

Libraries in Chennai on the Threshold of the Third Millennium: Information and Communication Technology Issues and Challenges

B. Ramesh Babu*, P. Nageswara Rao** and K. Baskar***

*University of Madras, 22/20B Thangavelu Pillai Garden, First Street, Old Washermen
Pet, Chennai - 600 021
E-mail: beeraka52@yahoo.com

**Society for Electronic Transactions and Security (SETS), M.G.R. Knowledge City
CIT Campus, Taramani, Chennai - 600 113
E-mail: nageswararaop77@gmail.com

***Madras School of Economics, Gandhi Mandapam Road, Kotturpuram, Chennai - 600 025
E-mail: baskar@mse.ac.in

ABSTRACT

This paper presents the survey of libraries located in and around Chennai comprising of academic (government and private universities), public and special. The purpose of this paper is to present the state-of-the-art of the libraries and the specific objectives are to survey and compare the major academic, public and special libraries in and around Chennai with regard to the collection, manpower, resources (print and e-resources), and information and communication technology (ICT)-based services, etc; to identify the issues and challenges being faced by the librarians and to offer suggestions and recommendations for the improvement of the libraries. A total of 32 libraries comprising of 9 government universities, 13 private universities, 3 public and 7 special have been considered for this survey. The data has been collected during January and mid-February 2015 based on a structured questionnaire. There exists variation in the infrastructure, print and e-resources and services (traditional and ICT-based) offered in the libraries of those institutions. Based on the results of the survey, a few suggestions and recommendations are offered.

Keywords: Libraries, government university libraries, private libraries, public libraries, special libraries, survey method, Chennai

1. INTRODUCTION

Education and libraries have been inseparable since the dawn of civilization and their co-existence has been attributed to many landmarks in the knowledge creation and dissemination. In the history of India, it is observed that Nalanda, Takshasila and Vikramasila universities and the *gurukula* type of institutions highly depended on libraries which were earlier known by '*grantha bhandar*' or '*Granthasala*'. Libraries like some other social institutions have passed through periods of recognition, lull, encouragement and neglect followed by slow growth, decay and then crisis. However, the library scene in the post-independence India was by all standards a golden period. More and more libraries were established triggering chain of new developments¹. The library in an educational institution is now considered as actively participating intermediary between the learners and the vast amount of sources. It can be stated that, mutuality between education and

the libraries have been perpetuating since people have become information literate and perceived the sense of learning. Indian library and information sector can be divided into five major areas as, (a) national library sector; (b) academic library sector; (c) special and scientific library sector, (d) government library sector; (e) public library sector. Due to various reasons the scientific and special library sector is much more developed and modernised than the other four sectors². There are academic institutions imparting education from under graduation to postgraduation and doctoral level programmes both in general, professional and technical fields under government, private, and government-aided institutions. Accordingly, there exists variation in the infrastructure, resources and services offered in the libraries of those institutions. The libraries are changing in response to changes in the learning and research environment and also dynamic changes in the information use behaviour of users.

2. LITERATURE REVIEW

A large number of studies have been conducted in the survey of libraries in different parts of the globe and more particularly in India. Since the present survey is concerned with the study of libraries in and around Chennai, literature survey was done of libraries in Tamil Nadu. While Ashok Kumar & Ramesh Babu³ has surveyed the public libraries in Tamil Nadu with respect to district central libraries, Nageswara Rao & Ramesh Babu⁴ and Nageswara Rao⁵ conducted a survey on autonomous college libraries, their services, facilities and networking aspects. Vinayagamooty, *et al.*⁶ and Ramesh Babu & Subramaniyan⁷ surveyed engineering educational institutional libraries in Chennai. All these studies focused on the state-of-the-art of libraries in Tamil Nadu and recommended for the complete automation, provision of e-services, manpower development and networking.

3. OBJECTIVES

The objectives of the study are:

- Survey and compare the major academic, public and special libraries in and around Chennai with regard to print and e-collection; manpower; resources—traditional and electronic, and information and communication technology (ICT)-based services, etc.
- Identify the issues and challenges being faced by the librarians

- Offer suggestions and recommendations for the improvement of the libraries

4. METHODOLOGY

The study uses survey approach for which a questionnaire was designed (Appendix-A). The data was collected during January and mid-February 2015. Although there are number of libraries in and around Chennai, for the purpose of the study, only 32 prominent libraries have been selected to examine the current status and identify the issues and challenges, with special emphasis on information technology, being faced by the libraries. The data has been analysed using SPSS. The state-of-the-art of the libraries surveyed in and around Chennai has been presented in Appendix-B.

5. DATA ANALYSIS

5.1 Classification of Libraries by Nature of Management

Out of 32 libraries surveyed, 13 (40.63 %) belong to private universities, followed by 9 (28.13 %) to government universities, 7 (21.87 %) special and 3 (9.37 %) public libraries.

5.2 Year of Establishment

Table 1 shows the year of establishment of the libraries, 12 (37.50 %) have been established after 2000, followed by 11 (34.37 %) between 1976 and 2000 because of privatisation of higher education,

Table 1. Libraries by the year of establishment, physical facilities and manpower

S. No.		Government universities (n=9)	Private universities (n=13)	Public libraries (n=3)	Special libraries (n=7)	Total (n=32)
Year of establishment						
1.	Before 1950	1 (3.12)	0 (0.00)	2 (6.25)	2 (6.25)	5 (15.63)
2.	Between 1951 and 1975	2 (6.25)	0 (0.00)	0 (0.00)	2 (6.25)	4 (12.50)
3.	Between 1976 and 2000	6 (18.75)	2 (6.25)	0 (0.00)	3 (9.37)	11 (34.37)
4.	After 2000	0 (0.00)	11 (34.37)	1 (3.12)	0 (0.00)	12 (37.50)
Total		9 (28.13)	13 (40.63)	3 (9.37)	7 (21.87)	32 (100)
Provision of physical facilities in Sq. ft						
1.	Below 10,000	3 (9.37)	1 (3.12)	1 (3.12)	7 (21.87)	12 (37.50)
2.	Between 10,001 and 25,000	2 (6.25)	6 (18.75)	0 (0.00)	0 (0.00)	8 (25.00)
3.	Between 25,001 and 50,000	2 (6.25)	3 (9.37)	0 (0.00)	0 (0.00)	5 (15.63)
4.	Above 50,000	2 (6.25)	3 (9.37)	2 (6.25)	0 (0.00)	7 (21.87)
Total		9 (28.13)	13 (40.63)	3 (9.37)	7 (21.87)	32 (100)
Provision of manpower—No. of personnel						
1.	Below 5	1 (3.12)	5 (15.63)	0 (0.00)	6 (18.75)	12 (37.50)
2.	Between 6 and 10	3 (9.37)	6 (18.75)	0 (0.00)	1 (3.12)	10 (31.25)
3.	Between 11 and 15	3 (9.37)	2 (6.25)	0 (0.00)	0 (0.00)	5 (15.63)
4.	Between 16 and 20	1 (3.12)	0 (0.00)	0 (0.00)	0 (0.00)	4 (12.50)
5.	Above 20	1 (3.12)	0 (0.00)	3 (9.37)	0 (0.00)	1 (3.12)
Total		9 (28.13)	13 (40.63)	3 (9.37)	7 (21.87)	32 (100)

especially, Engineering and Medical fields. Prior to independence, there was only 1 university library (University of Madras) and 2 public and special libraries each.

5.3 Provision of Physical Facilities

It is observed from Table 1 that 12 libraries are housed 10,000 sq.ft space or less, 8 libraries an area between 10001 and 25000 sq.ft. However 7 libraries function in more than 50,000 sq.ft area, out of which are 2 are public libraries.

5.4 Provision of Manpower

The provision of professionally trained manpower is not satisfactory as reflected in Table 1. It is to note that the public libraries are in a better position since all the three libraries surveyed have more than 20 trained staff, when compared to the other libraries.

5.5 Quantum of Collection (Print)

The quantum of print collection is satisfactory as many of the libraries (Table 2) have built a feasible

collection depending on the life span of the libraries. The three government university libraries, two public and private university libraries have more than one lakh books each. Nine private universities, one each public and special libraries subscribes more than 100 national journals. Similarly, 3 government and 5 private university libraries subscribe more than 100 international journals. However, the non-print collection is far from satisfactory which is essential in the present e-environment.

5.6 Quantum of E-resources

A majority of the libraries (20) don't have weeding out policy to withdraw the unwanted collection (Table 3).

5.7 Technical Processing

While Dewey Decimal Classification (DDC) has been used in 16 libraries, Colon Classification (CC) is used in five libraries, and Universal Decimal Classification (UDC) in 4 libraries. It is interesting to note that, one each public and special library do not use any scheme of classification. Similarly 20 libraries

Table 2. Quantum of collection (print) and weeding out policy

S. No.	Quantum of collection	Government universities (n=9)	Private universities (n=13)	Public libraries (n=3)	Special libraries (n=7)
Books					
1.	Below 25,000	2 (6.25)	1 (3.12)	0 (0.00)	3 (9.37)
2.	Between 25,001 and 50,000	2 (6.25)	2 (6.25)	1 (3.12)	2 (6.25)
3.	Between 50,001 and 75,000	1 (3.12)	4 (12.50)	0 (0.00)	1 (3.12)
4.	Between 75,001 and 1,00,000	1 (3.12)	4 (12.50)	0 (0.00)	1 (3.12)
5.	Above 1,00,000	3 (9.37)	2 (6.25)	2 (6.25)	0 (0.00)
Total		9 (28.13)	13 (40.63)	3 (9.37)	7 (21.87)
National journals					
1.	Below 25	5 (15.63)	0 (0.00)	0 (0.00)	2 (6.25)
2.	Between 26 and 50	0 (0.00)	1 (3.12)	1 (3.12)	3 (9.37)
3.	Between 51 and 75	3 (9.37)	3 (9.37)	0 (0.00)	0 (0.00)
4.	Between 76 and 100	1 (3.12)	0 (0.00)	0 (0.00)	1 (3.12)
5.	Above 100	0 (0.00)	9 (28.13)	1 (3.12)	1 (3.12)
Total		9 (28.13)	13 (40.63)	2 (6.25)	7 (21.87)
International journals					
1.	Below 10	3 (9.37)	0 (0.00)	1 (3.12)	5 (15.63)
2.	Between 11 and 25	2 (6.25)	2 (6.25)	0 (0.00)	0 (0.00)
3.	Between 26 and 50	1 (3.12)	1 (3.12)	0 (0.00)	1 (3.12)
4.	Between 51 and 100	0 (0.00)	5 (15.63)	0 (0.00)	0 (0.00)
5.	Above 100	3 (9.37)	5 (15.63)	0 (0.00)	0 (0.00)
Total		9 (28.13)	13 (40.63)	1 (3.12)	6 (18.75)
Back volumes					
1.	Below 25,000	5 (15.63)	13 (40.63)	0 (0.00)	6 (18.75)
2.	Between 25,001 and 50,000	3 (9.37)	0 (0.00)	0 (0.00)	0 (0.00)
3.	Between 50,001 and 75,000	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
4.	Between 75,001 and 1,00,000	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
5.	Above 1,00,000	1 (3.12)	0 (0.00)	1 (3.12)	0 (0.00)
Total		9 (28.13)	13 (40.63)	1 (3.12)	6 (18.75)
Weeding out policy					
1.	Yes	4 (12.50)	1 (3.12)	1 (3.12)	6 (18.75)
2.	No	5 (15.63)	12 (37.51)	2 (6.25)	1 (3.12)
Total		9 (28.13)	13 (40.63)	3 (9.37)	7 (21.87)

Table 3. Quantum of e-resources

S. No.	Quantum of e-resources	Government universities (n=9)	Private universities (n=13)	Public libraries (n=3)	Special libraries (n=7)
Audio/ Video/CD/DVD Materials					
1.	Below 100	1 (3.12)	0 (0.00)	1 (3.12)	2 (6.25)
2.	Between 101 and 500	3 (9.37)	3 (9.37)	0 (0.00)	4 (12.50)
3.	Between 501 and 1000	0 (0.00)	4 (12.50)	1 (3.12)	0 (0.00)
4.	Between 1001 and 5000	0 (0.00)	4 (12.50)	0 (0.00)	0 (0.00)
5.	Above 5000	1 (3.12)	2 (6.25)	0 (0.00)	0 (0.00)
Total		5 (15.63)	13 (40.63)	2 (6.25)	6 (18.75)
E-books					
1.	Below 100	2 (6.25)	0 (0.00)	0 (0.00)	1 (3.12)
2.	Between 101 and 500	2 (6.25)	0 (0.00)	0 (0.00)	0 (0.00)
3.	Between 501 and 1000	1 (3.12)	2 (6.25)	0 (0.00)	0 (0.00)
4.	Between 1001 and 5000	1 (3.12)	8 (25.00)	1 (3.12)	0 (0.00)
5.	Above 5000	0 (0.00)	3 (9.37)	0 (0.00)	0 (0.00)
Total		6 (18.75)	13 (40.63)	1 (3.12)	1 (3.12)
E-Journals					
1.	Below 100	1 (3.12)	0 (0.00)	0 (0.00)	0 (0.00)
2.	Between 101 and 500	0 (0.00)	5 (15.63)	0 (0.00)	0 (0.00)
3.	Between 501 and 1000	0 (0.00)	2 (6.25)	0 (0.00)	0 (0.00)
4.	Between 1001 and 5000	2 (6.25)	4 (12.50)	0 (0.00)	0 (0.00)
5.	Above 5000	4 (12.50)	2 (6.25)	0 (0.00)	0 (0.00)
Total		7 (21.87)	13 (40.63)	0 (0.00)	0 (0.00)

under survey use Anglo-American Cataloguing Rules (AACR), followed by 5 using Classified Catalogue Code (CCC). It is analysed that one special library doesn't use any catalogue code (Table 4).

5.8 Library Automation Software Used

Eleven different library automation software packages are in use among the libraries surveyed. Among them, AUTOLIB (7) and SOUL in 4 libraries are used and rest of the libraries follow the other packages. However, one each public and special library don't use any software package (Table 5).

Table 4. Technical processing

S. No.	Technical processing	Government universities (n=9)	Private universities (n=13)	Public libraries (n=3)	Special libraries (n=7)
Scheme of Classification					
1.	CC	5 (15.63)	0 (0.00)	0 (0.00)	5 (15.63)
2.	DDC	2 (6.25)	12 (37.51)	2 (6.25)	0 (0.00)
3.	UDC	2 (6.25)	1 (3.12)	0 (0.00)	1 (3.12)
4.	Others	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Total		9 (28.13)	13 (40.63)	2 (6.25)	6 (18.75)
Code of Cataloguing					
1.	AACR	4 (12.50)	13 (40.63)	2 (6.25)	1 (3.12)
2.	CCC	5 (15.63)	0 (0.00)	0 (0.00)	5 (15.63)
3.	Others	0 (0.00)	0 (0.00)	1 (3.12)	0 (0.00)
Total		9 (28.13)	13 (40.63)	3 (9.37)	6 (18.75)

5.9 Digitisation Initiatives

In this age of digitisation, when libraries are transforming themselves as digital libraries, 27 libraries under the study are in the initial stages of digitisation (Table 6).

5.10 Provision of Services

Almost all the libraries provide traditional services. Similarly, a majority of the libraries offer OPAC/Web

Table 5. Library automation software used

S. No.	Name of software	Government universities (n=9)(%)	Private universities (n=13)	Public libraries (n=3)	Special libraries (n=7)
1.	SOUL	4 (12.50)	0 (0.00)	0 (0.00)	0 (0.00)
2.	AUTOLIB	1 (3.12)	6 (18.75)	0 (0.00)	0 (0.00)
3.	KOHA	2 (6.25)	0 (0.00)	1 (3.12)	0 (0.00)
4.	VIRTUA	1 (3.12)	0 (0.00)	0 (0.00)	0 (0.00)
5.	LIBMAN	1 (3.12)	0 (0.00)	0 (0.00)	0 (0.00)
6.	LIBERTY	0 (0.00)	0 (0.00)	1 (3.12)	0 (0.00)
7.	CDS/ISIS	0 (0.00)	0 (0.00)	0 (0.00)	3 (9.37)
8.	LIBSYS	0 (0.00)	1 (3.12)	0 (0.00)	1 (3.12)
9.	In-house	0 (0.00)	2 (6.25)	0 (0.00)	2 (6.25)
10.	ELIMS	0 (0.00)	1 (3.12)	0 (0.00)	0 (0.00)
11.	LIBGENIE	0 (0.00)	3 (9.37)	0 (0.00)	0 (0.00)
Total		9 (28.13)	13(40.63)	2 (6.25)	6 (18.75)

Table 6. Digitisation initiatives

S. No.	Type of library	Digitisation initiatives
1.	Government Universities	9 (28.13)
2.	Private Universities	8 (25.00)
3.	Public Libraries	3 (9.37)
4.	Special Libraries	7 (21.87)
Total		27 (84.37)

OPAC service and database search service. However the other ICT-based services such as ETDs, social networking, e-mail alert and provision of IRs are yet to gain place in the libraries (Table 7).

5.11 Participation in Networks

Table 8 shows the participation in network by the libraries under study. It is almost mandatory that academic libraries shall be part of INFLIBNET and engineering libraries join in NKN, DELNET and INDEST. Similarly, medical libraries in ERMED, agricultural libraries in CERA and the like. But there is no such move for the public and special libraries. The local network, namely, MALIBNET though not effective, but a majority of the libraries in principle are part of that network.

5.12 Issues Faced by Libraries

Total 25 variables have been identified as issues and challenges being faced by the libraries in the present context. Five point scaling technique have been adopted to elicit the respondents opinions as 'Strongly Agree', 'Agree', 'Neither Agree Nor Disagree', 'Disagree' and 'Strongly Disagree' and the results are shown in Table 9. It is observed that there exists variation among the libraries belonging to the different types of libraries in this regard.

While 'Budget Issues/Financial Constraints' has been ranked 'first' (weighted arithmetic mean (WAM)=4.11) by the libraries belonging to government universities, on the other hand the same has been ranked as 'second' by the private university libraries. However 'Collection Development Policy' has been ranked first. While 'Security' is the major challenge for the public libraries as ranked 'first' (WAM=4.67), on the other hand the 'User training/orientation to use e-resources'; Weeding policy; Resource sharing and consortia (WAM=4.86) are the major challenges which were ranked as 'first' by the special libraries.

Further 'Storage Problems' has been ranked 'Second' by the Government University Libraries, on the other hand 'Budget Issues/Financial Constraints' ranked as second by the private university libraries. For Private University Libraries, 'Preservation' 'Interoperability Issues' 'Collection development policy' and 'Lack support from the administration' are the issues ranked as Second (WAM=4.33), on

Table 7. Provision of service

S. No.	Services	Government universities (n=9)	Private Universities (n=13)	Public libraries (n=3)	Special libraries (n=7)
Traditional services offered					
1.	Circulation	9 (28.13)	13 (40.63)	3 (9.37)	3 (9.37)
2.	Reference	9 (28.13)	13 (40.63)	3 (9.37)	7 (21.87)
3.	Reprographic	9 (28.13)	13 (40.63)	3 (9.37)	7 (21.87)
4.	Translation	0 (0.00)	0 (0.00)	2 (6.25)	5 (15.63)
ICT-based services offered					
1.	OPAC/ Web OPAC	9 (28.13)	13 (40.63)	2 (6.25)	4 (12.50)
2.	ETDs	1 (3.12)	1 (3.12)	0 (0.00)	0 (0.00)
3.	Database search	8 (25.00)	10 (31.25)	0 (0.00)	1 (3.12)
4.	E-mail alert	3 (9.37)	0 (0.00)	0 (0.00)	0 (0.00)
5.	Social networking	1 (3.12)	0 (0.00)	0 (0.00)	0 (0.00)
6.	IVRS	0 (0.00)	0 (0.00)	1 (3.12)	0 (0.00)
7.	Institutional repositories	0 (0.00)	9 (28.13)	0 (0.00)	0 (0.00)

Table 8. Participation in networks

S. No.	Participation in networks	Government universities (n=9)	Private universities (n=13)	Public libraries (n=3)	Special libraries (n=7)
1.	INFLIBNET	5	0	0	1
2.	DELNET	1	13	0	1
3.	INDEST	1	12	0	0
4.	MALIBNET	7	11	2	0
5.	ERMED	1	1	0	0
6.	CERA	1	0	0	0
7.	NKN	1	0	0	0

the other hand 'Collection Evaluation' (WAM=4.71) is the 'second' rank by the Special Libraries. It is significant to note that, security has been ranked as first for public libraries, on the other hand the same ranked as 3 by private universities and special libraries, but ranked with 9th position by the government university libraries.

6. SUGGESTIONS AND RECOMMENDATIONS

For libraries in Chennai, the management concerns are becoming as crucial as technical

Table 9. Issues and challenges faced by the libraries under survey

S. No.	Variables	Government university libraries (n=9)						Private university libraries (n=13)						Public libraries (n=3)						Special libraries (n=7)									
		SA	A	NAND	DA	SDA	WAM	Rank	SA	A	NAND	DA	SDA	WAM	Rank	SA	A	NAND	DA	SDA	WAM	Rank	SA	A	NAND	DA	SDA	WAM	Rank
1.	Budget Issues/ Financial Constraints	2	6	1	0	0	4.11	1	5	8	0	0	0	4.38	2	1	2	0	0	0	4.33	5	4	3	0	0	0	4.57	3
2.	Legal issues -copyright/ IPR	2	4	1	2	0	3.67	5	5	5	1	2	0	4.00	4	1	0	1	1	0	3.33	6	3	4	0	0	0	4.43	12
3.	Access (licensing) of e-resources	2	5	0	2	0	3.78	4	3	7	2	1	0	3.92	3	0	1	2	0	0	3.33	6	2	5	0	0	0	4.29	5
4.	Vendor sup- port	1	4	2	2	0	3.44	7	0	6	5	2	0	3.31	2	0	0	3	0	0	3.00	5	0	4	3	0	0	3.57	3
5.	Technological obsolescence	1	6	0	2	0	3.67	5	3	8	1	1	0	4.00	4	0	2	1	0	0	3.67	6	3	4	0	0	0	4.43	11
6.	Human resources (IT skilled Manpower)	2	5	0	2	0	3.78	4	6	5	0	2	0	4.15	3	2	0	0	1	0	4.00	4	1	6	0	0	0	4.14	7
7.	Archiving of e-resources	2	5	0	2	0	3.78	4	4	8	0	1	0	4.15	8	2	1	0	0	0	4.67	4	1	6	0	0	0	4.14	8
8.	Arbitrary price struc- ture/pricing models	2	4	3	0	0	3.89	3	1	5	7	0	0	3.54	6	0	0	3	0	0	3.00	3	1	1	5	0	0	3.43	11
9.	Interoperabil- ity Issues	2	4	1	2	0	3.67	5	1	5	6	1	0	3.46	7	0	0	3	0	0	3.00	2	0	2	5	0	0	3.29	5
10.	Preservation	2	5	0	2	0	3.78	4	5	5	2	1	0	4.08	9	0	1	2	0	0	3.33	2	6	1	0	0	0	4.86	9
11.	IT infra- structure to access e-resources	1	4	3	1	0	3.56	6	4	7	1	1	0	4.08	3	1	1	1	0	0	4.00	3	2	5	0	0	0	4.29	6
12.	Selection issues/ Acquisition procedures	0	5	1	3	0	3.22	9	1	9	1	2	0	3.69	4	0	2	1	0	0	3.67	3	1	5	1	0	0	4.00	6

13. Security	1	3	2	3	0	3.22	9	2	6	1	2	2	3.31	3	0	3	0	0	0	4.00	1	1	1	1	1	3	2.43	3
14. User training/ orientation to use e-resources	1	4	1	3	0	3.33	8	1	8	1	2	0	3.38	4	0	1	1	1	0	3.00	5	0	5	2	0	0	3.71	1
15. Weeding policy	2	4	1	2	0	3.67	5	6	3	2	2	0	4.00	11	0	1	2	0	0	3.33	3	5	2	0	0	0	4.71	1
16. Resource sharing and consortia	0	6	1	2	0	3.44	7	5	6	1	1	0	4.15	5	1	1	1	0	0	4.00	5	4	2	1	0	0	4.43	1
17. Storage problems	2	6	0	1	0	4.00	2	7	5	0	1	0	4.38	5	1	2	0	0	0	4.33	4	4	3	0	0	0	4.57	13
18. Collection development policy	1	5	0	3	0	3.44	7	6	4	0	3	0	4.00	1	1	1	0	1	0	3.67	2	4	3	0	0	0	4.57	4
19. Stock Verification	3	3	2	1	0	3.89	3	8	4	0	1	0	4.46	11	1	2	0	0	0	4.33	4	6	1	0	0	0	4.86	4
20. Collection evaluation	2	4	1	2	0	3.67	5	7	2	2	2	0	4.08	10	1	0	2	0	0	3.67	4	6	1	0	0	0	4.86	2
21. User – Centered Challenges	4	1	1	3	0	3.67	5	7	2	2	2	0	4.08	5	1	0	2	0	0	3.67	6	2	5	0	0	0	4.29	10
22. Digitization issues	2	5	1	1	0	3.89	3	5	6	1	1	0	4.15	5	1	1	1	0	0	4.00	3	3	3	1	0	0	4.29	10
23. Lack support from the administration	1	1	2	5	0	2.78	10	1	4	5	3	0	3.23	12	0	3	0	0	0	4.00	2	1	1	4	0	1	3.14	4
24. Lack of Positive attitude by the Staff	1	0	2	6	0	2.56	12	3	2	4	4	0	3.31	13	1	2	0	0	0	4.33	5	1	1	4	1	0	3.29	5
25. Lack of computer systems for users	0	2	2	5	0	2.67	11	1	4	3	5	0	3.08	11	0	2	0	1	0	3.33	3	1	3	2	0	1	3.43	5

SA-Strongly Agree; A- Agree; NAND–Neither Agree Nor Disagree; DA–Disagree; SDA-Strongly Disagree; WAM-Weighted Arithmetic Mean

processes, technology adoption and assimilation issues. There is a need for special management to ensure greater flow of information, requirement for fund allocation, more staff recruitment and support for technological upgradation.

Based on the findings of the study, the following recommendations are suggested:

- Viewing existing building provision for libraries, it is suggested that institutions should construct separate building exclusively for library.
- It is found that in most of the libraries, the quantum of the collection has not been developed in a large scale and moreover the acquisition of e-resources is not seen. This situation has been observed mostly in government universities and public libraries. Further, most of the libraries in general do not have collection development policy. Therefore, considering the urgency for balanced collection development, it is suggested that a sound collection development policy shall be drafted and implemented with necessary guidelines. In view of the ICT environment and emergence of e-resources, it is suggested that libraries shall pay more attention to procure e-resources and subscribe e-journals and databases, etc.
- Although all the libraries have appointed qualified librarians but they are under-staffed to carry out various activities. Therefore, it is appealed to the appropriate authorities to frame and re-draft the guidelines for manpower development in view of the changing trends in library and information science. Further, it is suggested that the existing staff should be trained in the application of ICT in libraries through continuing professional education (CPE) programmes. The existing training programmes for librarians need to be further improved with regard to the computerisation programmes.
- Although a sizable number of libraries have acquired computers, it is found that those libraries are not fully-automated. It is suggested that the managements shall take necessary steps to fully-automated the library operations in a phased manner to keep pace with the current developments in the digital era.
- Considering the significant developments towards the establishment of digital libraries as one of the features of the global information society and its importance in the information storage, retrieval and dissemination, it is suggested that academic libraries shall march towards building up digital infrastructure and necessary digital initiatives to go in for creating digital libraries.

7. CONCLUSIONS

The ICT has a positive impact on all the library and information services like reference service, current awareness service, online public access catalogue, etc. Libraries and information centres are undergoing metamorphosis and are reengineering their services, reskilling their staff and reorganising their work space in consonance with changing information systems, better and more effective information communication channels, and users' preferences for accessing information⁸.

Libraries in India in general and Chennai in particular have been continuously adapting to contemporary changes in response to the changing educational dimensions, influenced by the media changes and the emergence of ICT and its developments. Hence libraries should raise the level of user expectations through marketing and promotional activities and build their capacities. For this purpose the libraries in Chennai need to come together in consortia and networks to satisfy the information needs of the academic community. Although, there exists MALIBNET, yet it is not fully-operational as planned and the participating libraries yet to get the full desired benefits from this network. The ICT is available in almost all the libraries surveyed which will help to share information resources. 'But the key factor in making the networks work effectively is the human factor-how good its vision, how effective its implementation, how participative its management and how committed the individual members⁹.

The academic libraries play an important role in the academic community by providing necessary forum and resources for faculty and students to do their research and advance their knowledge. To effectively meet the growing needs of the clients and achieve success in the management of academic libraries, need to actively address the many challenges for the design and delivery of innovative resources and services. Therefore, the very objectives of the libraries and what these libraries do need to be re-examined in the changing IT environment based on the state-of-the-art.

The nature and functions of the academic and research libraries is changing. They have been warehouses of published knowledge but with the emergence of electronic/digital resources, now can be thought of a gateway to the resources rather than a mere repository. The future library will be a hybrid library which must be user-centered and expert-assisted. Librarians need to establish partnerships, coalitions, and connections, technological, personal and organisational, to ensure a central role in the third millennium.

REFERENCES

1. Guruswamy Naidu, N. Librarianship under threat: Direction for future. *In* Innovation driven librarianship: Expectations of librarians and library users (ICIDL 2010), edited by B. Ramesh Babu & P. Rajendran. SRM University, Kattankulathur, 2010. pp. 103-08.
2. Dasgupta, Kalpana. Libraries and librarians in India on the threshold of the 3rd millennium: challenges and risks. Paper presented in 66th IFLA Council and General Conference, 13-18 August 2000, Jerusalem, Israel, 2000.
3. Asok Kumar, S.K. & Ramesh Babu, B. Structure and functions of district central libraries in Tamil Nadu: An empirical study. *J. of Inf. Manag.*, 2007, **38**(4), 181-99.
4. Nageswara Rao, P. & Ramesh Babu, B. Role of autonomous college libraries in the contemporary society: A case study of Tamil Nadu. *Pearl: J. of Lib. and Inf. Sci.*, 2008, **2**(3), 54-63.
5. Nageswara Rao, P. Autonomous college libraries in Tamil Nadu: Services, facilities and networking, edited by B. Ramesh Babu, Vinayaga Publications, Chennai, 2010
6. Vinayagamooty, P.; Ramesh Babu, B. & Gopalakrishnan, S. Digital library initiatives engineering educational institutions in Tamil Nadu: A survey. *The Ind. J. of Techn. Edu.*, 2006, **29**(1), 68-77.
7. Ramesh Babu, B. & Subramaniyan, N. Self-financing engineering colleges in Tamil Nadu: State-of-the-Art. *The Indian J. of Techn. Edu.*, 1999, **22**(4), 1-6.
8. Malhan, I.V. Challenges and Problems of Library and Information Education in India: An Emerging Knowledge Society and the Developing Nations of Asia. *Library Philosophy and practice*. 2011. <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1744&context=libphilprac> (accessed on 18-02-2015)
9. Harsha, Parekh. Library networks in India: A review and suggestions for future directions, *In* Bridging the divide: Perspectives of an

Informational Professional. SNDT Women's University, SHPT School of Library Science Past Students Association, Bombay, pp. 159-69.

About the Authors

Dr B. Ramesh Babu was Professor in the Department of Library and Information Science, (DLIS) University of Madras and former Visiting Professor at the Mahasarakham University, Thailand (2012-2013). He has been awarded Commonwealth Fellowship for Post-Doctoral research for 1999/2000. He has received a number of awards from India such as *IATLIS-Motewala Best Teacher Award in 2011*, *Prof. Parvathaneni Gangadhara Rao Memorial Award* for 2007 by the Potti Sreeramulu Telugu University, Hyderabad, *CD Sharma Best Paper Award* from ILA in 1999, *READIT-IITM Best Paper Award in 2001*, *Best Reviewer Award* from KISTI, South Korea in 2014 and *Lifetime Achievement Award* from Karnataka State SC & ST Library Information Professionals Association in 2015. Twenty eight candidates were awarded PhD under his guidance. He has published more than 360 research papers in Indian and Foreign journals, Festschrift volumes, and conferences.

Dr P. Nageswara Rao obtained his MSc; MPhil., (Annamalai) and PhD (Madras) from University of Madras, and M.B.A. from Alagappa. Presently, he is working as Librarian in the Society for Electronic Transactions and Security (SETS), Chennai. He has published about 45 papers in peer reviewed journals, festschrifts and conference proceedings (both National and International). He has published one book titled, 'Autonomous College Libraries in Tamil Nadu: Services, Facilities and Networking'. His areas of interest include: User studies, library surveys, ICT application, web credibility and webometrics, etc.

Dr K. Baskar obtained his MPhil and PhD in library & information science. Earlier, he had served as a Librarian for more than a decade in Dr.U.V. Swaminatha Iyer Library (Manuscripts), Chennai. He has also worked in Anna University. He has also published research articles in the national and international journals and festschrift volumes. His areas of interest include: Manuscript libraries with emphasis on their organisation and preservation in the digital environment and palmleaf digitisation.

Appendix - A Questionnaire

1. Name of the University/ Institution
2. Year of Establishment
3. Nature of Management
4. Library Area (in Sq.ft).....
5. Library Staff Strength
6. Number of Books
7. Quantum of Periodicals: a) National ...b) International
8. Quantum of Back Volumes
9. Quantum of Non-book Materials: a) Audio/Video/CD/ DVD's.....b) E-books.....c) E-ournals
10. Weeding out policy
11. Technical Processing: a) Classification Scheme.....b) Cataloguing Code.....
12. Preservation Methods
13. Library Automation Software
14. Digitisation
15. Technical Services
16. ICT-based Services
17. Participation in Networks
18. Issues and Challenges Faced by the Libraries.....

S. No.	Variables	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
1	Budget issues/financial constraints					
2	Legal issues–Copyright /IPR					
3	Access (licensing) of e-resources					
4	Vendor support					
5	Technological obsolescence					
6	Human resources (IT skilled manpower)					
7	Archiving of e-resources					
8	Arbitrary price structure/pricing models					
9	Interoperability issues					
10	Preservation					
11	IT infrastructure to access e-resources					
12	Selection issues/acquisition procedures					
13	Security					
14	User training / orientation to use e-resources					
15	Weeding policy					
16	Resource sharing and consortia					
17	Storage problems					
18	Collection development policy					
19	Stock verification					
20	Collection evaluation					
21	User–centered challenges					
22	Digitisation issues					
23	Lack support from the administration					
24	Lack of positive attitude by the staff					
25	Lack of computer systems for users					

Appendix-B State-of-the-art-of-the-libraries in Chennai

S. No.	Name of University	Year of Estt.	Library area (Sq.ft)	Library Staff	Books	Periodicals		Back volume	Non-book materials		Weeding out policy	Technical processing	Preservation methods	Automation software	Digitization services	ICT based-services	Participation in networks			
						National	International		A/V	E-books								E-journals	Classification	Classification
Government University Libraries in Chennai																				
1.	University of Madras (Chepauk)	1857	75,000	10	2,50,000	51	9	25000	400	431	8500	No	CC	CCC	B, D, F, P	SOUL	Yes	C, R, RS	OPAC, DBS, E-J	INFLIBNET, MALIBNET
2.	University of Madras (Guindy)	1972	30,000	12	55,200	5	13	45,160	500	26	5	No	CC	CCC	B, D, F, P	SOUL	Yes	C, R, RS	OPAC, DBS, E-J	INFLIBNET, MALIBNET
3.	University of Madras (Marina)	1976	18,000	7	90,000	20	4	300	0	0	0	No	CC	CCC	B, D, F, P	SOUL	Yes	C, R, RS	OPAC	INFLIBNET, MALIBNET
4.	University of Madras (Taramani)	1976	8,000	5	15,000	3	14	8000	0	653	5000	No	CC	CCC	B, D, F, P	SOUL	Yes	C, R, RS	OPAC, DBS, E-J	INFLIBNET, MALIBNET
5.	Anna University	1978	42,740	40	1,50,000	100	107	30,900	0	0	10710	No	UDC	AACR	B, D, F	AU-TOLIB	Yes	C, R, RS	OPAC, DBS, E-J	DELNET, MALIBNET, NKN
6.	TN Dr M.G. R. Medical University	1987	10,000	15	33,000	4	43	5000	10,000	0	0	Yes	DDC	AACR	B, D, P	LIBMAN	Yes	C, R, RS	OPAC, DBS, E-J	ERMED, MALIBNET
7.	TN Veterinary Sciences University	1989	15000	19	40500	75	90	25100	300	325	2800	Yes	cc	ccc	B, D	Koha	Yes	C, R, RS	OPAC, DBS, E-J, EMA, ETD	CERA MALIBNET
8.	T N Dr. Ambedkar Law University	1997	3942	10	20540	52	8	4500	25	50	7032	Yes	DDC	AACR	B, D	Koha	Yes	C, R, RS	OPAC, DBS, EMA, ETD	INFLIBNET
9.	IIT Madras	1959	1,00,000	15	2,55,000	23	711	1,10,000	0	1100	15000	Yes	UDC	AACR	B, D, F	VIRTUA	Yes	C, R, RS	OPAC, DBS, E-J, EMA, SNS	INDEST
Private University Libraries in Chennai																				
1.	AMET University	2007	3500	4	60003	106	96	607	200	900	250	No	DDC	AACR	D, P	Autolib	No	C, R, RS	OPAC, IR, DBS	DELNET, INDEST, MALIBNET

2.	B. S. Abdur Rahman University	2009	15000	7	60514	240	5000	600	6000	1400	No	DDC	AACR	D, P	In-house	Yes	C, R, RS	OPAC, IR, DBS	DELNET, INDEST, MALIBNET
3.	Bharath University	2002	1,00,000	6	1,51,400	80	15540	6112	3500	772	No	DDC		D, P	Autolib	No	C, R, RS	OPAC,	DELNET, INDEST, MALIBNET
4.	Dr. M.G.R. Educational Research Institute	2003	48000	4	1,00,000	90	7000	2000	6000	450	No	DDC		D, P	Autolib	Yes	C, R, RS	OPAC,	DELNET, INDEST, MALIBNET
5.	Hindustan University	2008	50000	9	92730	166	2541	2265	1400	550	No	DDC	AACR	D, P	Libsys	No	C, CAS, R, RS	OPAC, IR, DBS	DELNET, INDEST, MALIBNET
6.	Meenakshi Academy of Higher Education and Research	2004	14000	6	10000	50	1325	400	2000	400	No	DDC	AACR	D, P	Autolib	No	C, CAS, R, RS	OPAC, IR, DBS	DELNET, INDEST, MALIBNET
7.	Sathyabama University	2001	59000	6	70000	123	2012	525	1021	3430	No	DDC	AACR	D, P	LIBG-ENIE	Yes	C, CAS, R, RS	OPAC, IR, DBS	DELNET, INDEST, MALIBNET
8.	Saveetha University	2005	20000	4	50000	175	5000	500	1250	2250	No	DDC		D, P	In-house	No	C, R, RS	OPAC	DELNET, MALIBNET
9.	Sri Ramachandra University	1997	40000	7	43000	147	3059	900	2400	430	No	DDC	AACR	D, P	LIBG-ENIE	Yes	C, CAS, R, RS	OPAC, IR, DBS	ERMED
10.	St. Peter's University	2008	12840	5	68000	115	1200	700	900	450	No	DDC	AACR	D P	Autolib	Yes	C, CAS, R, RS	OPAC, IR, DBS	DELNET, INDEST, MALIBNET
11.	S.R.M. University	1984	1,50,000	40	129000	240	3425	7700	16000	4650	Yes	UDC	AACR	D, P	ELIMS	Yes	C, CAS, R, RS	OPAC, IR, DBS	DELNET, INDEST, MALIBNET
12.	V.E.L.S. University	2008	20000	4	85426	329	17150	4445	3960	11717	No	DDC	AACR	D, P	LIBG-ENIE	Yes	C, CAS, R, RS	OPAC, IR, DBS	DELNET, INDEST, MALIBNET

13.	Vel Tech Dr. R.R. and Dr. S.R. Tech Univ	2008	16000	12	81660	169	196	6500	4000	4500	6000	No	DDC	AACR	D, P	Autolib	Yes	C, CAS, R, RS	OPAC, IR,DBS	DELNET, INDEST and MALIBNET
Government Public Libraries in Chennai																				
1.	Connemara Public Lb.	1896	1,00,000	111	8,00,0000	350	0	2,00,000	1000	5000	0	No	DDC	AACR	B, F, L, P	Koha	Yes	C, R, RS, T	Web OPAC, IVRS	MALIBNET
2.	Government Manuscript Library	1869	3,600	20	25373 (Palm leave, 50289 pa-per manu.	40	6	0	90	260 (Micro film)	0	Yes	Specific No.	Card Form	B, D, F, P	-	Yes	C, R, RS, T	-	-
3.	Anna Centenary Library	2010	3,75,000	76	5,50,000	0	0	0	0	0	0	No	DDC	AACR	D	Liberty	Yes	C, R, RS	OPAC	MALIBNET
Special Libraries in Chennai																				
1.	Mahamahopadhyaya Dr. U.Ve. Swaminathalyer Library	1943	4600		34868	80	0	0	113	0	0	Yes	CC	CCC	B, D, F, P	CDS/ISIS	Yes	R, RS, T	-	-
2.	Kuppaswami Sasitri Res. Inst.	1947	1800		60000	34	6	10000	300	0	0	Yes	CC	CCC	B, D, F, P	CDS/ISIS	Yes	R, RS	-	-
3.	C.P. Ramaswamy Foundation	1966	1800		20500	12	5	1200	80	0	0	Yes	Specific No.	-	B, D, F	-	Yes	R, RS	-	-
4.	International Inst. of Tamil Studies	1972	3500		93243	48	8	2800	0	0	0	Yes	CC	CCC	B, D, F, L	CDSISIS	Yes	C, R, RS, T	OPAC	-
5.	Central Research Institute of Siddha Library	1979	950		3100	20	2	3500	50	10 (Micro film)	0	No	CC	CCC	D, F	In-house software	Yes	R, RS, T	OPAC	-
6.	Institute of Asian Studies	1982	2400		45000	180	26	5000	200	0	0	Yes	CC	CCC	D, F, DE A, M	In-house software	Yes	C, R, RS, T	OPAC	-
7.	Madras School of Economics	1993	10,000		12000	38	8	2772	295	50	0	Yes	UDC	AACR	D, P	LIBSYS	Yes	C, R, RS, T	OPAC, DBS	DELNET, UGC Infonet

B–Binding; D–Dusting; F–Fumigation; P–Pesticides; C–Circulation; CAS–Current Awareness Service; DBS–Database Search; DDS–Document Delivery Service; E–J–E–Journal; EMA–E–Mail Alert; ETD–Electronic Thesis Dissertation; IR–Institutional Repositories; L–Lamination; RS–Reference Service; R–Reprography; SNS–Social Networking Sites; T–Translation