average of 1001-1500 books every year. One fourth of the colleges add more than 2000 books every year. Less than 25% of the colleges add between 501-1000 books every year. 14% of the colleges add between 1501-2000 books every year. Less then one tenth of colleges add less then 500 books every year.

**Table 13 Number of Books Added Every Year**

| Particulars | Number | % |
|---|---|---|
| Less then 500 | 5 | 9.3 |
| 501-1000 | 12 | 22.2 |
| 1001-1500 | 15 | 27.8 |
| 1501-2000 | 8 | 14.8 |
| 2001 and above | 14 | 25.9 |
| Total | 54 | 100 |

### 3.9 Less Used / Unused Used Books

Identification of less used/unused documents is done, depending on changes in curriculum, regular checking of books and advice of students. In more than ninety-four colleges, less/unused books are sent for compact storage. More than two third of the libraries weed out the books from their collection. Less then one fifth of the colleges libraries donate the unused books to other libraries and also refer off site decentralization of unused/ less used books (Table 14).

**Table 14 Less/ Unused Used Books**

| Particulars | Number | % |
|---|---|---|
| Sent for Compact Storage | 51 | 94.4 |
| Weeding | 37 | 68.5 |
| Off Site Decentralization | 9 | 16.7 |
| Donating to Other Libraries | 10 | 18.5 |

## 4. CONCLUSION

The study has identifies the collection development practices of engineering college libraries affiliated to VTU, Karnataka. A larger number of engineering college libraries has collection development policies. Of those that have CDP, the CDP is in written and out-line format. The CDP is used as the basis for selecting the books. The study has also revealed that more than 85% of the engineering college libraries have a very good collection of periodicals and newspapers. Text books, reference books and periodicals are the prominent collection being selected. General books and e-journals are also selected in a majority of engineering colleges investigated. The study also revealed that 100% of the engineering college libraries select the titles recommended by HOD, titles demanded by students and titles prescribed in the syllabus. The libraries under study follow broken sequence and maintain SC/ST collection, textbook collection separately. The college libraries follow more than one method to acquire books and consult more than one book selection tools. It is observed that the engineering college libraries have various secondary sources of information. The college libraries add an average of 1001-1500 books every year, which is a good number. Identification of less/unused documents is done, depending on changes in curriculum and are stored compactly.

The present scenario of developing the collection is quite satisfactory among the engineering college libraries. But still the practice has to be made more users responsive to reshape their collection in the context of their institutions educational profile. It is also noticed that the present collection is basically print dominated and needs an integrated collection (print, non-print and electronic) based on a more pragmatic collection development policy. In addition to the general collection development policy, the engineering college libraries need to design other collection development policy documents viz., for media resources and electronic resources etc.

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# Awareness of the Internet and Online Information Resources Among the Users of Honey Well Library, Bangalore, Karnataka: A Study

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(Received on 23 February 2010 and accepted on 05 April 2010)

**Abstract**

*Internet and online information resources provide seamless access to wide variety of information ranging from primary to tertiary source. But most of the time its quality remains doubtful, quality consciousness among the users are necessary for qualitative output. Moreover, format, style, arrangement etc. are entirely different from traditional one, users are expected to follow different approach to access and use online sources. The present study aim to know about the software engineers usage as well as corporate library services. Study reveals that quality consciousness among the library users.*

***Keywords:*** *Internet, Information Technology, Internet Sources, Quality Awareness,Users Approach*

## 1. INTRODUCTION

The advancement of Information Communication Technology brings new dimension in the field of information generation, information processing and dissemination. It opens the doors of knowledge by crossing all the barriers such as time, distance, region, language and so on and brings the universe of information in the our finger tips. Modern computer based Information Communication and Technology (ICT) are capable of handling information of any kind and size but it is unable to judge its quality. These technologies coverage today in order to form new ones and make their separate identity, in a traditional environment the quality of a document or a book can be judged using the well-defined criteria such as authority, scope, treatment, arrangement and special features[1]. But the form of information the internet environment is entirely different, there is no or minimum authority to control the information on net and the range of information varies from primary source to tertiary source with varies purposes. Hence, in addition to the above-mentioned criteria, other factors to be considered while judging its quality. Also the users must analyse the content of information before using it. In doing so they must at least check the following parameters-credibility, authority, reasonableness, supporting system, cost and copyright as the criteria to evaluate internet and information resources [2]. The following typical incident mentioned below of an internet user underlines the importance of crosschecking the reliability and validity of sources.

## 2. OBJECTIVES OF THE STUDY

i. To understand the purposes of using the internet.
ii. To know the frequency of using internet sources by the software engineers.
iii. To study the library users approach to the internet and online information resources.
iv. To identify the most preferred search engine used by the users when accessing internet sources.
v. To analyse the quality awareness among the users towards library information resources and its services.

## 3. HYPOTHESES OF THE STUDY

i IT company users are well aware of the quality of internet information resources.
ii IT company library users are depending more on e-resources rather than traditional one.

## 4. LIMITATION OF THE STUDY

The present study is confined only to the Honey well library (software industry), Bangalore. Data collected from the administrative staff, supportive staff and software engineers. Including all categories of library users, 80 respondents are answered the queries.

## 5. METHODOLOGY

The present study intends to describe the software engineers, administrative staff, and supportive staff

approach towards on quality of internet information resources. Hence the investigator has adopted survey method for data collection using stratified random sampling method and descriptive statistics has been used for the interpretation of the data. Distributed 100 questionnaires to the honey well library users and similarly respondent has returned 80 questionnaires [3].

## 6. ANALYSIS OF DATA

The data were analyzed using the descriptive statistics Purpose of using the internet

**Table 1 The Purpose of Using the Internet by IT Company Library Users**

| Sl. No. | Purpose | No. of Users |
|---|---|---|
| 1 | Information Required for the Project | 65 |
| 2 | Paper Presentation | 50 |
| 3 | For Advance Knowledge | 45 |
| 4 | Individual Learning | 30 |
| 5 | All are Using Internet, So I'm also | 3 |

Table 1 shows first and foremost purpose of using the internet by the library users of honey well software industry. The purpose differs from one person to another, information required for the project, paper presentation, for advance knowledge, individual learning etc.

**Table 2 Frequency of Using the Internet**

| Sl. No. | Duration | No. of Users | % |
|---|---|---|---|
| 1 | Less then 5 hours | 60 | 75 |
| 2 | 5-10 hours | 15 | 18.8 |
| 3 | Greater than 10 hours | 5 | 6.3 |

Table 2 shows, that most of the library users used internet less then five hours i.e.75 %. It followed by 18.8% are using internet for 5 to 10 hours in a week and only 6.3 % are using internet for more than 10 hours this shows that they are depending more on traditional source than e-source.

**Table 3 Users Approach to Information**

| Sl. No. | Users Approach to Information | Order of Preference | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 1 | Books (opac) and E-books | - | 5 | 18 | 33 | 65 |
| 2 | CD-ROMs | 3 | 7 | 25 | 35 | 55 |
| 3 | Journals and E-journals | 5 | 3 | 22 | 41 | 68 |
| 4 | Reports | 2 | 4 | 26 | 40 | 70 |
| 5 | Standards | - | - | 31 | 48 | 72 |
| 6 | Video Cassettes | 3 | 5 | 10 | 39 | 25 |
| 7 | VCDs and DVDs | 1 | 10 | 30 | 35 | 29 |

1-Below average, 2-Average, 3-Good, 4-Very Good, 5-Excellent

Table 3 revealed that users approach to internet information resources are in the order of good, very good and excellent to motivating factors that has enabled them to extend users approach towards mainly standards (60% and 90%) users approach to information. Further the users have satisfied by service rendered by the library for reports (50% and 87%), users demand for journals and e-journals (51.3% and 85%), users demand towards accessing the library OPAC and e-books (41.3% and 81.3%).

**Table 4 Search Strategy**

| Sl. No. | Search Strategy | No. of Users | % |
|---|---|---|---|
| 1 | Simple Search | 55 | 69 |
| 2 | Advanced Search<br>i. More Relevant Information<br>ii. Advanced Search Option is Given<br>iii. Don't Know | 32<br>20<br>12<br>2 | 40<br>25<br>15<br>2.5 |
| 3 | Both | 15 | 19 |

Search strategy adopted by the IT company's library users towards various internet information recourses are given in Table 4.

This shows the majority of them are using simple search, 55(69 %) followed by 32(40%) are using advanced search strategy and a very fifteen use both simple and advanced search strategy. Again out of 20 respondents has used advanced search (25%) more relevant information and the remaining adopted advanced search strategy without a purpose.

**Table 5 Most Preferred Search Engine**

| Sl. No. | Search Engine | No. of Users | % |
|---|---|---|---|
| 1 | J-Desk | 35 | 44 |
| 2 | IT Pro 24x7 | 41 | 51.2 |
| 3 | Business Pro 24x7 | 28 | 35 |
| 4 | E-Library | 45 | 56.3 |
| 5 | Harvard Manage Mentor | 53 | 66.2 |
| 6 | Web-OPAC | 62 | 78 |
| 7 | Library Homepage links | 70 | 88 |
| 8 | Any other | 10 | 12 |

It is very clear from the Table 5 that most preferred search engine accessed by the software engineers and administrative staff through the library homepage because most the links found in the library homepage only. That has resulted most of the users using library homepage as search engine by connecting to other link (88%), followed by Web-Opac (78%), Harvard mange mentor (66.2%), Ebrary (56.3%) and IT pro 24x7 respondents are 51.2%.

**Table 6 Most Preferred Format for Downloading**

| Sl. No. | Format | No. of Users | % |
|---|---|---|---|
| 1 | MS Word | 15 | 19 |
| 2 | PDF | 63 | 79 |
| 3 | HTML | 55 | 69 |
| 4 | Both | 10 | 12.5 |

Most preferred format for downloading information by the library users depicted in Table 6. It shows that most preferred format is PDF format (79%) followed by HTML format (69%), both mixed response followed by HTML and Word format respectively.

**Table 7 Awareness on Various Quality Parameters**

| Sl. No. | Format | Yes | No |
|---|---|---|---|
| 1 | Awareness of URL | 65(81.2%) | 15(18.7%) |
| 2 | Awareness of Author or Title | 40(50%) | 20(25%) |
| 3 | Awareness about Web-OPAC | 62(77.5%) | 18(22.5%) |
| 4 | Awareness about Personal Web Sites | 35(43.7%) | 45(56.2%) |
| 5 | Awareness about Client Sites | 50(62.5%) | 20(25%) |
| 6 | Awareness on Currency Information | 40(50%) | 40(50%) |
| 7 | Awareness on Graphic & Multimedia | 56(70%) | 24(30%) |
| 8 | Awareness on Additional Software | 60(75%) | 20(25%) |
| 9 | Awareness on Copyright | 45(56.2%) | 35(43.7%) |

It is clear from the Table 7 that only 81.2% of the users are having quality awareness towards information resources. Unaware of users is about 18.7%, followed by library Web-OPAC awareness is about 77.5% and awareness additional software 75%. When employee begins with his / her career with company he/she should attend the orientation programme with that the users come to know the all awareness.

## 6. FINDINGS

Based on the analysis of data, the following findings are made.

i. Purpose of using the internet and online information source by the majority of the software engineers is for the preparation of their project work.

ii. Average time spent by the library users for accessing resources are less than hours in a week i.e. 75 %.
iii. Users approach towards mainly on standards (60% and 90%).
iv. This shows the majority of them are using simple search (69 %).
v. Most of the users using library homepage as search engine by connecting to other web-links (88%), followed by Web-Opac (78%).
vi. Most preferred format is PDF format (79%), followed by HTML format (69%).
vii. The users are having quality awareness towards information resources of URL (81.2%), followed by library Web-Opac awareness is about 77.5%.

## 7. SUGGESTIONS

i. Formal induction is required to the new users and hands on experience.
ii. Most of the users are adopted only simple search.
iii. should sensitize about the advanced search and boolean logic search too.
iv. Demonstration may be organized periodically from the vendors or from the Publishers or from the product consultant.
v. Company management should support library and its services by all means.
vi. Library new services should be highlighted through e-mail alert message.
vii. Every year budget head should be enhance based on the proposal given by the in-charge librarian.

## 8. CONCLUSION

One of the major findings of the study revealed that about 81.2% of the library users have quality awareness towards internet information resources. Further, it has been found that knowledge of library users towards various quality parameters such as client site, personal website, web-links, standards and library Web-OPAC are excellent. It is an eye opener to the concerned to improve search strategy among the library users in order to improve quality information provided by the library staff.

Information centre is striving their best in rendering quality of information to the users community. Incharge library professionals of the centre are very keen in taking the feedback from the users, whether they are happy with the services provided by them or not [5]. If not then immediately they modifies there services based on the suggestions initially that service should be on evaluation basis. In future, every thing will be through online and related technique should be adopted by the library other wise it will be isolated.

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# Access of E-Resources by B.Ed Colleges in Cuddalore District, Tamil Nadu: A Study

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(Received on 11March 2010 and accepted on 15 May 2010)

## Abstract

*Information is need to everyone to their day-to-day activity. In a Library system the information has been provided both off-line and online resources. Impact of using ICT in almost all libraries, the access of information is easy to the users. This paper highlights access of e-resources by B.Ed. Colleges in general and Cuddalore District in particular. The duration of time spent in Library, seeking of academic information by the respondents, barriers in access information by the respondents are discussed in detail.*

***Keywords***: *Information Access, ICT, Educational Institution, Cuddalore District*

## 1. INTRODUCTION

The term "e-library" refers to information accessed through the internet. Unlike traditional libraries, e-libraries are not limited by location or time. Libraries have changed with the emergence and application of IT. Information literacy instruction can be formal or informal. Formal instruction can include for-credit courses and both distance and face-to-face. Informal instruction includes tutorials and online instruction. To be successful, information literacy depends on collaboration between classroom faculty, academic administrators, librarians and other information professionals Yeboah [1] describe how librarians in the University of Botswana collaborated with lecturers in the Biological Science Department and planned the syllabus, timetable, and logistics for making courses on information literacy skills for 3rd and 4th year students.

There is widespread research interest in information and communication technologies (ICT). According to Crede & Mansell [2], ICTs are crucially important for sustainable development in developing countries. Anyakoha has studied and stated the information technology is "the use of man made tools for the collection, generation, communication, recording, re-management and exploitation of information. It includes those applications and commodities, by which information is transferred, recorded, edited, stored, manipulated or disseminated".

### E-Learning

E-learning is a technological infrastructure with applications and software that manage courses and users. The software that facilitates e-learning may be called a Learning Management Systems (LMS) and supports course creation, content delivery, user registration, monitoring and certification.

### Online Education

In the late 1990s, educators began emphasizing the active role of students in the learning process. Collaboration and communication tools assumed greater importance and teachers and students began using simple technologies such as mailing lists and newsgroups for interaction.

## 2. REVIEW OF LITERATURE

Line [3] has observed that social scientists do not use formal information tools like bibliographies or reference databases, but rely on personal collections, browsing journals, and citations in other publications. White [4] has stated that if academic librarians are to realistically serve academic researchers, they must recognize the changing needs and variations in information gathering and provide effective services. Afonja [5] has discussed the statistics as a method of data collection and analysis that minimizes uncertainty in the conclusions drawn.

According to Devadason and Lingman, the understanding of information needs and information-seeking behavior of various professional groups is essential as it helps in the planning, implementation, and operation of information system, and services in work settings.

## 3. OBJECTIVES

The objectives of this study are:

i. To analyse the respondents' duration and quantum of time utilization in search of information through the internet.
ii. To identify the respondents sources of seeking academic information.
iii. To find out the respondents' views on importance of different sources of information.
iv. To examine the respondents' problems in access and utilization of internet and electronic resources.

## 4. METHODOLOGY

This study attempts to examine the internet utilization behaviour among the students of four B.Ed. Educational Colleges in Cuddalore District. Out of 17 Education Colleges in Cuddalore District, only four Educational Institutes in Cuddalore District are selected for this study viz., Shree Ragavendra College of Education, Sri Vekkaliamman College of Education, Blessy College of Education, C.S. Jain College of Education.

The researcher has selected 100 students from each college. Totally 400 respondents are selected on the basis of stratified random sampling those respondents who have interested in use of internet resources.

## 5. DATA COLLECTION AND ANALYSIS

A well structured questionnaire has been distributed to the selected four colleges. Totally 400 questionnaire was distributed and only 322 was received from the respondents. The respondents are requested to fill in the questionnaire feel freely with the information of quantum of library use, nature and type of information required, information sharing behaviour and achievements, database use and so on.

The collected data are tabulated for analysis. The statistical tools viz., Anova and Chi-square test are used.

**Table 1 Institution-wise Respondents' Mode of Learning Internet**

| Institution | Self Learning | From Faculty and Experts | Through Friends | Training Course | News Papers and Other Media | Total |
|---|---|---|---|---|---|---|
| Shree Ragavendra Collage of Education | 39 (45.88) | 14 (16.47) | 7 (8.24) | 17 (20.00) | 8 (9.41) | 85 |
| Sri Vekkaliamman Collage of Education | 52 (65.82) | 9 (11.39) | 6 (7.59) | 5 (6.33) | 7 (8.86) | 79 |
| Blessy College of Education | 11 (13.41) | 6 (7.32) | 9 (10.98) | 48 (58.54) | 8 (9.76) | 82 |
| CS Jain College of Education | 7 (9.21) | 12 (15.79) | 41 (53.950) | 7 (9.21) | 9 (11.84) | 76 |
| **Total** | 109 (33.86) | 41 (12.73) | 63 (19.56) | 77 (23.92) | 32 (9.93) | 322 |

**Chi-square Summary Result**

| | |
|---|---|
| Chi-square Calculated value | 174.1 |
| Degrees of freedom | 12 |
| Chi-square table value 5% | 21.0 |

Table 1 indicates the institution-wise respondents mode of learning internet out of 322 respondents 65.82% in Sri Vekkaliamman college of education used self learning 16.47% in Shree Ragavendra college of education gain from the faculty experts, 53.95% in CS Jain college of education has gained information from the friends circle respectively. Blessy college of education has gained information through training course (58.54%) and (1.84%) from news papers and other media.

The chi-square test is applied for further discussion. The computed chi-square vale is 174.1, which is less than its tabulated value at 5% level of significance. Hence the difference in institution size background is statistically identified as in significant with respect to respondents made of learning internet.

**Table 2 Institution-wise Respondents' Time Utilization with the Internet**

| Institution | Less than 25 hours | 26-50 hours | 51-75 hours | 75-100 hours | More than 100 hours | Total |
|---|---|---|---|---|---|---|
| Shree Ragavendra Collage of Education | 5 (5.88) | 6 (7.06) | 7 (8.24) | 12 (14.12) | 55 (64.71) | 85 |
| Sri Vekkaliamman Collage of Education | 12 (15.19) | 7 (8.86) | 9 (11.39) | 45 (56.96) | 6 (7.59) | 79 |
| Blessy College of Education | 8 (9.76) | 6 (7.32) | 11(13.41) | 14 (17.07) | 43 (52.44) | 82 |
| CS Jain College of Education | 9 (11.84) | 5 (6.58) | 6 (7.89) | 35 (46.05) | 21 (27.63) | 76 |
| **Total** | 34 (10.56) | 24 (7.45) | 33 (10.25) | 6 (32.92) | 125 (38.82) | 322 |

**Chi-square Summary Result**

| | |
|---|---|
| Chi square Calculated value | 79.61 |
| Degrees of freedom | 12 |
| Chi square table value 5% | 21.0 |

The institution-wise respondents using internet is presented in Table 2. Among 322 respondents 15.19% in Sri Vekkaliamman college of education has used less than 25 hours / week followed by CS Jain college of education has gained (11.84%) regarding internet usage between 26-50 hours / week and 50 to 75 hours / week 8.86% Sri Vekkaliamman college of education and (13.41%) Blessy college of education (8.24%) Shree Ragavendra College of Education (64.71%) have used internet by 75 to 100 hours / week and more than 100 hours /week respectively.

The chi-square test is applied for further discussion. The computed chi-square value is 79.61 which is greater than tabulated value at 5% level of significance. Hence the difference institution status is statistically identified as insignificant with respect to respondents frequency of using internet.

It could be seen clearly from the above discussion that utilization of internet for more than 100 hours of utilization the first order reporting, 75-100 hours utilization the second, less 100 hours third, 50-75 hours utilization the fourth on 26-50 hours of utilization the last.

**Table 3 Institution-wise Respondents' Source for Acquiring Required Information Resources**

| Institution | Departmental Library and Internet Resources | Collection from Other Institutions | Collection from Public Library | Internet Resources | CDs and Softwares | CDROM | Total |
|---|---|---|---|---|---|---|---|
| Shree Ragavendra Collage of Education | 5 (5.88) | 6 (7.06) | 8 (9.41) | 43 (50.59) | 12 (14.12) | 11 (12.94) | 85 |
| Sri Vekkaliamman Collage of Education | 7 (8.86) | 8 (10.13) | 9 (11.39) | 32 (40.51) | 10 (12.66) | 13 (16.46) | 79 |
| Blessy College of Education | 9 (10.98) | 6 (7.32) | 5 (6.10) | 37 (45.12) | 14 (17.07) | 11 (13.41) | 82 |
| Cs Jain College of Education | 8 (10.53) | 6 (7.89) | 9 (11.84) | 7 (9.21) | 31 (40.79) | 15 (19.74) | 76 |
| **Total** | 29 (9.00) | 26 (8.07) | 31 (9.63) | 119 (36.96) | 67 (20.81) | 50 (15.53) | 322 |

**Chi-square Summary Result**

| | |
|---|---|
| Chi square Calculated value | 46.61 |
| Degrees of freedom | 15 |
| Chi square table value 5% | 25.0 |

The Institution-wise source for acquiring required information resources is presented in Table 3. It could be noted that out of the 322 respondents (10.98%) in Blessy College of Education used Department Library and Internet; Sri Vekkaliamman College of Education has used collection from other institutions (10.13%); CS Jain College of Education and Vekkaliamman College of Education used collection of public library resources (11.84% and 11.39%) respectively. The Internet resources are used by Shree Ragavendra College of Education (50.59%); Compact Discs and Softwares are used by CS Jain College of Education (40.79%) and 19.74%) respectively.

The chi-square test is applied for further discussion. The computed chi-square value is 46.61, which is less than its tabulated value at 5% level of significance. Hence the difference in institution. Since back ground is statistically identified as insignificant with respect to respondents duration of access to internet.

It could be seen clearly from the above discussion that collection as information from internet resources takes the first order from Departmental Library and internet resources the second collection from internet resources third first order from the internet resources second collection from compact disc and softwares third, collection from CD ROM.

Table 4 indicates the institution-wise respondents' sources of required academic information. It can be assessed with the help of 24 factors on a 5 point rating sale. They include consultation with experts in the field, conversation with colleagues, media: TV, radio, and newspapers, library catalogues, attending conferences, seminars, and workshops, book reviews, visiting bookstores, bibliographies, internet search engines, browsing the collections in libraries, private and personal correspondence, citations, by chance, current awareness services of libraries, review articles, websites of bookstores, publisher catalogues and flyers, conversation with library staff, electronic databases, indexing journals, list server and e-mail alerts, reprints received from authors and publishers, abstracting journals and internet discussion forums and newsgroups.

The anova two way model is applied for further discussion. At one point the computed ANOVA value 3.49 is greater than its tabulated value at 5% level of significance. Hence, variation with respect to chosen components of academic information sources is statistically identified as significant as per the perceptions of the students. At another point the computed ANOVA value 3.51 which is greater than its tabulated value at 5% level of significant. Hence, variation among the institutions is statistically identified as significant with respect to respondents' sources of academic information seeking.

It could be seen clearly from the above discussion that respondent highly depend on collection of academic information through internet discussion forums or news groups, internet search engines, private and personal correspondence, conversation with library staff, publishes catalogue and flyers, conversation with collequagues, indexing journals, list of servers and e-mail alerts, attending conferences, seminars and workshops, media: TV, Radio and Newspapers and review articles, library catalaogues, visiting book stores, abstract journal, book reviews, website as book store, amazon.com, consultation with experts in the field, reprints received from authors/ publishers, subject specific softwares, current awareness services of libraries, browsing the collections in libraries, electronic database and bibliography.

**Table 4 Institution-wise Respondents' Sources of Required Academic Information**

| Method/Source | Shree Ragavendra College of Education | Sri Vekkaliamman College of Education | Blessy College of Education | CS Jain College of Education | Total |
|---|---|---|---|---|---|
| Consultation with Experts in the Field | 3.07 | 2.46 | 4.01 | 3.75 | 3.32 |
| Conversation with Colleagues | 4.18 | 3.38 | 4.39 | 4.22 | 4.04 |
| Media: TV, Radio and Newspapers | 3.23 | 3.56 | 4.02 | 3.96 | 3.69 |
| Library Catalogues | 3.82 | 2.56 | 4.21 | 4.11 | 3.68 |
| Attending Conferences, Seminars and Workshops | 4.03 | 3.56 | 3.36 | 3.96 | 3.73 |
| Book Reviews | 3.67 | 3.11 | 3.48 | 3.77 | 3.51 |
| Visiting Bookstores | 4.06 | 2.05 | 4.33 | 4.11 | 3.64 |
| Bibliographies | 3.28 | 2.17 | 2.96 | 2.11 | 2.63 |
| Internet Search Engines | 4.11 | 4.12 | 4.11 | 4.26 | 4.15 |
| Browsing the Collections in Libraries | 3.33 | 3.06 | 2.56 | 2.77 | 2.93 |
| Private or Personal Correspondence | 4.09 | 3.97 | 4.26 | 4.11 | 4.11 |
| Citations (References in material used) | 4.2 | 3.33 | 2.96 | 2.78 | 3.32 |
| Subject Specific Softwares | 3.19 | 3.9 | 2.91 | 2.77 | 3.19 |
| Current Awareness Services of Libraries | 2.63 | 4.11 | 2.77 | 2.56 | 3.02 |
| Review Articles | 4.22 | 3.22 | 3.77 | 3.56 | 3.69 |
| Websites of Bookstores E.G., Amazon.Com | 2.53 | 3.86 | 3.77 | 3.58 | 3.44 |
| Publisher Catalogues and Flyers | 3.8 | 4.05 | 4.11 | 4.26 | 4.06 |
| Conversation with Library Staff | 3.9 | 4.22 | 4.26 | 3.95 | 4.08 |
| Electronic Databases | 3.02 | 3.43 | 2.11 | 2.52 | 2.77 |
| Indexing Journals | 3.88 | 3.39 | 4.12 | 4.16 | 3.89 |
| List Server and E-Mail Alerts | 3.25 | 4.15 | 3.96 | 3.78 | 3.79 |
| Reprints Received From Authors / Publishers | 2.25 | 2.89 | 3.78 | 3.89 | 3.20 |
| Abstracting Journals | 2.38 | 4.42 | 3.72 | 3.85 | 3.59 |
| Internet Discussion Forums or Newsgroups | 4.01 | 4.46 | 4.11 | 4.25 | 4.21 |
| **Total** | **3.51** | **3.48** | **3.67** | **3.63** | **3.57** |

**Table 5 ANOVA Results**

| Source of Variation | SS | Df | MS | F | F crit |
|---|---|---|---|---|---|
| Rows | 44.81511 | 23 | 1.948483 | 6.707474 | 1.581608 |
| Columns | 7.41087 | 9 | 0.82343 | 2.834582 | 1.925322 |
| Error | 60.13232 | 207 | 0.290494 | | |
| Total | 112.3583 | 239 | | | |

## 6. CONCLUSION

The Institution-wise mode of learning Internet Sri Vekkaliamman College of Education occupied first position for self-learning (65.82%) compared other institutions. Shree Ragavendra College of Education gained from the Faculty Experts (16.47%) CS Jain College of Education gained from the friends circle (53.95%) respectively.

The Institution-wise time utilization reveals that Sri Vekkaliamman College of Education has used less than 25 hours / week (15.19%) followed by CS Jain College of education (11.84%). The source-wise information acquired by the institution, Blessy College of Education used Department Library & Internet sources (10.98%) followed by CS Jain College of Education (10.53%).

Regarding the institution-wise academic information has been assessed with the help of 24 factors on a 5 point rating scale. It reveals that respondent highly depend on collection of academic information through internet discussion forums are news groups, internet search engines, private are personal correspondence, conservation with library staff publisher catalogue and flyers, subject specific software, current awareness services of library.

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# Collection, Services, and Infrastructure Facilities in a Rural Medical College Library, Perundurai, Tamil Nadu: A Case Study

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(Received on 25 March 2010 and accepted on 26 May 2010)

**Abstract**

*Libraries are playing vital role in higher education, research, cultural and also socio-economical developments. Users are the true evaluator of a system. Present study is focusing the IRT-PMC Library adequacy of various collections, rendering services and infrastructure facilities. The following objectives 1.To get the users opinion about the adequacy of formal and digital sources. 2. To get the opinion about the satisfaction of the services and 3. Users view about the library infrastructure facilities are framed to conduct this study. Survey method is adapted to this study. Questionnaire is used as tool of this survey. Teaching staff and students of IRT-Perundurai Medical College, Perundurai in Tamilnadu is used as study samples. Results: Among the library collections more than 83% of the users' opinion about the text book, referees books, subscribed journals, medical dictionaries, encyclopedia collections were adequate. MCQ's and PG entrance books are not adequate. Most of the users were satisfied the library reference service and reprographic services. Among the medlars service users 79% were satisfied this service and 72% of the staff are satisfied the A/V Service.*

***Keywords:*** *Medical Library, Library Facilities, Collection Development, Library Services*

## 1. INTRODUCTION

Libraries are playing vital role in higher education, research, culture and social-economical developments. It is one of the influencing factors for the national development. It has been well recognized by the educationists, educational commissions, committees, planners and by all other concerned with the growth and developments of higher education in the country.

## 2. MEDICAL COLLEGE LIBRARY COLLECTIONS

Medical college library collections are textbooks, reference books, journals, newsletters, CDs, audio / video cassettes. These collections are not only based on the syllabus and also based on research. Textbooks, reference books, journals, A/V section reading section, reference section are some of the important sections of the medical college library. According to the Medical Council of India (MCI) guideline, research and development is necessary in the medical college [1]. Indian Council of Medical Research (ICMR) is providing funds to the faculties and students to carry short term and long-term research projects.

## 3. EDUCATIVE SERVICES OF THE MEDICAL COLLEGE LIBRARY

Medical college library serves in the following ways:

i. To provide adequate resources to the users community at optimal level.
ii. To make the resources accesses physically through open shelves.
iii. To encourage wide reading through easy accessibility of materials, reader's guidance displays.
iv. To provide online bibliographical database information, reprographic, audio-visual service to the faculties and students.
v. To provide adequate and comfortable facilities like sheeting, lighting, ventilation, aeration etc.
vi. To give formal and informal instruction in the use of library.

## 4. NEED OF THE STUDY

Main function of the Library and Information Center (LIC) is the business of providing services to its clienteles. It should correspond as closely as possible to the needs of users. It is essential for the librarians to know his/her users in order to be able to serve them efficiently and more effectively not only for the betterment of his/her personal/professional caliber and also for the development of nation. Determination of the user needs is essential for smooth function/development of the library. Periodically it is necessary to canvas the user population of the library to determine whether the objective of the library is being met [2]. In order to determine the user needs systematic user studies must be preceded.

## 5. REVIEW OF LITERATURE

Information gathering habits of American medical students and their use of formal and informal channels of communication have been studied by Herner [3]. This study revealed the fact that majority of medical students got ideas for their new projects through contacts and discussions with their fellow students whereas the rest got them through their own personal effort.

Panwars study results; teachers and students used reference books and text books for their intellectual development in research. Therefore basic reference service is important in the library services [4]. Mallaiya and Badami, survey results also focusing the above concept [5].

According to the UG Library Committee, an academic library should be located centrally with respect to classrooms, research rooms and laboratories. The size of the library building depends on factors like student's enrollment, research programs and size of the collection. It is desirable to have different types of accommodation for users like reference room, room for reading, current periodicals and adequate space for the library staff. Comfortable furniture and lighting and ventilation are needed.

P.K. Kar, suggestions about the academic library/ developments are based on the adequate amount should be allotted by the authorities for the library collection and development [6]. The librarian should well aware of the books and journals according to the needs and necessities of the staff, researcher and students. The library staff should be given more specialized training to effectively deal with users.

S.P. Singh discussed the following matters, working hours, physical facilities, membership, loan privileges, collection and development including acquisition growth, organization use and adequacy of resources are the most influencing factors of the users of the IIT-Madras, Chennai library [7]. Similarly library services like, circulation of documents, orientation programmes, Inter library loan, help in location of documents, help in use of library catalogue, bibliographic service, CAS and SDI, reprographic service are the most influencing factors of the IIT-Bombay, Mumbai utilization conducted by S.P. Singh [8]. According to Hamasundar and G.Naidu also forced that the reprographic services is must in libraries [9].

C. Chatterjee, *et..al*, study reflects the need for seating arrangements, light, drinking water and toilet are must for the users' point of view.

## 6. OBJECTIVES OF THE STUDY

The following main objectives are framed to conduct this study. The objectives are as follows:

i. To get the users opinion about the adequacy of the library resources.
ii. To get the opinion about the satisfaction of the services.
iii. To get opinion about the atmosphere and infrastructure facilities.

## 7. METHODOLOGY OF THIS STUDY

This study is based on survey method. Questionnaire is used as a tool to collect the primary data. It has simple english and easily understandable to all.

## 8. STUDY POPULATION

There were 200 selected users (75 staff and 125 students of II$^{nd}$, III$^{rd}$ and CRRI) picked up by randomly and distributed questionnaires. Out of 200 samples we have received 150 ( 50 staff and 100 students) and the response percentage was 75.

## 9. IRT - PERUNDURAI MEDICAL COLLEGE LIBRARY: PROFILE

Library of IRT-Perundurai Medical College is housed in the central wing of the medical college building, an architectural beauty set in the beautiful surroundings. Working area of the library building is 2800 sq.ft. and its interior has been designed to provide maximum convenience to the readers. The building is well structured with a well-controlled entrance lobby, a spacious reading hall, a separate periodicals and back volume hall and audio/visual with multimedia room.

### 9.1 Collections of Formal and Digital Sources

The library collected more than 7700 Medical books (textbooks and reference books) including general and medical dictionaries, encyclopedia, allied health science books, paramedical books, and PG medical entrance books. As per the MCI norms, library has subscribing morethan100 Indian and Foreign journals and good stock of back volumes (1300) of scholarly periodicals in medical and allied health sciences. It has 160 video cassettes and 40 audio cassettes, 300 medical CD-ROMs and 75 floppies.

### 9.2 Audio Visual Room

A modern audio\visual room with seating capacity of about 150 persons is in service now. It has one Pentium-IV system with LCD projector, overhead projector and slide projector.

### 9.3 Service

IRT-PMC library is providing the following services, reprographic service, reference service, A/V service, Medlars on-line bibliographic service, Internet search, offline source (CD and DVD) to effectively, expeditiously and exhaustively to the users.

## 10. DATA ANALYSIS AND INTERPRETATION

The collected data have been classified under various aspects of the library collections and its utilization. In order to examine the various objectives of the study, appropriate mathematical and statistical tools have been used.

**Table 1 Details about the Study Participants**

| Participants | Questionnaire Distributed | Received Participants |
|---|---|---|
| Staff | 75 | 50(66.67) |
| Students | 125 | 100(80) |
| Total | 200 | 150(75) |

Table 1 shows the classification of the study participants. We have received 50 (66.66%) filled questionnaires from the staff, 100(80%) filled questionnaires from the students. 150 (75%) of respondents submitted the filled questionnaires and suggested the library collections, providing services and its infrastructure facilities.

Table 2 shows the users frequency of the library visits. Among the respondents 45.33% of users are visited of the library daily, 12% are twice a week, 20% are once in a week, 22.66% are visited once in 15 days. Among the staff 20% are visited daily, 20% are twice a week, 36% are once in a week, 24% are once in 15 days. In the students level more than 55% are visited daily and less than 25% of the users' visited once in 15 days.

Table 3 reveals that the opinion about the adequacy of library textbooks, reference books, journals, and allied health science collections. About the textbook collection, 70% of staff respondents and 90% of the students were satisfied the library textbook collection was adequate. Among the total respondents 83.33% opinion was adequate and 10% was partially adequate and 6.66% was not adequate.

**Table 2 Details about the User's Frequency of the Visits to the Library**

| Participants | Daily (%) | Twice a Week (%) | Weekly Once (%) | 15 Days Once (%) |
|---|---|---|---|---|
| Staff (50) | 10 (20) | 10 (20) | 18 (36) | 12 (24) |
| Students (100) | 58 (58) | 8 (8) | 12 (12) | 22 (22) |
| Total (150) | 68 (45.33) | 18 (12) | 30 (20) | 34 (22.66) |

80% of the staff and 85% of the students' opinion about the library reference books collection was satisfied. Among the total respondents, 83.33% opinion was adequate, 17% was partially adequate and 5.33% was inadequate. About the journal subscription 86.66% of the total respondents view was adequate, 10% was partially adequate and 3.33% was not adequate.

More than 85% of the respondents views about the medical dictionaries and encyclopedia collections were adequate. Less than 5% of the users view was inadequate. MCQ and P.G-medical entrance books collection adequacy percentage was 20 and more than 70% opinion was not adequate.

**Table 3 Users Opinion about the Library Various Collections and Services of the Library**

| Respondents | Adequate | Partially Adequate | Inadequate |
|---|---|---|---|
| **Opinion about the Textbook Collections** | | | |
| Staff (50) | 35 (70) | 10 (20) | 5 (10) |
| Students (100) | 90 (90) | 5 (5) | 5 (5) |
| **Total (150)** | **125 (83.33)** | **15 (10)** | **10 (6.66)** |
| **Opinion about the Reference book Collections** | | | |
| Staff (50) | 40 (80) | 07 (14) | 3 (6.00) |
| Students (100) | 85 (85) | 10 (10) | 5 (5.00) |
| **Total (150)** | **125(83.33)** | **17 (11.33)** | **8 (5.33)** |
| **Opinion about the Journals subscription** | | | |
| Staff (50) | 45 (90) | 5 (10) | - |
| Students (100) | 85 (85) | 10 (10) | 5 (5) |
| **Total (150)** | **130 (86.66)** | **15 (10)** | **5 (3.33)** |
| **Medical and Allied Health Science Books** | | | |
| Medical Dictionaries (150) | 130 (86.67) | 15 (10) | 5 (3.33) |
| Medical Encyclopedia (150) | 130 (86.67) | 15 (10) | 5 (3.33) |
| MCQ and PG Entrance Books (150) | 30 (20) | 10 (6.67) | 110 (73.33) |

Table 4 refers that more than 95% of the users were satisfied the reference service and reprographic services. 72% of staff members were satisfied the A/V services. 100% of the students are not used A/V services. More than 75% of the staff were satisfied the library medlars on-line bibliographic services. 92% of the students are not well aware of this service.

**Table 4 Satisfaction of Library Services**

| Services | Highly Satisfied (%) | Satisfied (%) | Not Satisfied (%) | Not used (%) |
|---|---|---|---|---|
| Reference | 60 | 37 | 3 | - |
| Reprographic | 76 | 21 | 3 | - |
| A / V Service | - | 72 | 28 | 100 (Students) |
| Medlars | 27.58 | 51.72 | 20.69 | 92 (Students) |

Table 5 express the users' opinion about the library infrastructure facilities. Among the facilities, more than 60% of the users are satisfied the following infrastructure / arrangements / facilities like, books-arrangements, audio visual cassettes arrangements, books-indication, artificial-lightings, and library-working-hours are good.

The following infrastructure / arrangements / facilities like, seating, natural-lighting, ventilation, drinking-water, and toilet availability are not good. Authorities / management can easily to rectify the problems and functions the library smoothly.

**Table 5 Users Opinion about the Library Infrastructure**

| Infrastructure | Good | Not Good |
|---|---|---|
| Library Working Hours | 142 (94.67) | 8 (5.33) |
| Artificial Lightings | 127 (84..67) | 23 (15.33) |
| Book Indication | 126 (84.00) | 24 (16.00) |
| A.V. Cassettes Arrangements | 116 (77.33) | 34 (22.67) |
| Book Arrangements | 90 (60.00) | 50 (40.00) |
| Seating | 73 (48.67) | 77 (51.33) |
| Natural Lightings | 46 (30.67) | 104 (69.33) |
| Ventilation | 33 (22.00) | 117 (78.00) |
| Drinking Water | 16 (10.67) | 134 (89.33) |
| Toilet | 10 (6.67) | 140 (90.33) |

## 11. FINDINGS

Based on the analyses of the questionnaires, the following are the findings of this study:

i. It can observed that among the respondents, more than 75% of the users (staff and students) were visited the library at least once week in 58% of students were visited daily.
ii. More than 80% users were satisfied the library text books collections, reference books collections, journals subscription/availability, medical encyclopedia and dictionaries.
iii. 80% of the users' opinion that the MCQ and PG entrance exam collections was not adequate.
iv. More then 95% of the users were satisfied the library reference service and reprographic service.
v. 100% and 92% of the students were not used A/V service and Medlars service (92%) during the study period.
vi. More than 50% of the users were satisfied library facilities, library-working hours, artificial-lightings, book-indication, A / V cassettes arrangements and books arrangements.

## 12. SUGGESTIONS

Based on the study results the following suggestions are given to the library and administrators for the better utilization of the library sources and services,

i. Less percent (23%) of user are not visit the library frequently to find out reasons and rectify it.
ii. To make the availability of PG medical entrance examination and MCQ books.
iii. To create awareness programmes about the A/V, Medlars, digital and services.
iv. To convert the audio and video cassette information into digital format and provide systems independently for access.
v. To concentrate the following facilities/services like toilet, drinking-water, ventilation, reprographic, natural lighting, and seating.

## 13. CONCLUSION

This survey result reflects that the library collections are adequate and providing services are satisfied. Library professionals must strengthen the user education/ orientation programmes, library week celebration, book exhibitions for popularize the library for better utilization of the sources and services. To convert the available audio and video cassette information into digital format and provide systems independently for access. This type of survey may be conducted in regular interval, get the opinion / suggestion, and rectify the problems of the users' views for the betterment of the library progress.

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# Collection Development of Social Science Serials in University Libraries of Karnataka State (2004-2008): A Study

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(Received on 07 April 2010 and accepted on 05 June 2010)

**Abstract**

*In this paper an attempt has been made to study the collection development of scientific serials in the University libraries of Karnataka state and data collected from the six general university libraries of Karnataka state i.e. 1) University of Mysore; 2) Karnataka University, Dharwar; 3) Bangalore University, Bangalore; 4)Gulbarga University, Gulbarga; 5)Mangalore University, Mangalagangothri and 6) Kuvempu University, Shankarghatta. Over the last few years there has been a rapid rise in the scientific serials prices. The University Libraries in Karnataka are still to evolve a policy of collection development, organization and management as they are multifaceted and complex processes. The collection of data is made from Kardex and Serials' maintenance Register maintained by University libraries. In this paper coverage is of year wise and subject-wise subscription of social science subject serials for the period 2004-2008.*

***Keywords:*** *Serials Acquisition, Scientific Serials, University Libraries, Social Science Serials*

## 1. INTRODUCTION

A library is not recognized by its building or by its staff or by its interior decoration. It is observed by its collection. In fact the future generation will blame us or praise us for the collection. A university library collection has to be developed with a view of the objectives of university and research being done there. As such its general collection may include, books, thesis, manuscripts, serials, e-journals, compact discs etc., In a library, the information available is in all forms such as books, serials, electronic media etc. and all are important as far as an user is concerned. However, the present day need for nascent information in fulfilled by the scientific serials in print and electronic media. Among them serials are considered as important source of communication of nascent information. Such information kindles the fire in researchers mind for existing complete information in order to develop it much more. The continuity of the developments is available through scientific serials only. Therefore scientific serials contribute mainly as a strong resource for research in any academic institution.

## 2. OBJECTIVES OF THE STUDY

The primary objective of the present study is to examine the collection development of scientific serials in University libraries of Karnataka state. The specific objectives are:

i. To know the University's year-wise serials subscriptions.
ii. To investigate the serials collection development process.
iii. To know how many common serials are subscribed by all the university libraries.
iv. To know how many uniform titles are subscribed when groups of five universities, four universities, three universities and two universities are taken into accounts.
v. To know how many serials are subscribed by universities independently without duplication.
vi. To know subject-wise serials subscription

## 3. SCOPE AND LIMITATION OF THE STUDY

The study entitled collection development of social science serials in Universiy libraries of Karnataka state covers only six general University libraries i.e. i) University of Mysore; 2) Karnataka University, Dharwar; 3) Bangalore University, Bangalore, 4)Gulbarga University, Gulbarga; 5)Mangalore University, Mangalagangothri, and 6) Kuvempu University,

Shankarghatta. The scope of the study population comprises data related to Social science serials collected from Kardex system and periodical maintenance register maintained in each library. It is also proposed to restrict the period of study for the period from 2004 to 2008. The subjects covered in Social science include Economics, History, Political Science, Sociology, Social work, Women studies, Journalism, Library and Information Science, Religion, Philosophy, Psychology and Geography.

## 4. REVIEW OF LITERATURE

Library profession in India began to emerge during 1930's, when Westerners were talking about buying policies, appropriations of funds, and effective organization of acquisition work.

Mittal [1] documented the problems involved in acquiring serials in Indian Universities. The problems faced by Indian librarians in acquiring current periodicals were discussed. Agarwal [2] and Bavakutty [3] have observed that journals are acquired in Indian libraries through subscription from publisher, agents, government agencies, learned societies, exchange and on gratis. Venkatesan and Krishnan [4] felt that direct method is better among various methods of acquisition of periodicals. Das Gupta [5] preferred agency system, as direct method has more problems compared to subscription through agency. According to Iyengar [6] the subscription through agency system could be made efficient if there is a proper understanding between serial librarian and subscription agents. Tapaswi and Maheswarappa [7] presented an analysis of serials preferred and cited in various communications by Indian oceanographers during 1963 to 1992. Acquisition of periodicals in the library of the Regional Research Laboratory, Bhubaneswar, Orissa, India and outlines methods of direct acquisition from publishers and indirect acquisition through agents and compares data on receipt and non receipt of journals from publishers and through agents discussed by Dalai and others [8]. Ramaiah and Reddy [9] observed that periodicals are an important component of University library collections. However, the periodicals are expensive and need to be continued year after year. This decline of serials collections in the Universities is affecting the academic excellence of teaching and research. Ijari and Kannappanavar [10] examines recent trends in library and information science periodicals publishing and the role of professional associations in the development of library and information science periodicals. The establishment of the Indian Council of Social Science Research and its Social Science Documentation Centre; examines the Centre's projects mainly catalogues, indexes, and bibliographies of various social science disciplines; and mentions plans for the future described by Agrawal and Patwardhan [11].

## 5. METHODOLOGY

In this present study, data has been collected from existing documentary resources available in University libraries i.e. Kardex and Accession register maintained in periodical section. For the purpose of this study, the scope is confined to only social science subjects and general references and other subjects are not taken into account. The mode of collection of data, its presentation, analysis and interpretation are given in the form of tables and graphs.

## 6. DATA ANALYSIS AND INTERPRETATION

In this paper an attempt has been made to analyse and interpret the data collected from university libraries of Karnataka state. The collected data is presented in the form of tables and graphs analysed by using simple methods of calculation.

**Table 1 Subscription of Social Science Serials in Universities Libraries (2004)**

| No. of Universities | No. of Volumes | Total Numbers | % |
|---|---|---|---|
| 1 University | 172 | 172 | 39.2 |
| 2 Universities | 50 | 100 | 22.7 |
| 3 Universities | 21 | 63 | 14.4 |
| 4 Universities | 14 | 56 | 12.8 |
| 5 Universities | 6 | 30 | 6.8 |
| 6 Universities | 3 | 18 | 4.1 |
| Total | | 439 | 100 |

The total number of scientific serials subscribed by all the university libraries in the field of Social science from 2004 to 2008 is presented in the Table 1. It is observed from the table that three scientific serials i.e. Indian Journal of Agricultural Economics, Sociological Bulletin and SRELS Journal of Information Management (4.1%) are subscribed by all the universities and six serials (6.8%) i.e. Annals of Library and Information studies,

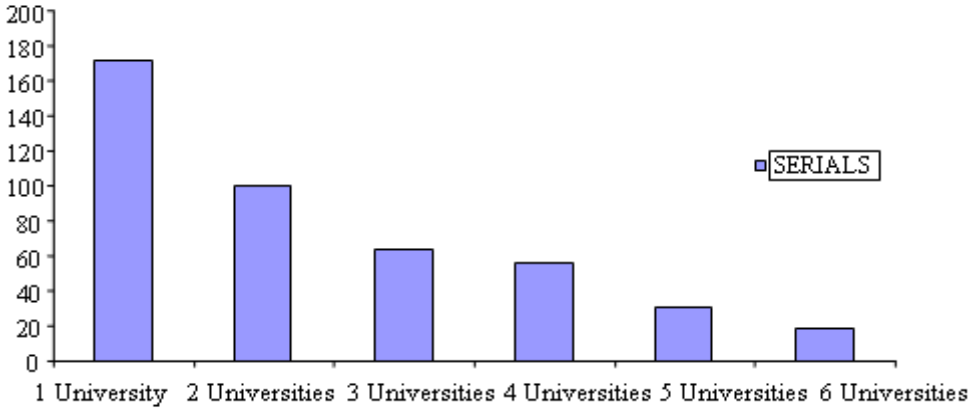


Fig.1 Subscription of social science serials in universities libraries (2004)

Mainstream, Seminar, Social Action, Southern Economist and Studies in History (6.8%) by five universities having same titles during 2004. Similarly in the same year 14 serials Economic and Political Weekly, IASLIC Bulletin, ILA Bulletin, Indian Economic and Social History Review, Indian Economic Review, Indian Journal of Economics, Indian Journal of Information Library and Society, International Studies, Journal of Communication, Psychological Studies, Quarterly Economic Report and Social Scientist and 21 (14.4%), scientific serials of same titles are by four and subscribed in three university libraries, 50 (22.7%) serials are subscribed by two university libraries. On the other hand, 172 (39.2%) serials of different titles are subscribed by universities under study.

**Table 2 Subscription of Social Science Serials in the Universities Libraries (2005)**

| No. of Universities | No. of Volumes | Total Numbers | % |
|---|---|---|---|
| 1 University | 143 | 143 | 38.3 |
| 2 Universities | 45 | 90 | 24.1 |
| 3 Universities | 21 | 63 | 16.9 |
| 4 Universities | 13 | 52 | 14.0 |
| 5 Universities | 5 | 25 | 6.7 |
| 6 Universities | - | - | -- |
| Total | | 373 | 100 |

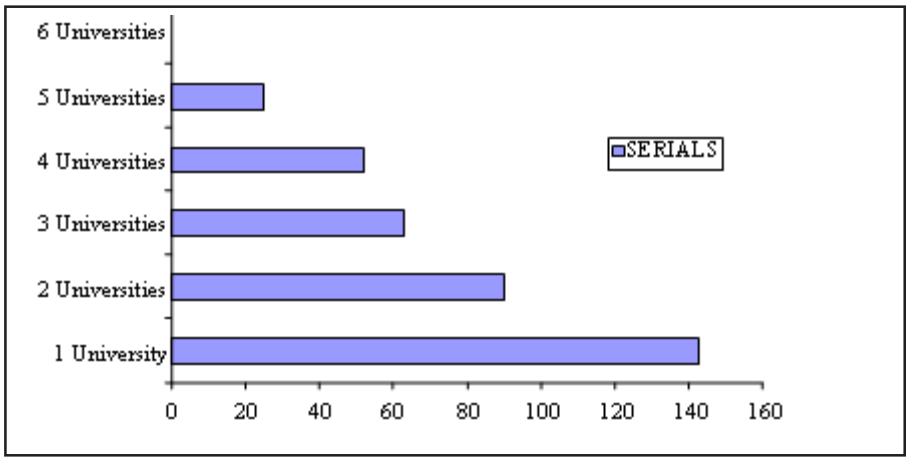


Fig.2 Subscription of social science serials in universities libraries (2005)

It is observed from the Table 2 that in the year 2005 only five serials (6.7%) i.e. Annals of Library and Information studies, Economic and Political Weekly, IASLIC Bulletin, Indian Journal of Agricultural Economics and Southern Economist are subscribed by five universities and 13 serials (14.0%) i.e. Guide to Indian Periodical Literature, ILA Bulletin, Indian Economic Review, Indian Journal of Economics, Indian Journal of Information Library and Society, Library Herald, Mainstream, Seminar, Social Action, Sociological Bulletin, Studies in History and SRELS Journal of Information Management are subscribed by four universities.

However, half of the university libraries subscribe to similar twenty one scientific serials (16.9%) i.e. Artha Vijnan, BIBLIO, Communication Today, DESIDOC Bulletin of Information Technology, Indian Economic and Social History Review, Indian Journal of Public Administration, Indian Journal of Social Work, Information Studies, International Economic Affairs, Journal of Indian School of Political Economy, Journal of Library and Information science, Kurukshetra, Man in India, Monthly Public Opinion Survey, Monthly Review of Karnataka Economy, Parliamentary Affairs, Psychological Studies, Psychology and Developing Societies and Quarterly Economic Report and forty five (24.1%) common serial titles subscribed by only two university libraries during the year 2004-2008. While 143 (38.3%) different titles of scientific serials are subscribed by universities without any duplication.

**Table 3 Subscription of Social Science Serials in Universities Libraries (2006)**

| No. of Universities | No. of Volumes | Total Numbers | % |
|---|---|---|---|
| 1 University | 180 | 180 | 38.5 |
| 2 Universities | 43 | 86 | 18.4 |
| 3 Universities | 34 | 102 | 21.8 |
| 4 Universities | 11 | 44 | 9.4 |
| 5 Universities | 5 | 25 | 5.4 |
| 6 Universities | 5 | 30 | 6.5 |
| Total | | 467 | 100 |

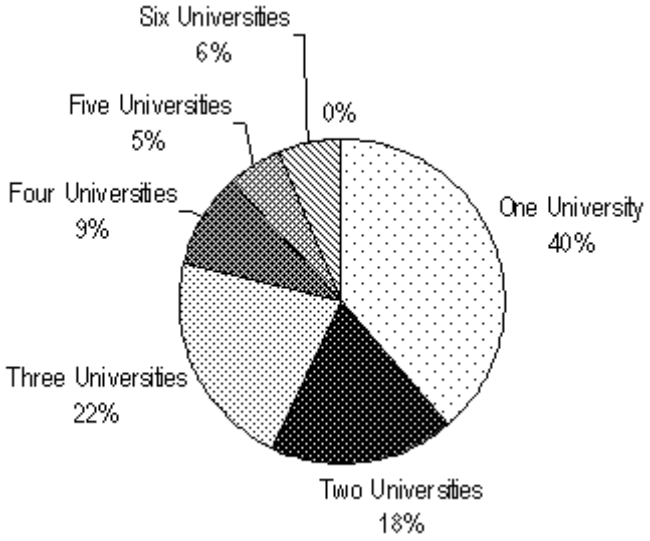


Fig.3 Subscription of social science serials in universiy libraries (2006)

Table 3 and Figure 3 show that in the year 2006 five scientific serials (6.5%) i.e. Annals of Library and Information studies, Contribution to Indian Sociology, Economic and Political Weekly, Indian Journal of Agricultural Economics and SRELS Journal of Information Management are subscribed by all the Universities and five serials Herald of Library Science, Journal of Rural Development, Seminar, Social Scientist and Southern Economist in five universities. Eleven scientific serials (9.4%) i.e. IASLIC Bulletin, Indian Economic and Social History Review, Indian Economic Review, Indian Journal of Information Library and Society, Information Studies, Kurukshetra, Mainstream, Quarterly Economic Report, Social Action, Sociological Bulletin and Studies in History are uniformly subscribed by four universities and half of the universities subscribed 34 (21.2%) to common titles and two universities subscribed to 43 (18.4%) social science serials. About 180 (38.5%) social science serials are independently subscribed in the University libraries.

**Table 4 Subscription of Social Science Serials in Universities Libraries (2007)**

| No. of Universities | No. of Volumes | Total Numbers | % |
|---|---|---|---|
| 1 University | 183 | 183 | 39.9 |
| 2 Universities | 52 | 104 | 22.5 |
| 3 Universities | 26 | 78 | 16.9 |
| 4 Universities | 12 | 48 | 10.4 |
| 5 Universities | 6 | 30 | 6.5 |
| 6 Universities | 3 | 18 | 3.8 |
| Total | | 461 | 100 |

**Table 5 Subscription of Social Science Serials in Universities Libraries (2008)**

| No. of Universities | No. of Volumes | Total Numbers | % |
|---|---|---|---|
| 1 University | 163 | 163 | 36.1 |
| 2 Universities | 52 | 104 | 23.1 |
| 3 Universities | 27 | 71 | 15.7 |
| 4 Universities | 15 | 60 | 13.3 |
| 5 Universities | 7 | 35 | 7.8 |
| 6 Universities | 3 | 18 | 4.0 |
| Total | | 451 | 100 |

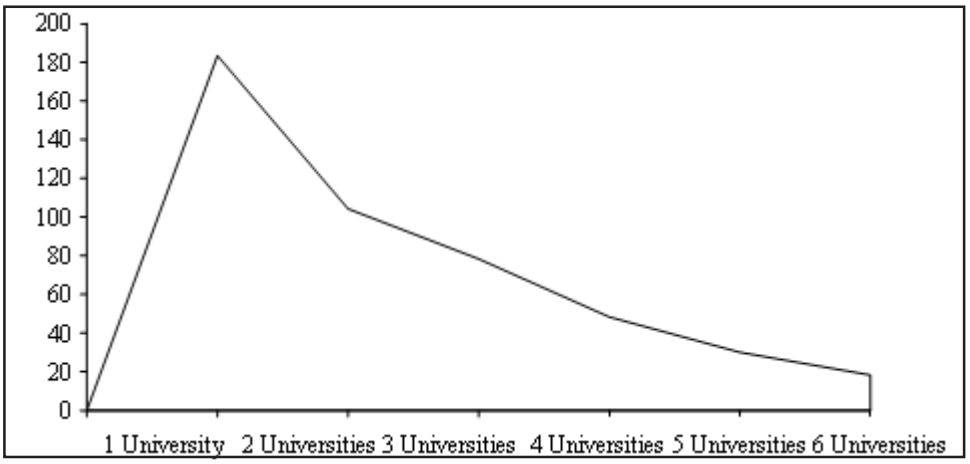


Fig.4 Subscription of social science serials in universities libraries (2007)

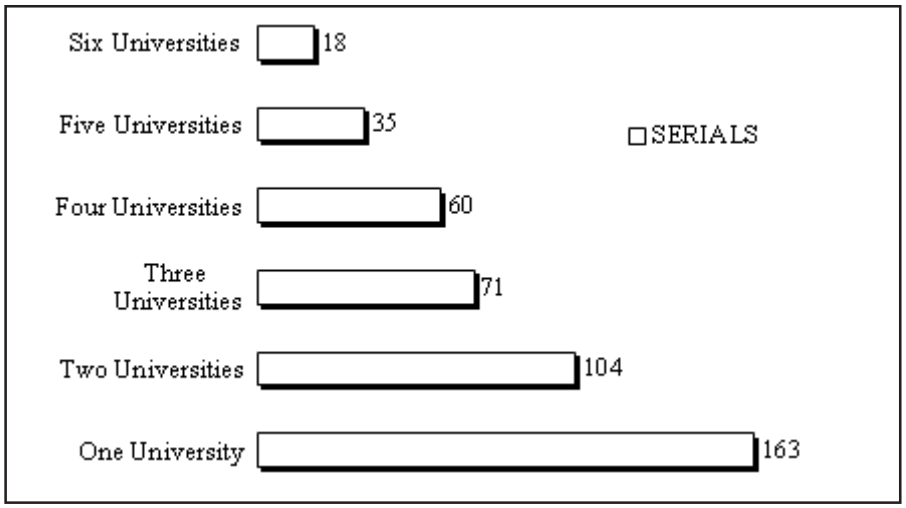


Fig.5 Subscription of social science serials in universities libraries (2008)

It is found from the Table 5 and Figure 5 that in the year 2008 only three serials (4.0%) i.e. Economic an Political Weekly, Kurukshetra and SRELS Journal of Information Management and seven serials i.e. Annuals of Library and Information Studies, Contribution to Indian Sociology, Herald of Library Science, Indian Journal of Agricultural Economics, Library Herald and Studies in History are subscribing same titles of social science serials in six and five universities in common.

Only 15 (13.3%) serials i.e. IASLIC Bulletin, Indian Economic and Social History Review, Indian Journal of Information Library and Society, Indian Journal of Social work, Information Studies, International Economic Affairs, International Journal of Computing Application, Journal of Rural Development, Journal of Social and Economic Development, Man in India, Mainstream, Quarterly Economic Report, Seminar, Social Scientist, Sociological Bulletin and Southern Economist are subscribed by four university libraries and 27 similar titles are subscribed in three universities and two universities subscribe to 52 common serials. More than 160 serials are subscribed independently by the university libraries without any duplication.

**Table 6 Social Science Serials Subscription in Six Universities by Subject-wise**

| Sl. No. | Subject | Numbers of Volumes | % |
|---|---|---|---|
| 1 | Economics | 517 | 23.6 |
| 2 | History | 285 | 13 |
| 3 | Journalism | 107 | 4.9 |
| 4 | Library & Information Science | 343 | 15.7 |
| 5 | Philosophy | 30 | 1.4 |
| 6 | Political Science | 313 | 14.2 |
| 7 | Psychology | 126 | 5.8 |
| 8 | Religion | 35 | 1.6 |
| 9 | Social Work | 140 | 6.4 |
| 10 | Sociology | 227 | 10.4 |
| 11 | Women Studies | 68 | 3 |
| **Total** | | **2191** | **100** |

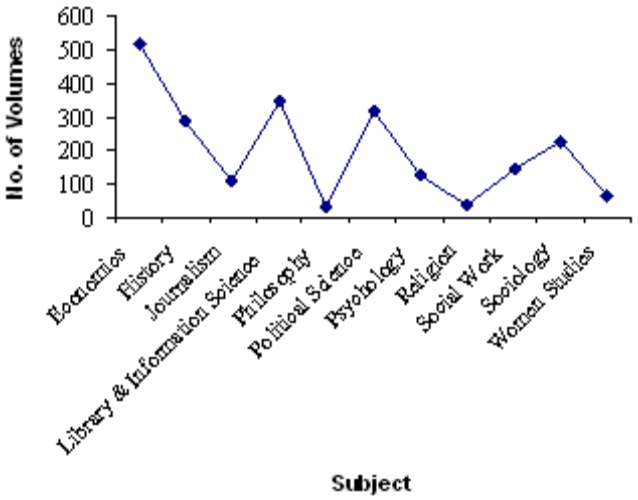


Fig.6 Social science serials subscription in six universities: subject-wise

Table 6 shows the subject-wise distribution of social science serials representing six universities. It is found from the table that 23.6% of the economics subject serials are subscribed by all the universities from 2004-2008. It is followed by Library and Information Science (15.7%), Political Science (4.2%), History (13.0%) and Sociology (10.4%) etc. The least number of the serials in social science discipline subscribed to by all the universities is 1.4% in Philosophy subject.

## 7. CONCLUSION

The main purpose of collection development is to provide the information resources in print and other formats necessary to carry out the University's teaching commitments and to support the research of its students. Subscription of serials occupies a greater significance to foster the academic and research developments of the institution. The Library, in addition, accepts responsibility for building and maintaining specialized collections in certain limited areas where it is traditionally strong, in order to serve as a regional or national resource for the scholars.

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# Information Communication Technology Infrastructure Development in Special Libraries in Tamil Nadu: A Study

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(Received on 13 April 2010 and accepted on 27 June 2010)

**Abstract**

*Information and Communication Technology has revolutionized the concept of libraries. Each and every library is getting digitized. An electronic library comprises e-collections, services, and infrastructure to support lifelong learning, research, scholarly communication as well as preservation of the recorded knowledge. This study discusses the factors that will necessitate the special libraries to ICT infrastructure, as well as the definition, need, advantages and disadvantages of electronic libraries, the requirement for building an e- library etc. The emphasis is also put to describe the role of librarian in the new environment*

***Keywords:*** *Electronic Library, Information and Communication Technology, Infrastructure, Special Libraries*

## 1. INTRODUCTION

We are in the age of a networked society where Information Technology in addition to its use in all spheres of human activity has been used extensively to record, store, and disseminate the information in the digital form. Information Technology has almost converted the world into a global village. The revolution in the Information Technology sector is influencing the information industry also. Libraries are also changing to meet the demand put on them. Information technology and shared information systems have been used increasingly in the past two decades to bring coherence to library services.

The new generation whose demand for information is never met by traditional libraries, hence those libraries should be developed as a well equipped and interconnected as digital libraries.

Red Cell believes the key to ICT in special libraries is a robust and secure infrastructure. The design and implementation of this infrastructure will include the following components: hardware, software, technical support, purchasing and health and safety.

## 2. AIMS OF SPECIAL LIBRARIES

i. To improve learning and teaching through the effective and embedded use of ICT
ii. To make effective, innovative and sustainable use of ICT;
iii. To improve the availability and use of high quality educational content;
iv. To develop a coherent, sustainable and dependable ICT infrastructure for colleges.

## 3. OBJECTIVES

The objectives of the present study are to examine the availability of information and communication infrastructure facility and their uses in Special libraries in Tamil Nadu.

The objectives are:

i. To survey the existing information technology infrastructure available in the Research Libraries to the Research Community.
ii. To identify the transition of information sources and systems from paper to electronic media.
iii. To know the reasons for inadequate information technology infrastructure.
iv. To know the satisfaction of existing information communication technology facilities in the research institutes in Tamil Nadu.

## 4. HYPOTHESES

The following hypotheses are formulated on the basis of content and coverage of framed objectives and they are tested by employing appropriate statistical tools:

i. There are significant differences with respect to respondents' hardware, software & network connection facility in the research libraries.
ii. There is a significant difference in the low usage of information and communication technology facility among the scientists of various institutions in terms of the nature and type of information requirements.
iii. There is a significant difference between institutions and respondents' satisfaction with information and communication technology infrastructure facility available in their own institutions for research purposes.

## 5. SURVEY DESIGN

The study was limited to the library staff, research scholars and scientist of Special Libraries, Tamil Nadu.

As many as 50 special libraries are there in Tamil Nadu. These are Central Government, Central Government Autonomous, State Government and State Government Autonomous libraries.

The researcher has selected nine research institutions belonging to (i) ICAR (ii) CSIR (iii) ICMR (iv) Non Governmental Organization. Indian Council of Agricultural Research Institutions include Central Institute of Brakishwater Aquaculture, the CMFRI having three secteral offices in Tamil Nadu. The researcher has taken the Central Institute of Brackishwater Aquaculture. Council of Scientific and Industrial Research Institutions include Central Electrochemical Research Institute, Central Leather Research Institute and Structural Engineering Research Centre, Structural Engineering Research Centre and CSIR Madras. Indian Council of Medical Research Institutions includes Centre for Research in Medical Entomology and Tuberculosis Research Centre. The other premier research institutions like M S Swaminathan Research Foundation and Madras Institute of Development Studies. The nine premier research institutions are selected and grouped under four categories. The questionnaire was distributed directly to the library staff to collect information regarding ICT infrastructure availability in the special libraries, views on strategy for allocation of fund for providing ICT facility, etc.

A total of 600 questionnaires were distributed to the research scholars and scientists to collect the primary data. The questionnaires were completed by personal visits with users. 515 questionnaires out of 600 questionnaires were found usable for analysis. The collected data was analyzed and presented in the tabular form.

## 6. DATA ANALYSIS AND INTERPRETATION

The technical infrastructure is required for institutions especially for special libraries to support ICT facility and large-scale digital collections for the scientists who engage in R & D activities and for communication with their field people. Technical infrastructure focuses on a core set of internal systems.

Data presented in Table 1 indicate the availability of computer hardware in the Special Libraries. Concerning hardware, all the nine libraries (100%) have Pentium Computers, Modem / Data Card / Wi Fi, DVD / CD – Read facility; eight libraries (88.88%) have servers to maintain library databases; six libraries have work stations to access the library OPAC and other electronic resources. All the nine libraries (100%) have Dot Matrix Printers; five (55.55%) Government libraries i.e. CSIR & ICAR have Ink Jet printer facility in the library; two CSIR libraries (22.22%) have Laser Printer facility in the library, seven libraries (77.77%) have DVD / CD – Writers. In addition, four 44.44% of libraries have scanners and none of the library is having Apple Macs and CD tower for accessing several CD-ROMS simultaneously.

**Table 1 Hardware Facilities**

| Sl. No. | Items | No. of CSIR Libraries | No. of ICMR Libraries | No. of ICAR Libraries | No. of NGO Libraries | Total |
|---|---|---|---|---|---|---|
| 1 | Pentium I / II / III / IV | 4 | 1 | 2 | 2 | 9 (100%) |
| 2 | Servers | 4 | 1 | 2 | 1 | 8 (88.88%) |
| 3 | Workstations | 4 | 1 | 1 | 0 | 6 (66.66%) |
| 4 | Apple Macs | 0 | 0 | 0 | 0 | 0 (0.00%) |
| 5 | Printers – Dot Matrix | 4 | 1 | 2 | 2 | 9 (100%) |
| | Printers – Ink Jet | 4 | 0 | 1 | 0 | 5 (55.55%) |
| | Printers - Laser | 2 | 0 | 0 | 0 | 2 (22.22%) |
| 6 | Modem / Data Card / Wi Fi | 4 | 1 | 2 | 2 | 9 (100%) |
| 7 | DVD / CD-ROM - Read | 4 | 1 | 2 | 2 | 9 (100%) |
| | DVD / CD-ROM - Write | 4 | 1 | 2 | 0 | 7 (77.77%) |
| | CD -Towers | 0 | 0 | 0 | 0 | 0 (0.00%) |
| 8 | Scanners | 4 | 0 | 0 | 0 | 4 (44.44%) |

**Table 2 Software Facilities**

| Sl.No. | Items | No. of CSIR Libraries | No. of ICMR Libraries | No. of ICAR Libraries | No. of NGO Libraries | Total |
|---|---|---|---|---|---|---|
| 1 | DOS / UNIX / LINUX / Windows | 4 | 1 | 2 | 2 | 9 (100%) |
| 2 | Library Management Software | 4 | 1 | 2 | 1 | 8 (88.88%) |
| 3 | Word Processing Software | 4 | 1 | 2 | 2 | 9 (100%) |
| 4 | Networking Software | 4 | 1 | 1 | 1 | 7 (77.77%) |

A study of data in Table 2 indicate the software facilities. Concerning software, majority of libraries, eight (88.88%) are using Commercial Library Management Software; all the libraries (100%) are using Word Processing Software and they also use different Operating Systems like DOS, UNIX, LIINUX and Windows. Seven (77.77%) libraries have indicated that they have networking software as well.

**Table 3 Network Facilities**

| Sl.No. | Items | No. of CSIR Libraries | No. of ICMR Libraries | No. of ICAR Libraries | No. of NGO Libraries | Total |
|---|---|---|---|---|---|---|
| 1 | Internet | 4 | 1 | 2 | 2 | 9 (100%) |
| 2 | Intranet | 1 | 0 | 0 | 0 | 1 (11.11%) |

A study of data in Table 3 indicate that all the nine libraries in the study have internet connection facility and one (11.11%) library is having intranet facility.

**Table 4 Institution-wise Respondents' Reason for Low Usage of ICT Facility**

| Institution | Aware but No time to Access | Not aware | Aware but Internet Connection is not Proper | Aware but Need Training | Total |
|---|---|---|---|---|---|
| CSIR | 86(16.7%) | 44 (8.5%) | 36 (7%) | 30(5.8%) | 196 (38.1%) |
| ICMR | 27 (5.2%) | 9 (1.7%) | 11(2.1%) | 19(3.7%) | 66 (12.8%) |
| ICAR | 47 (9.1%) | 20(3.9%) | 35(6.8%) | 13(2.5%) | 115 (22.3%) |
| NGO Libraries | 61(11.8%) | 34 (6.6%) | 30 (5.8%) | 13(2.5%) | 138 (26.8%) |
| Total | 221(42.9%) | 107(20.8%) | 112 (21.7%) | 75(14.6%) | 515(100%) |

**Chi-square Summary Result**

| | |
|---|---|
| Chi square Calculated Value | 22.171 |
| Degrees of Freedom | 9 |
| Chi square Table Value at 5% | 16.919 |

Data presented in Table 4 indicate the institution-wise distribution of respondent's reason for low usage of ICT facility. It could be noted that out of 515 respondents, 42.9% of them marked aware but no time to access; 20.8% of them marked not aware, 21.7 % of them marked aware but internet connection is not proper and 14.6% of the respondents marked aware but need training.

It could be seen clearly from the above discussion that the majority of the respondents marked aware but no time to use ICT facility fully.

The chi-square test is applied for further discussion. The computed chi-square value is 22.171, which is greater than its tabulated value at 5% level of significance. Hence the difference in institution-wise response is statistically identified as significant with respect to respondents' reason for low usage in search of research information.

A study of data in Table 5 indicate the gender-wise respondents' satisfaction of ICT infrastructure facility in their own institute. In general, male respondents are highly satisfied (32.2%) with respect to ICT infrastructure in their own institute than the female respondents (9.1%).

The chi-square test is applied for further discussion. The computed chi-square value is 1.550, which is less than its tabulated value at 5% level of significance. Hence the difference in gender-wise response is statistically identified as insignificant with respect to respondents' satisfaction of ICT infrastructure facility in their own institute.

It is concluded that there is no significant difference between male and female respondents of the research institutions in the satisfaction of ICT infrastructure facility in their own institute.

**Table 5 Gender-wise Respondents' Satisfaction of ICT Infrastructure Facility in their Own Institute**

| Gender | Highly Satisfied | Partially Satisfied | Normally Satisfied | Dissatisfied | Total |
|---|---|---|---|---|---|
| Male | 166 (32.2%) | 117 (22.7%) | 100 (19.4%) | 6 (1.2%) | 389 (75.5%) |
| Female | 47 (9.1%) | 39 (7.6%) | 37 (7.2%) | 3 (0.6%) | 126 (24.5%) |
| Total | 213 (41.4%) | 156 (30.3%) | 137 (26.6%) | 9 (1.7%) | 515 (100%) |

**Chi-square Summary Result**

| | |
|---|---|
| Chi-square Calculated value | 1.550 |
| Degrees of freedom | 3 |
| Chi-square table value at 5% | 7.815 |

## 7. FINDINGS

i. It is revealed from the survey that the majority of the libraries have automated their functions.
ii. The availability of hardware, software and network connection is encouraging in government sectors than non-governmental organizations.
iii. It also reveals the reason for low usage of ICT facility.
iv. It is understood from the above discussion that majority of the respondents' especially research scholars are highly satisfied with ICT infrastructure availability in their institute.

## 8. SUGGESTIONS

The views and comments offered by the respondents have enabled the investigator to offer some feasible suggestions for deriving the maximum benefits from the impact of information technology innovation on library resources,

i. The study has clearly revealed that provision of ICT infrastructure is expensive for accessing and disseminating the information. Libraries must make provisions in their budgets to procure and maintain the IT infrastructure on a continuous basis. When making a budget provision, the obsolescence of the hardware, software should be taken into consideration, since these tend to become obsolete very quickly.
ii. The present study has considered the lack of efforts of respondents' in upgrading their skills to meet the changes brought upon by IT applications in libraries. Respondents' must be given training in handling ICT equipments in order to the maximum use of ICT infrastructure available in the libraries.

## 9. CONCLUSION

Electronic libraries are not going to replace the physical existence of document completely but no doubt to meet the present demand, to satisfy the non local user digitization must be introduced. The initial cost of setting up of an electronic library is high but in future the cost to manage this collection will be cheaper than that of any traditional library.

A key feature of Special libraries ICT vision is 'anytime learning'. The special libraries aspire to provide scholars and scientists with home access to information, work and applications, in line with recent government directives.

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# Utilization of Computers in Small Scale Industries in Cuddalore District, Tamil Nadu: A Case Study

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**Abstract**

*This paper presents a framework to analyze capacity utilization issues with reference to production processes heavily characterized by the use of ICT. In this framework, by developing in original way, the fund-flow model of small scale industries, one of the pioneers of the computer utilization analysis, since this model is able to capture many qualitative aspects of production, above all the issue of the different time profile of use of the production elements.*

***Keywords:*** *ICT, Utilization, Profile, Qualitative*

## 1. INTRODUCTION

Information and Communications Technology (ICT) is the hardware and software that enables data to be digitally processed, stored and communicated. ICT can be used to access, process, manage and present information; model and control events; construct new understanding; and communicate with others.

Information and Communications Technology, an interdisciplinary domain, focuses on providing with the tools to transform their learning and to enrich their learning environment. The knowledge, skills and behaviors identified for this domain enable to:

i. Develop new thinking and learning skills that produce creative and innovative insights.
ii. Develop more productive ways of working and solving problems individually and collaboratively.
iii. Create information products that demonstrate their understanding of concepts, issues, relationships and processes.
iv. Express themselves in contemporary and socially relevant ways.
v. Communicate locally and globally to solve problems and to share knowledge.
vi Understand the implications of the use of ICT and their social and ethical responsibilities as users of ICT.

### 1.1 Usage of Computer in Small Scale Industries

As computers have become inseparable from the business activities nowadays and most of the modern Information and Communication Technologies used in the business are mainly computer based, the study of the usage of computer has become a vital one. The level of computer usage in the enterprises can be analyzed from the years of computer usage in the business, Number of computers used, internet hours subscribed and used in a year.

The computer software applications are very much helpful in all the fields to complete a job quickly and accurately. It will be the basis for the concept 'Management by Objectives'. The level of software applications used in various routines in the Small Scale Enterprises can be analyzed from the personal administration software, engineering applications, purchase systems, customer billing, sale applications order entry/ point of sale, production inventory, pay bill preparation, accounting systems, data base software, spread sheets, and word processing applications.

## 2. OBJECTIVES

The objectives of the present study are given as follows:

i. To examine the level of computer usage in Small Scale Enterprises.
ii. To determine the number of systems used in different routines of the small scale enterprises.
iii. To analyze the internet hours used through Information and Communication Technologies in the business.

## 3. HYPOTHESES

The following Hypotheses are formed in this study:

i. The respondents do vary with respect to the level of usage of computers in their enterprises.
ii. There is a significant variation with respect to the level of using internet hours in the business routines among the small scale entrepreneurs.

## 4. METHODOLOGY

The present study aims in the utilization of information and communication technologies among the small scale industries in Cuddalore district of Tamil Nadu. Research design is purely and simply the framework or plan for a study that guides the collection and analysis of the data. The research design indicates the methods of research i.e., the method of gathering information and the method of sampling.

The Government of Tamilnadu has identified the taluks of Tamil Nadu as Industrially Developed, Industrially Backward and Industrially Most Backward according to the degrees of facilities available to establish and run the Small Scale Industries successfully. Hence the samples have been collected from all the three areas Developed, Backward and Most Backward for this study.

## 5. DATA COLLECTION

The investigator personally distributed the questionnaires to each small scale industries of the randomly selected sample. They were requested to answer the items in the booklet as per the instructions provided at the beginning of each questionnaire. Confidentiality of response was assured. The questionnaires were collected by the investigator from the owners and managers. The responses were scored as per the scoring key of the respective questionnaire. Then the results were tabulated, analyzed and discussed.

## 6. DATA ANALYSIS AND DISCUSSION

### 6.1 Distribution of Business According to the Years of Computer Usage

The data in Table 1 indicate the distribution of business according to the years of computer usage. Out of 326 respondents, 31.9% are using computers less than 2 years, followed by 29.4 % are for 2-4years, 27.0% are for 6-8 years and 1.8 % are for 8-10 years.

**Table 1 Distribution of Business According to the Years of Computer Usage**

| Characteristics of Business | | Years of Computer Usage | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | | Less than 2 Years | 2-4 Years | 4-6 Years | 6-8 Years | 8-10 Years | More than 10 Years | |
| Area of Business | Developed | 35 | 30 | 35 | 5 | 2 | 8 | 115 |
| | Backward | 11 | 8 | 6 | - | - | 2 | 27 |
| | Most Backward | 6 | 10 | 3 | 1 | 1 | - | 21 |
| Nature of Business | Manufacturing | 3 | 2 | 12 | - | 1 | 4 | 22 |
| | Retail& wholesale | 18 | 14 | 10 | 4 | - | 2 | 58 |
| | Service | 26 | 29 | 19 | 2 | 2 | 4 | 82 |
| | Finance | 4 | - | 1 | - | - | - | 5 |
| | Others | 1 | 3 | 2 | - | - | - | 6 |
| Total | | 104 | 96 | 88 | 12 | 6 | 20 | 326 |

### *6.1.1 Area of Business*

Firms with less than 2 years and 4-6 years of computer usage are equally found more (30.4) in Developed area and firms with less than 2 years are found large (40.7) in the Backward area and firms with 2-4 years computer usage are seen high (47.6) in the most Backward area.

The ANOVA two way model is applied for further discussion in Table 2 the computed values are 3.353993 and 8.726891, which are greater than their tabulated values at 5% level of significance in between columns and in between rows. Hence the variations in the years of computer usage and the Area of Business are statistically identified as significant.

It could be seen clearly from the above discussion that the firms with less than 2 years of computer usage are found more in Developed and Backward area whereas the firms with 2-4 years of usage are found high in most backward area.

**Table 2 Two-way ANOVA**

| Source of Variation | Sum of Square | Degrees of Freedom | Mean Square | F-Ratio | F-Crit.Value |
|---|---|---|---|---|---|
| Between Columns | 3547.778 | 5 | 709.5566 | 3.353992 | 3.3258 |
| Between Rows | 3692.444 | 2 | 1846.222 | 8.726891 | 4.1028 |
| Error | 2115.556 | 10 | 211.5556 | - | - |
| Total | 9355.778 | 17 | - | - | - |

### *6.1.2 Nature of Business*

In manufacturing, firms with 4-6 years of computer usage are seen large (54.5) whereas in retail & wholesale, firms with less than 2 years are seen high (37.5). in the service, firms with 2-4 years of computer usage are found more (35.4). The finance is occupied more (80.0) by the firms with less than 2 years of computer usage and the firms with 2-4 years of computer usage run half of the firms in the other business.

The ANOVA two way model is applied for further discussion in Table 3 the computed values are 3.437029, 5.730893, which are greater than their tabulated values at 5% level of significance in between columns and in between rows. Hence the variations in the years of computer usage and the Nature of Business are statistically identified as significant.

Hence it is very clear from the above discussion that the firms with less than 2 years are found more in manufacturing, retail & whole sale, and finance whereas the firms with 2-4 years of computer usage are found more in the service and other business.

**Table 3 Two-way ANOVA**

| Source of Variation | Sum of Square | Degrees of Freedom | Mean Square | F-Ratio | F-Crit.Value |
|---|---|---|---|---|---|
| Between Columns | 2128.667 | 5 | 425.7333 | 3.437029 | 2.7109 |
| Between Rows | 2839.467 | 4 | 709.8667 | 5.730893 | 2.8661 |
| Error | 2477.333 | 20 | 123.8667 | - | - |
| Total | 7445.467 | 25 | - | - | - |

## 6.2 Distribution of Business According to the Number of Systems Used

**Table 4 Distribution of Business According to the Number of Systems Used**

| Characteristics of Business | | Number of System used | | | | Total |
|---|---|---|---|---|---|---|
| | | Single | 2-5 | 6-10 | More than 10 | |
| Area of Business | Developed | 40 | 60 | 7 | 8 | 115 |
| | Backward | 4 | 15 | 7 | 1 | 27 |
| | Most Backward | 10 | 8 | 3 | 0 | 21 |
| Nature of Business | Manufacturing | 2 | 18 | 2 | 0 | 22 |
| | Retail& wholesale | 24 | 23 | 0 | 1 | 48 |
| | Service | 21 | 38 | 15 | 8 | 82 |
| | Finance | 4 | 1 | 0 | 0 | 5 |
| | Others | 3 | 3 | 0 | 0 | 6 |
| Total | | 108 | 166 | 34 | 18 | 326 |

The data indicate the distribution of business according to the number of systems used. Out of 326 respondents 50.9% are having 2-5 systems followed by 33.1% are having single systems, 10.4% having 6-10 systems and 5.5% are having more than 10 systems.

### *6.2.1 Area of Business*

Business with 2-5 systems are large in number (52.2) in developed area and in backward ares more business (55.6) are found with 2-5 computers whereas in Most Backward area business with single system are seen high (47.6).

The ANOVA two way model is applied for further discussion in Table 5. The computed value is 2.353598 is less than its tabulated value at 5% level of significance in between columns and the computed value is 4.151233 is greater than its tabulated value at 5% level of significance in between rows. Hence the variations in the number of systems used are statistically identified as insignificant and the variations in the Ares of Business are statistically identified as significant.

It is clearly seen from the above discussion that 2-5 systems are being used highly in Developed and Backward areas single system is used more in Most Backward area.

**Table 5 Two-way ANOVA**

| Source of Variation | Sum of Square | Degrees of Freedom | Mean Square | F-Ratio | F-Crit.Value |
|---|---|---|---|---|---|
| Between Columns | 4710.333 | 3 | 1570.111 | 2.353598 | 4.7571 |
| Between Rows | 5538.667 | 2 | 2769.333 | 4.151233 | 5.1433 |
| Error | 4002.667 | 6 | 667.1111 | - | - |
| Total | 14251.67 | 11 | - | - | - |

### *6.2.2 Nature of Business*

The firms using 2-5 systems are found more in manufacturing (81.8) and service (47.9). Firms using single system are found high in finance sector (80.0). Half of the firms (50.0) in retail & Wholesale and other business are using single system.

The ANOVA two way model is applied for further discussion in Table 6. The computed values are 5.164839 and 5.837719, which are greater than their tabulated values at 5% level of significance in between rows. Hence the variations in the Nature of systems used and the Nature of Business are statistically identified as significant.

It is clearly seen from the above said discussion that the Manufacturing, Service are having more firms with 2-5 systems whereas the finance sector is having single systems at large. Half of the business in retail & wholesale and other business are using Single system.

**Table 6 Two-way ANOVA**

| Source of Variation | Sum of Square | Degrees of Freedom | Mean Square | F-Ratio | F-Crit.Value |
|---|---|---|---|---|---|
| Between Columns | 2826.2 | 3 | 942.0667 | 5.164839 | 3.4903 |
| Between Rows | 4259.2 | 4 | 1064.8 | 5.837719 | 3.2592 |
| Error | 2188.8 | 12 | 182.4 | - | - |
| Total | 9274.2 | 19 | - | - | - |

## 6.3 Distribution of Business According to the Internet Hours Used

The data indicate the distribution of business according to the internet hours used. Out of 326 respondents 34.2% use less than 100 hours followed by less than 50 hours (25.2), less than 250 hours (14.1), less than 25 hours (13.5), less than hours (8.6) and less than 500 hours (4.3).

### *6.3.1 Area of Business*

Firms using less than 100 hours are seen high in all the three areas and among them it is found high (38.1) in Most Backward area. Firms with less than 50 hours are found in the second position and amoung them these firms are seen more (29.6) in the backward area.

**Table 7 Distribution of Business According to the Internet Hours Used**

| Characteristics of Business | | Subscription of Internet Hours | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | | 25 Hrs | 30 Hrs | 50 Hrs | 100 Hrs | 250 Hrs | 500 Hrs | |
| Area of Business | Developed | 6 | 1 | 2 | 63 | 28 | 15 | 115 |
| | Backward | 5 | - | 1 | 14 | 6 | 1 | 27 |
| | Most Backward | 1 | 1 | 2 | 12 | 4 | 1 | 21 |
| Nature of Business | Manufacturing | 2 | - | 1 | 7 | 9 | 3 | 22 |
| | Retail& Wholesale | 6 | 1 | 3 | 27 | 10 | 1 | 48 |
| | Service | 4 | - | 1 | 46 | 18 | 13 | 82 |
| | Finance | - | - | - | 4 | 1 | - | 5 |
| | Others | - | 1 | - | 5 | - | - | 6 |
| Total | | 24 | 4 | 10 | 178 | 76 | 34 | 326 |

The ANOVA two way model is applied for further discussion in Table 8. The computed values are 3.936653 and 16.5498, which are greater than their tabulated values at 5% level of significance in between columns and in between rows. Hence the variations in the Internet hours used and the Area of Business are statistically identified as significant.

It is clearly seen from the above discussion that the firms with less than 100 hours used are found high in all three areas and among them it is top in Most Backward area and the firms with less than 50 hours are seen second position in Backward area.

**Table 8 Two-way ANOVA**

| Source of Variation | Sum of Square | Degrees of Freedom | Mean Square | F-Ratio | F-Crit.Value |
|---|---|---|---|---|---|
| Between Columns | 2195.778 | 5 | 439.1556 | 3.936653 | 3.3258 |
| Between Rows | 3692.444 | 2 | 1846.222 | 16.5498 | 4.1028 |
| Error | 1115.556 | 10 | 111.556 | - | - |
| Total | 7003.778 | 17 | - | - | - |

### *6.3.2 Nature of Business*

Firms with less than 100 hours used are found top (42.2) among the service sector where as less than 250 hours used are found high (31.8) in manufacturing. Less than 100 and less than 50 hours are equally seen high (40.0) in finance. Less than 50 hours are found more (33.3) in the other business.

The ANOVA two way model is applied for further discussion in Table 9. The computed value is 2.634231, which is less than its tabulated value at 5% level of significance in between columns and the computed value is 7.096774, which is greater than its tabulated value at 5% level of significance in between rows. Hence the variations in the Internet hours used are statistically identified as insignificant and the variations in the Nature of Business are statistically identified significant.

It is clearly seen from the above discussion that the service is seen at the top in using less than 100 hours and manufacturing is seen high in using less than 250 hours of interest.

**Table 9 Two-way ANOVA**

| Source of Variation | Sum of Square | Degrees of Freedom | Mean Square | F-Ratio | F-Crit.Value |
|---|---|---|---|---|---|
| Between Columns | 1317.467 | 5 | 263.4933 | 2.634231 | 2.7109 |
| Between Rows | 2839.467 | 4 | 709.8667 | 7.096774 | 2.8661 |
| Error | 2000.533 | 20 | 100.0267 | - | - |
| Total | 6157.467 | 29 | - | - | - |

## 7. FINDINGS AND CONCLUSIONS

The findings on business according to the years of computer usage reveal the following facts:

The firms with less than 2 years of computer usage are found more in Developed and Backward areas. The firms with 2-4 years of usage are found high in Most Backward area. The firms with less than 2 years are found more in Manufacturing, Retail & wholesale, and Finance whereas the firms with 2-4 computers are found more in the Service and Other Business.

The findings on Business according to the number of Systems used reveal the the following fact:

2-5 system are being used highly in developed and Backward areas and single system is used more in Most Backward areas. Manufacturing, Service sectors have more firms with 2-5 systems wheares in Finance Sector has single system at large. Half of the business in retail & wholesale and other business are using single system.

The findings on business according to the Internet hours used reveal the following facts.firms with less than

100 hours used are found high in all three areas and among them it is top in Most Backward and the firms with less than 50 hours are seeing second position in Backward area. The Service sectors are seen top in using less than 100 hours and Manufacturing is seen high in using less than 250 hours of the internet.

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# Marketing of Library and Information Products and Services in Engineering College Libraries: A Case Study of Bannari Amman Institute of Technology Library

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**Abstract**

*Information products and services in a multiplicity of formats have made libraries and information centres more competitive and alert. Libraries are being subjected to significant pressures from the information revolution. The challenges of budget cuts, increased user base, the rapid growth of material, rising costs, networking demands, competition by database vendors, and complexity in information requirements are forcing the professionals to adopt marketing to improve the management of library and information centres. Marketing is the process of planning and executing the conception, pricing, promotion and distribution of goods, services and ideas to create exchanges with target groups that satisfy customers and organizational objectives. Under the umbrella term marketing, concepts like building customer relationships, branding and corporate identity, marketing communications, price and pricing policy, collecting marketing data and marketing strategy and planning are being studied. This paper deals with the case study of marketing of library and information products and services at Bannari Amman Institute of Technology.*

***Keywords:*** *Information Products, Information Services, Marketing Communications*

## 1. INTRODUCTION

Information is an indispensable factor for promoting the development of society. The present age is rightly characterized as the age of information, where it success in any activity is based on the amount and accuracy of information available. The fact that information is a key resource for the progress and development of a nation is nothing but the socio-economic, cultural, and political development of its population. Information is a commodity or economic good of worldwide significance, which contributes to the national economy. Information has become a commodity that people buy. The criteria that determine power have shifted from industry ownership to the information ownership, as the global economy has shifted from industry-based to information-based.

The quality and quantity of the information resources of the country are two of the parameters for development. Countries with adequate information infrastructure and information technology can create artificial demand for superfluous products and use it as a weapon against the economy of other countries. Information is an indispensable input for technological and economic development. It is a negotiable product that moves about in international markets. In today's international developing economies, a country that is incapable of providing information to its citizens will lose autonomy and be at the mercy of developed countries for information.

## 2. INFORMATION MARKETING IN ENGINEERING COLLEGE LIBRARIES

Narayana points out that the, "survival of a library depends among other things on its image in the minds of the users and the fund allocators"[1]. This image should be the outcome of the quality and effectiveness of the services, the ability to anticipate the desires and requirements of actual and potential users and their fulfillment. Marketing is the instrument through which these library objectives can be fulfilled.

Vishwa Mohan, Srinivas, and Shakuntala observe that marketing is essential, because those who lack information may not even be aware of this need [2]. Information marketing by engineering colelge libraries in India is essential in order to:

i Promotion of the use of information resources;
ii Create perception of need and thereby create demand;
iii Ensure the optimum use of information.
iv Improve the image and status of the libraries and library professionals.
v Tackle the problems of rising costs of reading materials, journals, and databases;
vi Cope with the information explosion;
vii Introduce cutting-edge information technology systems in library services;
viii Balance shrinking funds;
ix Save libraries from devaluation
x Save libraries from declining reader-support;
xi Uphold the dictum that information is power.

## 3. INFORMATION MARKETING IN BANNARI AMMAN INSTITUTE OF TECHNOLOGY LIBRARY

Marketing is an integral part of library service, because it has to do with basic principles of librarianship i.e. to develop good collection and user-oriented services. Bannari Amman Institute of Technology Library (BITL) is using most of the skills of information marketing to satisfy the needs of its clientele.

The Bannari Amman Institute of Technology Library has a two-storeyed air-conditioned building with rich collection of books, journals, back volumes, and digital library with 40 computers. It has currently developed a spectacular library web portal and institutional repository using Greenstone Digital Library Software and it is also involved in a research project sponsored by DSIR, Govt. of India. It has organized various short-term courses for the benefit of students and also for unemployed youth to get self-employment. It is an institutional member in British Council Library, DELNET, and AICTE-INDEST Consortium, New Delhi.

BITL uses the following methods to design a market mix for ensuring a catalytic role in the modern information community:

i Product development;
ii Physical distribution of information;
iii Promotion of products and services; and
Price.

### 3.1 Product Development

A product is anything that can be offered to a market to satisfy a need. A large assortment of materials, services, and programmes constitute the library's product. A library offers goods, either tangible (e.g. books and Internet access) or intangible (e.g. personal assistance, or value of the library as a premier community institution).

De Aze says that, "products and services which provide benefits for users and which answer users' most important needs are the core business of the library and information service" [3].

Seetharama considers that, without products no organization has reason to exist, there is no task to perform; hence product is the most important factor in marketing [4], and Weingand asserts that, the library's product can be arranged within a three dimensional structure of the product mix, product line, and product item [5]. Programmes of the library are a product line where product items consist of bibliographic instruction, displays, and lectures. BITL is ready to develop the products to meet the needs expressed by the users. The library has automated its functions with the Library Automation software called Smart Library. The bibliographic database of the library collection is available online, with barcodes for circulation, and rare archival and special collections materials have begun to be digitized and stored on CD and the Web to enable scholars in Tamil Nadu and in other countries to access these resources.

#### *3.1.1 Online Public Access Catalogue (OPAC)*

The searchable digital catalogue of library holdings is available on the campus-wide intranet and on the Web at: http://bitweb/library

#### *3.1.2 Digital Information Services*

The library offers access to reference materials such as general and subject encyclopedias.

#### *3.1.3 Searchable Full Text E-journals and Databases*

BITL provides the access to searchable full text of thousands of e-journals and databases through the AICTE-INDEST consortium, providing access to full text e-journals on science, engineering, technology and management from publishers/vendors such as: ASCE, ASME, IEL online, and Springer journals etc. on the campus-wide intranet.

In addition to the above, the BITL website provides links to trials and free access to thousands of e-journals and databases in 25 broad subjects. This will provide the best current and archival periodical literature from all over the world to the engineering community and mitigate the severe shortage of periodicals faced by engineering college libraries for many years, due to the widening gap between the demand for literature and the limits of available resources.

#### *3.1.4 DELNET Services*

BITL is a member of Developing Libraries Network (DELNET). DELNET offers access to web-based databases. BITL uses the Interlibrary Loan (ILL) system to make ILL requests from a union catalogue of books (more than one million records), periodical article database, and the database of thesis and dissertations. BITL is also a member of British Council Library, Chennai and video cassettes on various topics are being screened to the students regularly.

#### *3.1.5 Library Website*

The library website is to guide to the physical facilities that delivers detailed information about the library as well as providing access to all computer based services. BITL Website www.lib.bitsathy.ac.in also provides links to reference sources, tutorials, library projects, and presentations.

#### *3.1.6 National Journal of Library Science*

The BITL publishes Indian Journal of Information Science and Services (IJISS) a half yearly refereed research journal on Library science and so far six issues have been released.

### 3.2 Physical Distribution of Information

Corrall and Brewerton describe acquisition as getting the raw materials and sending that out. To fill in the gaps in collection, the library has exchange relations with other engineering colleges, and IITs all over India and a few Indian universities [6]. Of course, the library also lends material to clients, locally and through ILL. There is a reading room that holds 100 students that is open for 18 hours a day. Nearly 400 students at a time can use the stacks.

### 3.3 Promotion of Products and Services

BITL users can be divided into three segments: individuals, including post-graduate students, research scholars, faculty members, research associates and assistants, project assistants, and non-teaching staff; corporate and institutional members; and other libraries. Each segment has different needs. The services that the library offers must be made known to as many users as possible, so that they think of the library when they need information. The promotion plans used by BITL are discussed below.

#### *3.3.1 Publicity*

Wide publicity is given to BITL products and services by various advertising methods. For example, local newspapers and magazines are used for dissemination of information related to the various programmes and activities being performed by the library including the specific ventures such as conducting of the workshops/ seminars/ refresher courses. The BITL conducts extension activities on various occasions such as National Library Week, Year of Books Programme, etc in order to improve upon the image of the library and invite the attention of the large community of the users of the library. Wider publicity is given for all the training programmes being conducted by the library in the field of information technology, library automation and networking, which is the most crucial and challenging job before the libraries in the modern world.

### 3.4 Price

Price is important in marketing in the world of information as it is elsewhere. Kotler describes the 4 Ps of marketing: product, place, pricing, and promotion. He

argued that the 4 Ps are a seller's paradigm and should be replaced with the 4 Cs of the buyer: customer value, user convenience, user cost, and user communication. Price can be expressed in currency; however, it can use goods or services [7]. In the library, price can be used to express the value of information services: a physical product like a CD-ROM or a fee of a service or membership. Price is used to balance supply and demand, to be a stimulus, and to distribute income. BITL is collecting no fees from the students as well as the faculty and research scholars.

## 4. CONCLUSION

Libraries are being forced to explore the possibilities of cost recovery and profit potentials for their survival. Libraries must change according to changing market conditions. Libraries need to achieve an imaginative design of service and products, and develop communication methods and a feedback mechanism to improve service. Though the concept of charging for information, particularly in developing countries like India, is a difficult task, libraries must consider what funds that can be generated this way.

It must be carefully considered which services can have only a token price, which one cover a reasonable proportion of cost, and which can generate revenues. The impact of the information technology and the adoption of the marketing approach will help improve services for users and enhance the reputation of library and information services and professionals. Within 14 years of its establishment, BITL has found a place among the better known engineering college libraries in India. After having been given a special appreciation by the National Board Accreditation (NBA) & NAAC of India, the library is poised to work with more zeal and dynamism to earn more on its services and achieve a special status in academic librarianship. BITL will grow and advance by watching user response. As demands become increasingly complex, a strong commitment to marketing provides a means for the library to remain viable.

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# Indian Journal of Information Science and Services (IJISS)

(ISSN: 0973-8967)
(A half-yearly refereed research journal on Library and Information Science)

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

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

Volume 4 Number 1 January - July 2010





Published by

Learning Resource Centre
BANNARI AMMAN INSTITUTE OF TECHNOLOGY
Sathyamangalam - 638 401 Erode District Tamil Nadu India
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