Research Article

An Overview of higher education scenario in Tamil Nadu

K.Viji[1] and Dr. K.Nithyanandam[2]

[1] Chief Librarian, Kanchi shri Krishna College of Arts & Science, Kilambi, Kancheepuram, Tamilnadu, India- 631 551.
[1]Research Scholar, Research and Development Centre, Bharathiar University, Coimbatore - 641 046, Tamil Nadu, India
[2]Chief Librarian, Hindustan University, Padur, Chennai, Tamil Nadu, India
Corresponding Author : *vijikannan235@gmail.com*

Abstract

Keywords

Digital technology Information,
UGC-INFONET,
n-list, e-gyankhosh,
sakshat

Impact of Digital technology Information users among the surveyed respondents is a optimum level as on an average the respondents are accessing and using a scholarly databases both bibliographic and full text, the use of search engine and the use pattern of internet are at optimum level. At the same time information literacy in the context of resource literacy, publishing literacy, research literacy, computer literacy, network literacy, digital and web technology literacy need to be oriented from the libraries to the higher academic and research community. Initiatives such as scholarly open access publishing, national mission on education through Information and Communication Technology, mail forums, discussion forums, bookmarking sites, meta search engine, UGC-INFONET, n-list, e-gyankhosh, sakshat and other predominant and popular sources on knowledge resources need to be imparted and trained not only to the end users but also library professionals of the higher academic institutions. As the technology and web media has been emerging as giant due to the convenience in usability and less expensive, most of the time even free of cost. Information literacy would emerge as one of the major opportunity and challenge for both library practioners and respondents. The surveyed environment could found significant difference in terms of library awareness, use of library facilities and seminar, e-resources and use pattern including Digital Technology Information.

INTRODUCTION

Tamil Nadu is the land with ancient history, rich cultural heritage, natural beauty and progressive outlook. Tamil Nadu (formerly known as Madras State), established on 26th January 1950, is one of the 29 states of India. Its capital is Chennai. Tamil Nadu is the eleventh largest state in India covers an area of 130,058 square kilometers or 50,216 sq miles and has 32 districts. It is the seventh most populous state (7,21,38,958) and the literacy rate is 80.3% as per the 2011 census. Tamil, the only official language of the State, is the mother of other Dravidian languages. Tamil literature and grammar are related to the period before 500 BC. English is also in common usage as an official language of Tamil Nadu. When India adopted national standards, Tamil was the very first language to be recognized as a classical language of India. (Wikipedia)1

GEOGRAPHY

Tamil Nadu State is located in the south eastern side of Indian peninsula with Kanyakumari as the southernmost tip of the land. This tip is the meeting point of Bay of Bengal, Indian Ocean and Arabian Sea. Tamil Nadu has a long eastern coastline dotted with enchanting beaches with Bay of Bengal in the east. Marina in Chennai is one of the longest beaches in the world. Arabian Sea and the states of Kerala and Karnataka form the boundary in the west. Western Ghats have The Nilgiris, the Queen of Hills. The state is bounded in the north by the states of Karnataka and Andhra Pradesh. (Tamil Nadu)

Figure 1: Map of Tamil Nadu

EDUCATION

Tamil Nadu is one of the most literate states in India. As per the census of 2011, the state's literacy rate increased from 73.47% in 2001 to 80.3% in 2011 which is above the national average. In Tamil Nadu there are 34335 elementary schools, 9996 middle schools, 5167 high schools and 5054 higher secondary schools are functioning and cater to the educational needs of school going children. (Tamil Nadu)

HIGHER EDUCATION

Tamil Nadu enjoys the privilege of being one of the most developed states in the country in the field of higher education. Higher education includes college and university level teaching. In Tamil Nadu there are 21 state universities, 2 central universities, 3 institutions of national importance and 27 deemed universities and more than 2500 colleges of varied categories are functioning and cater to the higher education needs of student community.

The Gross Enrolment Ratio (GER) of Higher Education in Tamil Nadu is 19 percent (Male 20.7% and Female 17.2%) which is above the national average (18.8%). (MHRD)4

PROFILE OF KANCHIPURAM DISTRICT

Date of formation: 1st July 1997. Kanchipuram served as the headquarters of Chengalpattu district from 1st July 1968 and this was later split into Kanchipuram District and Tiruvallur District.

Area: 4307 square kilometers

Density of population: 927 people per square kilometer According to 2011 census, Kancheepuram district had a population of **3,998,252** with a sex-ratio of 986 females for every 1,000 males, much above the national average of 929. A total of **431,574** were under the age of six, constituting **220,341** males and **211,233** females.

(Source :*en.wikipedia.org/wiki/Kanchipuram_district*)

**Literacy Rate:** 85.29% - Male: 90.34%, Female: 80.17%

Male Female Ratio: 1000:985

Boundaries of Kanchipuram District

North: Tiruvallur District and Chennai District, Tamil Nadu
South: Viluppuram District, Tamil Nadu
East: Bay of Bengal
West: Vellore District and Tiruvannamalai District, Tamil Nadu

Kanchipuram District Average Rainfall: 1213 mm
Kanchipuram District Average Temperature in Summer: 36.6 deg C
Kanchipuram District Average Temperature in Winter: 19.8 deg C

KANCHIPURAM DISTRICT MAP
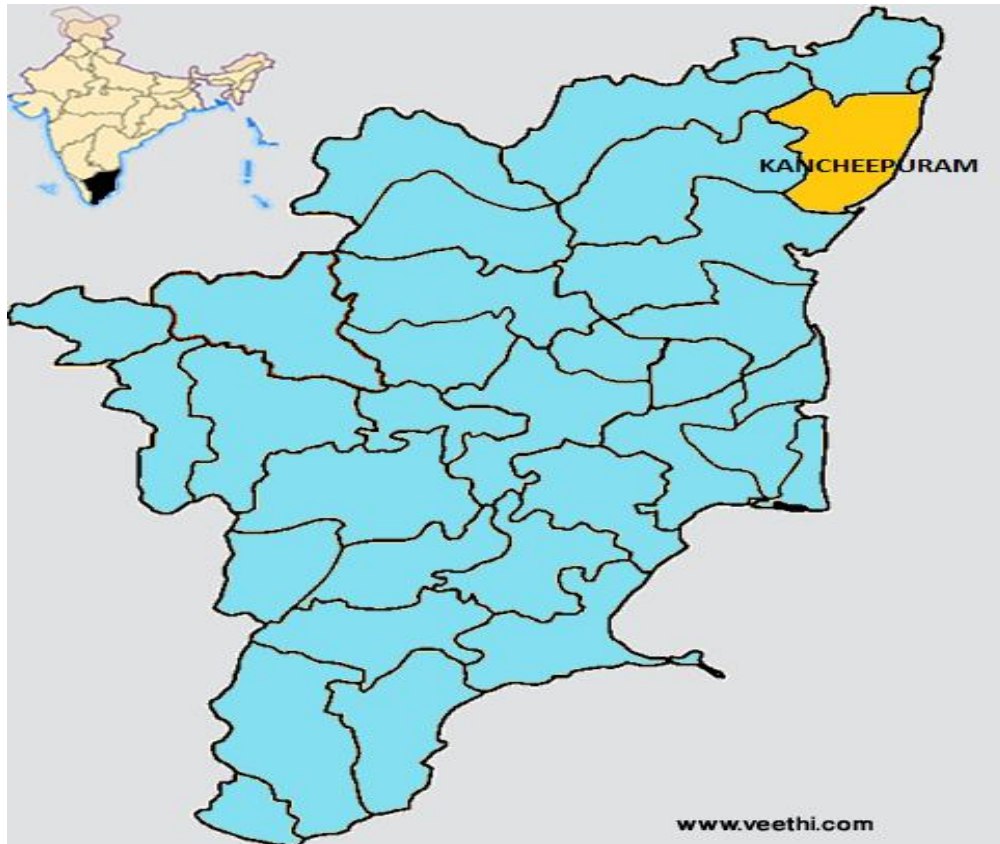
(Source:http://www.google.co.in/imgres?imgurl=http%3A%2F%2Fwww.veethi.com%2Fimages%2Fmaps%2Fdistricts%2Ftamil-nadu%2Fkancheepuram_district_map.png&imgrefurl=http%3A% 2F%2Fwww.veethi.com%2Fplaces%2Ftamil-nadu-kanchipuram-district-26.htm&h=599&w=483 &tbnid=IZ7EqmEMiXkMQM%3A&zoom=1&docid=YPYStCOUBHJUpM&ei=0xSkU8CCJ8SQuASTt4CYDA&tbm=isch&ved=0CCsQMygIMAg&iact=rc&uact=3&dur=1678&page=1&start=0&ndsp=14)

Taluks: Kanchipuram, Sriperumbudur, Uthiramerur, Chengalpattu, Tambaram, Tirukalukundram, Madrandakam, Cheyyur, Thiruporur
Assembly Constituencies: Acharapakkam, Alandur, Chengalpattu, Cheyyur, Kanchipuram, Maduranthakam, Pallavaram, Shozinganallur, Tirupporur, Uthimerur

Total Forest Area: 23,586 hectares

Kanchipuram District Nearby Attractions

1. Vedantangal Birds Sanctuary

2. Muttukkadu
3. Mamallapuram
4. Covelong Beach
5. Dakshin Chitra
6. Kanchi Kamakodi Peetham
7. Sadras Beach
8. Kanchi Kudil
9. The Crocodile Bank

Kanchipuram District Facts: It produces more than 15,000 engineering graduates every year. It is called Silk City and Temple City

Major Agricultural Products: Paddy, groundnut, sugarcane, cereals, millets, pulses

Major Industries: Ford, Hyundai, Saint Gobain, Samsung, Dell, Mitsubishi, MNCs like TCS, Wipro, Cognizant Technologies, Infosys

What is Kanchipuram District Famous For: Silk sarees, Kanchi Kamakodi Peetham and other temples such as Sri Ekambareswara Temple, Sri Kailasanathar Temple, Sri Vardaraja Perumal Temple, Sri Kamakshiamman Temple, Sri Ulagalandar Temple, Sri Vaikunda Perumal Temple, Sri Kacchapaeswarar Temple, Sri Vijayaraghava Perumal Temple, Tirupparuthikundram Jain Temples, Sri Subramanya Swami Temple.

Famous People from Kanchipuram District: Former Chief Minister of Tamil Nadu C.N.Annadurai, Sankarachariar

Various Categories of Higher Education Institutions functioning in Kancipuram District, Tamil Nadu are given below:

LIST OF INSTITUTIONS STUDIED

S.No.	Name of the Deemed University	Location	Discipline	YoE
1.	BSAR Crescent University Vandalur	Kancheepuram	SF	1984
2.	Hindustan University	Padur	SF	1985
3.	Sathyabama University	Jappiar Nagar	SF	1987

S.No.	Name of the Engineering Colleges	Location	Discipline	YoE
1.	Adhiparasakthi Engineering College Melmaruvathur	Kancheepuram	SF	1984
2.	Anand Institute of Higher Technology	Kazhipattur	SF	2000
3.	DMI College of Engineering	Palanchur	SF	2001
4.	GKM College Engineering &Technology	Alappakka	SF	1996
5.	Kanchi Pallavan Engineering College	Iyyengulam	SF	2001
6.	Mohamed Sathak AJ College of Engineering	Siruseri	SF	2001
7.	PB College of Engineering	Irungkattukottai	SF	2001
8.	Sakthi Mariamman Engineering College	Thandalam	SF	2001
9.	Shri Andal Alagar College of Engineering	Mamandur	SF	2001
10.	Sri Muthukumaran Institute of Technology	Chakkarayapuram	SF	1996
11.	Sri Ramanujar Engineering College	Vandalur	SF	1992
12.	Sri Sairam Engineering College	West Tambaram	SF	1995
13.	Sri Sivasubramaniya Nadar College of Engineering	Kalavakkam	SF	1996
14.	Sri Venkateswara College of Engineering	Pennalur	SF	1985
15.	Thirumalai Engineering College	Kilambi	SF	1999

S.No.	Name of the Arts/Science Colleges	Location	Discipline	YoE
1.	Asan Memorial College of Arts and Science	Jaladampet	SF	1994
2.	Kanchi Shri Krishna College of Arts and Science	Kilambi	SF	1994
3.	Mohamed Sathak College of Arts and Science	Sholinganallur	SF	1991
4.	Pachaiyappa's College for Men	Nasarathpet	GA	1950
5.	SIVET College	Gowrivakkam	GA	1966

POPULATION, STUDY CATEGORY, SAMPLE, RESPONDED INSTITUTIONS AND RESPONSE PERCENTAGE

S.No	Districts of Tamil Nadu	Deemed University					Engineering College					Arts & Science College				
		P	SC	S	R	R%	P	SC	S	R	R%	P	SC	S	R	R%
	Kanchipuram	6	3	150	112	74.67	15	15	750	590	78.67	5	5	250	174	69.60

SAMPLE SIZE

Printed questionnaire has been distributed in person to the respondents (Faculty Members, PG Students) of the identified higher education institutions in Kanchipuram district. 1150 Questionnaires were distributed randomly among the respondents. Of which 274 questionnaires were incomplete, 876 were filled in and received. Therefore response rate was 76.94 percent.

METHODOLOGY

The twenty first century creates a new environment for education in general and higher education in particular. The progress of any country is strongly linked with the quality of education. However, with mushrooming of educational institutions in all parts of the country and several types of economic activities dominating the landscape, the issue of quality has now assumed a critical dimension. College libraries play an indispensable role in the dissemination of information of knowledge; they should be in a position to provide effective teaching learning information support to its user's communities.

Libraries are one of the important components of the assessment through which an impact on the accreditation of the college is related. To meet the end user's demands effectively, they need to identify and adopt good/best practices.

Colleges form the integral part of Higher education and libraries in colleges are the primary source for learning process. The college library is a connecting link between teaching and learning as well as place which supplement its resources what is beyond scope of class room. College libraries play an important role in the educational history of both the students as well as the faculty members. It serves the user by providing specific information to the user. But how far the college libraries are success in implementing their goals into its reality is a big question.

The library and information science professionals and researchers have to emphasize on identifying, familiarizing, sharing and benchmarking good library practices in all facets of library and information management and services to enhance the use and quality of the library environment, particularly in higher Education Institutions like a college library. The researcher, in this context has chosen the problem with relevance as a Study on Best Practices in Academic Libraries with special reference to Higher Education in Kanchipuram District.

STATEMENT OF THE PROBLEM

The problem chosen for the research is "Impact of Digital Technology on Information Users of Higher Education in Kanchipuram District". The study aims to identify the various library practices 'as good practices in enhancing the quality of library services and usage. The variables influence in adopting best practice, the outcomes and limitations for quality/best practice initiatives and the variance level in adopting and implementing best practice in academic and college library environments.

SCOPE OF THE STUDY

The scope of the study is limited to the process, methods, and resources adopted in implementing best practices in the academic Deemed Universities and college libraries situated in Kanchipuram District only. The study also examines the outcomes and limitations in implementing the best practices in the libraries studied during July 2013 to August 2014.

The area covered under study is limited to the Deemed Universities and College Libraries in Kanchipuram District. The selected Deemed Universities and Colleges libraries have different types of disciplines mainly Engineering, Arts and Science. All Institutions also offer Post Graduate courses and Ph.D., Programmes.

Out of the twenty six institutions selected for study twenty three institutions provide education to both male and female. Also the institutions surveyed include both private aided and private Un-aided and also include Autonomous, recognized under UGC as with Potential for Excellence (CPE), and elevated to private colleges and deemed university system.

OBJECTIVE OF THE STUDY

✓ To study the present scenario of the selected Higher Education Institution in Kanchipuram District.
✓ To study the existing library and information environment in the surveyed institutions.
✓ To study how best the infrastructure, services, facilities, learning resources of the library are being compatible with changing learning environment.

✓ To find out the methods and resources used by the librarians in implementing the best practices.

✓ To identify the impact of best practices followed in the various libraries surveyed.

✓ To understand the problems faced by the librarians in implementing the Library Services.

✓ To make suggestions for the implementation of the selected Higher Education Institution in Kanchipuram District.

METHODOLOGY

The researcher has chosen descriptive research design and the method is normative survey, and questionnaire technique. The survey is also analytical in terms of collecting the details of the best practices based on the format chosen by the NAAC, that covers descriptors as objectives of the practices, the process, the impact of practices, resources required and the contributor. Data was collected using Structured Questionnaire.

The Questionnaire was refined and modified based on pilot study carried out in twenty three deemed universities and colleges at Kanchipuram district and with the consultations of experts. Telephonic and personal clarifications were also made to solicit the data on best practices so as to suite the format.

HYPOTHESES

➢ Users do differ with regard to use pattern of Information.

➢ Users do differ with regard to the designation and Information literacy level.

➢ Users do differ with regard to their productivity level.

➢ Users between the categories differ in accessing e-resources.

➢ Users do differ with regard to the designation on their information needs.

STATISTICAL TOOLS

The SPSS package was used for tabulations, correlation analysis and time series analysis of the data and simple percentile analysis have been used for analyzing the data besides other selective, appropriate statistical tools.

BIBLIOGRAPHY – STYLE OF RENDERING

The prescriptions provided in the 'Chicago Style Manual' has been followed with small variations in general, maintaining the uniformity throughout except the rendering of Indic names in particular. Instead of reversing the Indic names, the natural sequence of occurrence has been taken in.

ANALYSIS AND INTERPRETATION

The analysis of data to make inferences and interpretations in a scientific manner applying appropriate tools help the researcher to derive findings and conclusions of the study made. This chapter analyzes the primary data collected through selected parameters that enable to tabulate the data and thus interpretations are inferred.

Table – 1
Institution wise distribution of responses

S. No	Type of Institution	Number of Questioners Issued	Number of Respondents	Percentage
1	Deemed Universities	150	112	12.79
2	Engineering Colleges	750	590	67.35
3	Arts and Science Colleges	250	174	19.86
Total		**1150**	**876**	**100.00**

It is found from the table that a maximum of 67.35 percent are of Engineering Colleges, of which, Next to this, 19.86 percent of Arts and Science Colleges and 12.79 percent Deemed Universities were studied.

Table – 2
Distribution of Respondents According to Designation

S. No	Designation	No. of respondents	Percentage
1	Scientists	153	17.47
2	Professors	196	22.37
3	Associate Professors	229	26.14
4	Assistant Professors	298	34.02
Total		**876**	**100.00**

The above table revealed that the designation wise distribution of respondents. Majority of the respondents were Assistant Professors with 34.02 percent, followed by 26.14 percent of Associate Professors and 22.37 percent of Professors. It is also found that 153 respondents (17.47 percent) were scientists from various Deemed Universities.

Table – 3
Educational Qualification of respondents

S. No	Educational Qualification	No. of respondents	Percentage	Chi Square
1	P.G	56	6.39	
2	M.Phil	72	8.22	
3	Ph. D	722	82.42	58.8
4	Post Doctorate Fellow	16	1.83	
5	D.Sc	10	1.14	
Total		**876**	**100.00**	

It is found from the analysis that the 722 respondents are Doctorates (82.42 percent) and there are 72 respondents were post doctorates (8.22 percent). It is inferred from the analysis that all the respondents are Ph.D holders and a few are M.Phil degree respondents.

The Chi Square result: The calculated value is higher than tabulated value. Therefore, Hypothesis is not accepted.

Table – 4
Age wise Distribution on the Respondents

S. No	Age (in year)	Number of person	Percentage	Chi Square
1	21-30	61	6.96	
2	31-40	178	20.32	
3	41-50	431	49.20	141.5
4	51 and above	206	23.52	
Total		**876**	**100.00**	

The above table reveals that indicates the majority of the respondents (49.20 percent) belong to the age group of 41-50 years. It is followed by the age group of 51 and above years (23.52 percent). It is found that majority of respondents are belonging to the age group of 41-50 .

working in the higher education institutions of Kanchipiram District.

The Chi Square result: The calculated value is higher than tabulated value. Therefore, Hypothesis is not accepted

Table – 5
Research Experience of the respondents

S. No	Experience (in year)	Number of person	Percentage
1.	02-10	167	19.06
2.	11-15	352	40.18
3.	16-20	289	32.99
4.	Above 20	68	7.77
Total		**876**	**100.00**

The above table shows that a maximum of 352 respondents are having 11-15 years of research experience. 19.06 percent of respondents are with below ten years of research experience. 32.99 percent of respondents (289) have 16-20 years of experience and 7.77 percent of respondents have more than 20 years of research experience. Majority of the respondents are having above 10 years of research experience.

Contributions to the academic world are often made by way of publications and the list of publications is seen by many as a tangible indication of effort in this regard. Some Researchers enjoy the process of publication to their credit. Thus, publication of books, articles and reviews are the various forms of scholarly information and in addition to transmission of knowledge to improve the quality of life in the academic world. The present study aimed at identifying the publication productivity of the respondents surveyed.

Table – 6
Publications Productivity of Respondents

S. No	Details	Numbers			
		National		International	
		Numbers	Percentage	Numbers	Percentage
1.	Papers	612	69.86	326	37.21
2.	Books	235	26.83	178	20.32
3.	Journal Articles	689	78.65	299	34.13
4.	Reviews	202	23.06	82	9.36
5.	Patents	171	19.52	40	4.57
6.	Standards	141	16.10	00	0.00
7.	Research Reports	552	63.01	162	18.49
8.	Others	148	16.89	00	0.00

A majority of the respondents published journal articles both National (78.65 percent) and International (34.13 percent), which is followed by Conference Papers presented at National (69.86 percent) and International seminars (37.21 percent). It is also found that the respondents published Books with National publishers (26.83 percent) and with International publishers (20.32 percent). A sizeable number of the respondents (202) published Review articles in National Journals (23.06 percent), while 82 respondents (9.36 percent) were also published reviews in International Journals and Magazines. A majority of the respondents submitted Research Reports (63.01percent) to the National Research organizations and funding agencies, while 162 (18.49 percent) respondents published Research Reports at International level.

Table – 7
Details of participation in Conference, Seminars etc by the respondents

S. No	Activity	Attended			
		National		International	
		Numbers	Percentage	Numbers	Percentage
1.	Conference	678	77.40	341	38.93
2.	Seminar	451	51.48	168	19.18
3.	Workshop	211	24.09	149	17.01
4.	Summer Institute/symposium	285	32.53	109	12.44
5.	UGC Refresher programme	198	22.60	00	0.00
6.	Others	68	7.76	37	4.22

The above table reveals that a majority of the respondents (77.40 percent) were attended Conferences of their respective subjects in National level and 38.93 percent of respondents attended the International level. Among the respondents, 285 attended national level Summer Institute/symposiums (32.53 percent) and 109 respondents attended International level (12.44 percent). Workshops attended by 211 respondents (24.09 percent) at national level, 149 respondents at International level (17.01 percent).

An UGC refresher programme was attended by 198 respondents (22.60 percent) at national level. 451 respondents attended Seminars (51.48 percent) at National level. 19.18 percent of respondents at International level.

Other programmes like training courses were attended both at national and international level by (7.76 percent) and (4.22 percent) respondents respectively.

It is found that from the above table that a majority of the respondents attended the Conferences among other activities, while National conferences were attended at maximum level.

Anova Test
Conclusion: cal F_C < tab F_C
F_C = 1.41<F_C(1,7) = 7.71

cal F_R < tab F_R
F_R = 4.56<F_R(4,4) = 6.39
We accept at 5% level

The ANOVAs result is in both cases the calculated value is less than tabulated value. Therefore, hypothesis is accepted.

Table – 8
Programmes Organized by the Respondents
(National and International level)

S. No	Activity	Attended			
		National		International	
		Number	Percentage	Number	Percentage
1.	Conference	329	37.56	151	17.26
2.	Seminar	199	22.72	126	14.38
3.	Workshop	176	20.09	101	11.53
4.	Summer Institute/symposium	98	11.19	119	13.58
5.	UGC Refresher programme	105	11.99	12	1.37
6.	Others	55	6.28	0	0

The above table reveals that there are 329 respondents organized Conferences of their respective institutions (329 percent) at national level, 151 respondents (17.26 percent) at international level. Seminars conducted by 199 respondents (22.72 percent) at national level and 126 respondents (14.38 percent) at International level. Summer courses and symposiums were organized   by 98 respondents (11.19 percent) at national level and 119 respondents (13.58 percent) at international level. An UGC refresher programmes organized at national level by 105 respondents (11.99 percent) and 12 respondents (1.37) at international level. Other activities conducted by 55 respondents (6.28 percent) at national level. It is found from the inferences that the respondents organized mostly national level programmes.

Table – 9
Details of Project Funds received from Funding Agencies for Research work

Yes		No	
Number	Percentage	Number	Percentage
735	83.90	141	16.10

The above table shows that 83.90 percent of respondents (735) received project funds from various funding agencies.

Remaining 16.10 percent of the respondents (141) were preceding their research work with their institution funds.

Table – 10
Details of Funding Agencies providing funds for Research work

S. No	Funding Agencies	Numbers	Percentage	Chi Square
1	UGC(University Grant Commission)	356	40.64	
2	DST (Department of Science & Technology)	275	31.39	
3	CSIR(Council of Scientific and Industrial Research)	235	26.83	83.0
4	IT (Indian Council of Information Technology)	230	26.26	
5	Others	198	22.60	

The above table shows that a majority (40.64 percent) of the respondents got research funds from UGC, next to this DST (31.39 percent), CSIR (26.83 percent), followed by IT (26.26 percent) and some of the respondents got from other Agencies such as DIT, ICMR, NISSAT, etc.

It is found from the above table that most of the respondents have got funds from UGC.

The Chi Square result: The calculated value is higher than tabulated value. Therefore, Hypothesis is not accepted.

Table – 11
Member in Professional Association

Member in Associations			
Yes		No	
Numbers	Percentage	Numbers	Percentage
465	53.08	411	46.92

The above table reveals that more than half of the total respondents (53.08 percent) are members in different Professional bodies, rest of them (46.92 percent) are not a member in any one of the professional Associations. It is found from the analysis that more than 50 percent of the respondents were member in Professional Associations.

Table – 12
Types of Information Required

S. No	Details	Numbers	Percentage	Chi Square
1.	Procedural Information	609	69.52	
2.	Product Information	716	81.74	
3.	Factual and statistical Information	467	53.31	
4.	Information for writing research articles	759	86.64	
5.	Information for preparing the proposal for a new project	801	91.44	3.62
6.	For administrative progress	243	27.74	
7.	For guiding research scholars	756	86.30	
8.	For Special lectures & Academic activities	334	38.13	
9.	Others	126	14.38	

It is inferred from the above table that the various information are often required by the respondents. Majority of the respondents (801) need the Information for preparing the proposals for a new project (91.44 percent), next to this, information for guiding research scholars and information for writing a research article by 759 and 759 each with 86.30 percent and 86.64 percent, product information required by 716 (81.74 percent) respondents, followed by Procedural Information by 609 (69.52 percent). 53.31 percent of respondents needed Factual and Statistical Information. From the above analysis the majority of the respondents preferred Information for preparing the proposals for a new project as most of them are working in research institutes.

The Chi Square result: The calculated value is lower than tabulated value. Therefore, Hypothesis is accepted.

Table – 13
Sources of Information Gathering

S. No	Details	Numbers	Percentage	Chi Square
1.	By Browsing Internet	776	88.58	
2.	Reading electronic journals	683	77.97	
3.	By attending conferences/Seminars/ Symposium, etc.	615	70.21	
4.	By discussing with colleagues	558	63.70	62.62
5.	By visiting Library	486	55.48	
6.	By visiting exhibitions	452	51.60	
7.	Foreign Trips	325	37.10	
8.	Through conversation with Librarian/	312	35.62	

	Experts /Scientist/Technological Gatekeepers/others		
9.	Field Trips	283	32.31
0.	Inter Library Loan	268	30.59
1.	Through scanning literature	221	25.23
2.	Through Telephone, Fax	88	10.05
3.	Others	72	8.22

The above table reveals that the respondents behaviour on gathering information from various sources, 776 respondents (88.58 percent) gather the information By browsing Internet followed by 683 of respondents (77.97 percent) gather the information by reading electronic journals, 615 of respondents (70.21 percent) gather the information By attending conferences/seminars/symposium, while 558 of respondents (63.70 percent) by discussing with their colleagues and 486 of respondents (55.48 percent) are by visiting Library.

It is inferred from the analysis that the majority of the respondents gathering information by Browsing Internet. **The Chi Square result:** The calculated value is higher than tabulated value. Therefore, Hypothesis is not accepted.

Table – 14
Purpose of Visit to the Library

S. No	Purpose of visit	Numbers	Percentage
1.	For Research work	716	81.74
2.	To borrow books	288	32.88
3.	To spent leisure time	168	19.18
4.	To access e- resources	545	62.21
5.	To meet Librarian / library professionals in search of Information	312	35.62
6.	Other purpose	178	20.32

The above table shows that the respondents visit library for so many reasons. Majority (81.74 percent) of respondents for research work, 62.21 percent of the respondents visit library to access e-resources, followed by 35.62 percent respondents meet librarian/Library professionals in search of information, 32.88 percent are visit library to borrow books, 19.18 percent of respondents visit library to spent leisure time. It is found from the analysis that majority of the respondents visit library for doing "Research Work".

Table – 15
Time spent per week for Information gathering activities

S. No	Activities	1-5 Hrs.		6-10 Hrs		11-15 Hrs		More than 15 Hrs		Total	Percent age
		No.	%	No.	%	No	%	No.	%		
1.	Accessing Internet	362	41.34	335	38.24	88	10.04	91	10.39	876	100.00
2.	Accessing e-mail alerts	220	25.11	246	28.08	239	27.28	171	19.52	876	100.00
3.	Conferring with co-workers or others experts	228	26.03	343	39.15	185	21.12	120	13.70	876	100.00
4.	Others	275	31.39	293	33.45	147	16.78	161	18.38	876	100.00

It is found from the above table that a maximum of (41.34 percent) of the respondents (362) spent up to 5 hours per week for accessing internet for their informational needs, 28.08 percent of the respondents (246) spent 6 to 10 hours per week for accessing e-mail alerts. It is also found that 39.15 percent of the respondents (343) conferring with co-workers and others experts by spending 6 to 10 hours in a week.

Table – 16
Methods of Updating the Knowledge in their Subject Areas

S. No	Preferences	Numbers	Percentage
1.	Internet/e-mail alerts	719	82.08
2.	Attending the conferences	638	72.83
3.	Scanning of current issues of print/Online journals	468	53.42
4.	Personal communication	439	50.11
5.	Scanning recent issues of abstracting tools	396	45.21
6.	List server, E-archives, databases	365	41.67
7.	Watching T.V /Hearing Radio	312	35.62
8.	Through services from library	214	24.43
9.	Others	90	10.27

The above table reveals the respondents use different ways to make abreast of knowledge in their respective fields, 82.08 percent of the respondents (719) prefer Internet/e-mail alerts to update, followed by 72.83 percent of respondents (638) by attending the conferences, 53.42 percent of them (468) by scanning of current issues of print/online journals, 50.11 percent of respondents (439) update the knowledge through personal communication with experts, colleagues, 41.67 percent of respondents abreast recent information by List server, E-archives, databases and 35.62 percent of users updating their subject information through watching T.V and hearing Radio.

Table – 17
Opinion in Library Working Hours

S. No	Particular	Yes		No	
		Number	Percentage	Number	Percentage
1.	Suitable library timings	645	73.63	231	26.37
2.	Comfortable to read in the Library	542	61.87	334	38.13

The above table clearly shows that the library timings are suitable for 73.63 percent of respondents and the rest of 26.37 percent respondents were stated that the library timing is not suitable for them. 61.87 percent of respondents mentioned that the ambience is comfortable to read in the library. Rest of the (38.13 percent) respondents (334) felt the facilities and environment of the library needs to be improved.

Table – 18
Library Visit

S. No	Category	Numbers	Percentage
1.	Almost Daily	98	11.19
2.	Twice a week	123	14.04
3.	Once in a week	376	42.92
4.	Fortnightly	212	24.20
5.	Once a Month	67	7.65
Total		**876**	**100.00**

It is found from the table that the surveyed respondents generally visit the library Once in a Week (42.92 percent) and Fortnightly (24.20 percent), while only a few of them (11.19 percent) visit library Daily and 67 (7.65 percent) respondents visit the library once in a month. It is inferred that more than 40 percent of the respondents to visit library once in a week.

Table – 19
Frequency of Borrowing Books

S. No	Frequency	Numbers	Percentage
1.	Regularly	502	57.31
2.	Occasionally	374	42.69
Total		876	100.00

It is known from the table that a majority of the respondents (57.31 percent) are regularly borrowing books while only 42.69 percent of the respondents are occasionally borrowing the books from the library.

It is inferred that the majority of the respondents are using the library for getting library books.

Table – 20
Time Spent in Library

Per Day					
30 minutes to 3 Hrs.		Above 3 Hrs.		No response	
No.	Percentage	No.	Percentage	No.	Percentage
449	51.29	339	38.70	88	10.01

The above table indicates that 51.29 percent of the respondents (449) use the library 30 minutes to three hours in a day, 38.70 percent of the respondents (339) use the library more than three hours. 88 (10.01 percent) of respondents were not responded to this information.

It is inferred from the analysis that more than 50 percent of the respondents are using the library for 30 minutes to 3 hours in a day for colleting the required information.

Table – 21 Time Spent in Library

Per Week					
2 Hrs. to 5 Hrs.		Above 5Hrs.		No response	
No.	Percentage	No.	Percentage	No.	Percentage
382	43.61	440	50.23	54	6.16

The above table reveals that 440 respondents (50.23 percent) are using the library for more than 5 Hrs. 43.61 percent of the respondents use the library 2 to 5 Hrs per week and 6.16 percent of respondents not response to this.

It is inferred from the analysis that more than 50 percent of the respondents are using library for more than five hours in a week for their reference work.

Table – 22 Time Spent in Library

Per Month					
5 Hrs. to 10 Hrs.		Above 10 Hrs.		No response	
Number	percent	Number	percent	Number	percent
370	42.24	453	51.71	53	6.05

The above table shows that 453 (51.71 percent) of the respondents are using library more than 10 hours per month. Followed by 370 (42.24 percent) of the respondents use the library for 5 to 10 hours in a month.

More than fifty percent of the surveyed respondents are using the library for more than 10 hours in a month.

Table – 23 Usage of different types of Information Sources (Electronic)

S. No.	Sources	Preferences 1st	2nd	3rd	4th	5th	6th	7th	Total
1	CD-ROM Databases	42 (4.76%)	62 (7.08%)	192 (21.92%)	**263** (30.02%)	102 (11.64%)	56 (6.39%)	159 (18.15%)	876
2	Internet browsing	**362** (41.32%)	132 (15.07%)	86 (9.82%)	119 (13.58%)	18 (2.05%)	89 (10.16%)	70 (7.99%)	876
3	E-Journal Databases	193 (22.03%)	88 (10.05%)	**295** (33.53%)	94 (10.73%)	59 (6.74%)	75 (8.56%)	72 (8.22%)	876
4	E-mail, E-mail alerts	193 (22.03%)	**264** (30.14%)	182 (20.78%)	58 (6.62%)	68 (7.76%)	74 (8.45%)	37 (4.22%)	876
5	Radio	19 (2.17%)	173 (19.75%)	83 (9.47%)	80 (9.13%)	**335** (38.24%)	59 (6.74%)	127 (14.50%)	876
6	Audio-visual sources	125 (14.27%)	88 (10.05%)	111 (12.67%)	89 (10.16%)	144 (16.44%)	**228** (26.03%)	91 (10.39%)	876
7	Television	107 (12.21%)	104 (11.87%)	110 (12.56%)	148 (16.89%)	120 (13.70%)	57 (6.51%)	**230** (26.76%)	876

It is found from the study that surveyed respondents are familiar and use different types of electronic information resources. The ranking of e-resources among the respondents could revealed that internet browsing as the first rank by a large group of respondents (41.32%), while email and email alerts got second preference among the next major group of respondents (30.14%), followed by e-journal databases (33.53%) as third rank and CD ROM databases (30.02%) and radio as fifth rank(38.24%) followed by audio visual resources (26.03%) and Television as sixth and seventh rank among the e-resources.

Table - 24
Using e-journals Databases

S. No	Databases	Numbers	Percentage	Rank
1.	Science Direct	732	83.56	1
2.	Springer	680	77.63	2
3.	INSPEC (Science Abstract)	501	57.19	3
4.	Cambridge Uni. Press	478	54.57	4
5.	Emerald	465	53.08	5
6.	Wiley Inter science	459	52.40	6
7.	Oxford Journals	439	50.11	7
8.	EBSCO	426	48.63	8
9.	American Chemical Society	418	47.72	9
10.	JSTOR	386	44.06	10
11.	IEEE	352	40.18	11
12.	Taylor/Francis	266	30.37	12
13.	Pro Quest	256	29.22	13
14.	ASCE	247	28.20	14
15.	ASME	201	22.95	15
16.	INDEST	165	18.84	16
17.	Ovid data bases	152	17.35	17
18.	SAGE	102	11.64	18
19.	OAlster	98	11.19	19
20.	Other	56	6.39	20

It is found that a maximum of 83.56 percent of the respondents using Science Direct database as the source of information stood first, Next to this, the most accessing database is Springer Link by 77.63 percent of the respondents placed in second rank. Thirdly, INSPEC database was accessed by 501 respondents and 57.19 percent of the respondents used Cambridge University press (54.57 percent) journals and stood fourth in place.

It is inferred from the analysis that the Science Direct, Springer Link and Cambridge University Press databases are most frequently used by the respondents.

Table - 25
Use of other Language Periodicals (along with English)

S. No	Details	Numbers	Percentage
1.	Tamil	75	41.21
2.	Hindi	58	31.87
3.	French	28	15.38
4.	German	21	11.54
Total		**182**	**100.00**

It is found from the table that out of 876 respondents, 20.78 percent of the respondents (182) are using the periodicals published other than English language. It is also found that among them, majority (41.21 percent) are using the journals published in Tamil followed by 31.87 percent of them are using the Hindi journals. More than 15 percent of the respondents are using the journals published in French and 11.54 percent of the respondents are using the journals published in German.

It is inferred from the analysis that the understanding of scientific concepts and literature in mother tongue is quite normal and the publications of other language also give its opinion with naturally.

Table - 26
Utilization of Library and Information Services among Respondents

S. No	Services	Numbers	Percentage
1.	Current Awareness Services	721	82.31
2.	Reference Services	615	70.21
3.	Circulation	556	63.47
4.	Referral Service	489	55.82
5.	Selective Dissemination of information	440	50.23
6.	Newspaper Clipping Service	432	49.32
7.	Internet	420	47.95
8.	Online Public Access Catalogue	410	46.80
9.	Printing of Documents	399	45.55
10.	Electronics Journals Access	385	43.95
11.	Inter Library Loan	326	37.21
12.	Digital Library Facility	312	35.62
13.	C.D writing	309	35.27
14.	Technical Enquiry Service	300	34.25
15.	Reprographic Services	289	32.99
16.	Display Board Services	281	32.08
17.	Web Locator	222	25.34
18.	Abstracting/Indexing services	219	25.00
19.	Others	69	7.88

It is observed from the table that none of the library and information services among the surveyed institutions have been utilized by all the respondents. Current Awareness Service (82.31 percent), Reference Service (70.21 percent) and Circulation Service (63.47 percent) are used by a major group of the respondents, while Referral Service (55.82 percent), Selective Dissemination of Information Service (50.23 percent), Newspaper Clipping Service (49.32 percent), Internet Access Facility (47.95 percent), Online Public Access Catalogue Service (46.80 percent) are the services availed moderately among the respondents. All the remaining library services have got below average usage among the respondents. Some of the specialized information services such as, Technical services (34.25 percent), Display board (32.08 percent), CD-writing (35.27), Abstracting and indexing (25.00 percent), web locator (25.34 percent), and Digital library facility (37.21 percent) have also been used by respondents in the research institutions surveyed.

Table - 27
Awareness on Library Environment

S. No	Details	Yes		No	
		Number	Percentage	Number	Percentage
1.	Aware of the library rules	655	74.77	221	25.23
2.	Collection details of Books/Journals	580	66.76	296	33.79
3.	Use of OPAC/Web OPAC	571	65.58	305	34.82
4.	Familiar with library Staff	610	69.70	266	30.37
5.	Aware and use of Library services and Infrastructures	546	62.64	330	37.67
6.	Access Information in your Institution	532	60.58	344	39.27
7.	Access Information in your Library/Information Centre	338	38.52	538	61.42
8.	Access Information in other Research organizations	678	77.40	198	22.60

It is found from analysis that the respondents surveyed are aware and make use the library environment as a majority of the respondents opined that they aware the library rules (74.77 percent), collection details of books and journals (66.76 percent) use of OPAC/Web OPAC (65.58 percent), familiarity with library staff (69.70 percent), awareness and use of library services and infrastructures (62.64 percent)

and access information in their respective Institutions (60.58 percent).

It is quite strange that only 38.52 percent of the respondents felt that they are accessing information at the library and information centers of their respective Institutions, while 77.40 percent of the respondents opined that they are familiar with other research organizations.

Table - 28
Awareness and Use of various Research Organizations to Access Information

Access information in other Research Organizations									
Optimum		Good		Excellent		Minimum		Not Satisfied	
No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
169	19.29	198	22.60	152	17.35	172	19.63	185	21.12

Awareness and use of other research organization to access research information and share the research practices is the major outcome of the information literacy for academicians and researchers. In this context, the present study aimed at assessing the extent of familiarity and use of research organizations among the respondents.

It is found from analysis that a moderate number of respondents felt Good (22.60 percent) and at Optimum

(19.29 percent) level of awareness and use of other research organizations, while twenty percent of the respondents stated that they were not satisfied (21.12 percent) and at minimum (19.63 percent) awareness and use of other research organizations for their research progress. Only a small portion of the respondents (17.35 percent) felt that they are having excellent level of access and use of other research organizations towards accessing and sharing research information.

Table - 29
Library Provide Information Literacy Programme

Information Literacy Programme			
Yes		No	
Number	Percentage	Number	Percentage
724	82.65	152	17.35

The above table reveals that 724 (82.65 percent) of respondents have agreed that the library provides information literacy programme, 152 (17.35 percent) users

respond that the library does not provide the Information literacy programmes.

From the study, it is concluded that most of the libraries conducted Information literacy programmes to its clients.

Table - 30
Frequency of Information Literacy Programme

S. No	Frequency	Numbers	Percentage	
1.	Regular Intervals	241	33.29	
2.	When Requested	113	15.61	
3.	Annually	164	22.65	20.12
4.	For New Users	118	16.30	
5.	Others	88	12.15	
Total		**724**	**100.00**	

The above table reveals that among 876 respondents, only 724 (82.65 percent) of them are opined that the information literacy program were conducted in libraries. While 241 (33.29 percent) users respond that information literacy programmes conducted at Regular Intervals, 164 (22.65 percent) users opined that the programmes organized

annually 164 (22.65 percent) opined that Information literacy programmes for only new users, 118 (16.30 percent) of users expressed that Information Literacy programmes conducted as and when requested, and 88 (12.15 percent) for others those who are interested.

It is found that most of the research Libraries are conducting Information Literacy programme at regular intervals.

The Chi Square result: The calculated value is higher than tabulated value. Therefore, Hypothesis is not accepted.

Table - 31
Difficulties that come across in Accessing to use of Information

Difficulties in Access Information			
Yes		No	
Number	Percentage	Number	Percentage
598	68.26	278	31.74

The survey revealed that a majority of the respondents (68.26 percent) felt that they have been managing the access to information from various sources without much difficulties, while 31.74 percent of respondents felt problems faced while access information sources.

Table - 32
Difficulties that come across in accessing information

S. No	Details	Numbers	Percentage	Chi Square
1.	Lack of reading materials	511	85.45	
2.	Lack of knowledge of information sources	477	79.77	
3.	Lack of access to all the information in the Institution	438	73.24	
4.	Lack of knowledge in use of Library services	428	71.57	10.26
5.	Price hike in publication	381	63.71	
6.	Late arrival of literature	308	51.51	
7.	Lack of Time	300	50.17	

The above table depicts that out of 876 respondents 598 (68.26 percent) of respondents express that some difficulties come across to access information. While 511 (85.45 percent) respondents agreed that they face difficulties in accessing and use of information due to the lack of reading materials, followed by 477 (79.77 percent) of the users encounter the difficulty due to lack of knowledge of information sources, 438 (73.24 percent) respondents opined due to Lack of access to all the information in the institution, 381 (64.65 percent) face difficulty due to price hike in publication, 308 (51.51 percent) of the users have difficulty of late arrival of literature and 300 (50.17 percent) fail to access information due to lack of time.

It is observed that the respondents encountered with a range of difficulties towards accessing the information.

The Chi Square result: The calculated value is lower than tabulated value. Therefore, Hypothesis is accepted.

Table - 33
Opinion on Facilities Available

S. No	Objective	Most Satisfactory		Satisfactory		Not Satisfactory		Total
		No.	Percent	No.	Percent	No.	Percent	
1	Computer / Servers	611	69.75	177	20.21	88	10.04	876
2	Telecommunication & its facilities	383	43.72	327	37.33	166	18.95	876
3	Photocopying	478	54.57	241	27.51	157	17.92	876
4	Microfilm/Microfiche	198	22.60	248	28.31	430	49.09	876
5	Internet/Intranet	424	48.40	336	38.36	116	13.24	876
6	Online database/E archive/Journals	361	41.21	301	34.36	214	24.43	876
7	Digitalization	440	50.22	258	29.45	178	20.32	876
8	Satellite/TV	265	30.26	232	26.48	379	43.26	876
9	Video Conferencing/ Video Tele text/Tele text	302	34.47	327	37.33	247	28.20	876

It is found from the above table that, most of the libraries studied are using the facilities of modern information communication technologies to serve the users for their entire satisfaction. A maximum of 69.75 percent of them are opined that the availability of computers and servers are quite satisfactory. Next to this, 54.57 percent of them are opined that their libraries are having the photocopying facilities. It is quite interesting to note that 50.22 percent of the libraries are having digitalization facility for their users. 48.40 percent of the libraries are provided with internet facilities for their users.

Anova Test
Conclusion: cal F_C < tab F_C
$F_C = 1.41 < F_C (1, 7) = 1.41$
We accept at 5% level

cal F_R < tab F_R
$F_R = 4.56 < F_R (4, 4) = 6.39$
We accept at 5% level

The ANOVAs result is in both cases the calculated value is less than tabulated value. Therefore, hypothesis is accepted.

Table - 34
Areas Required Information Literacy

S. No	Details	Numbers	Percentage
1	Internet Search	799	91.21
2	Library Website use	671	76.60
3	E-Journals access	531	60.62
4	To access DELNET, British Council Library, American Library	514	58.68
5	Catalogues search/Web OPAC	459	52.40
6	Databases access	458	52.28
7	In writing Bibliography / References	414	47.26
8	To make use web2.0/3.0 tools	346	39.50
9	To compile citation profile	337	38.47
0	Evaluation of Information sources	312	35.62
1	Others	487	55.59

It is found from the table that some of the important areas need to be given importance and details to be disseminated to the users. 91.21 percent of the respondents opined that the search strategies to be trained to the users on internet searching. 76.60 percent of them and of opinion that the users have to be trained in library website usage. The facilities of DELNET, British Council Library and American Resource centre libraries to be informed through information literacy programme to the users. This is viewed by 58.68 percent of the respondents.

Table - 35
Training /Orientation activity

Formal Training/Orientation attended							
YES				NO			
No.		Percentage		No.		Percentage	
389		44.41		487		55.59	
Useful		Not useful		Have been useful		Have been not useful	
No	Percentage	No	Percentage	No.	Percentage	No	Percentage
273	70.18	116	29.82	334	68.58	153	31.42

The above table shows that 389 (44.41 percent) of the respondents attended formal training/orientation programmes and 487 (55.59 percent) of respondents not attended the programmes, while 273 (70.18 percent) out of 389 respondents expressed that programmes are useful and rest of them 116 (29.82 percent) are mentioned not useful to them. Out of 487 not attended respondents, mentioned that they feel it have been useful if may attended the programme, rest of the 153 (31.42 percent) of respondents expressed that they will not useful even though they attend the programme.

Overall, it is concluded from these table 70 percent of the respondents attended the training/orientation programme and also expressed that programmes are useful.

Table - 36
Sources for Learning Internet

S. No	Sources	Numbers	Percentage
1	Self Instruction, Trial and Error	721	82.31
2	Online Instruction	658	75.11
3	By attending presentation-lectures organized by your library	568	64.84
4	By reading Books, articles on the Internet	539	61.53
5	Course Taught at the Research Institution/University	478	54.57
6	Assistance from Colleagues	448	51.14
7	Formal Training Programmes like short courses, workshops, etc	391	44.63

The above table inferred that the respondents used sources for learning Internet, 721 (82.31 percent) of respondents used self instruction, trial and error, 658 (75.11 percent) of respondents prefer online Instruction, 568 (64.84 percent) of respondents felt by attending presentation-lectures organized by library, while 539 (61.53 percent) of respondents learnt by reading books, articles on the Internet to learning internet, 448 (51.14 percent) respondents depend upon the assistance from colleagues, 391 (44.63 percent) respondents attended the formal training programmes like short courses, workshops.

It is found from this table that most of the respondents depend upon the self instruction and trial and error method to learning the Internet.

Table - 37
Purpose of Browsing Internet

S. No	Details	Numbers	Percentage
1.	Current Research	729	83.22
2.	Online Journals	695	79.34
3.	E-Mail	643	73.40
4.	Online Communication (Discussion Groups)	539	61.53
5.	File transfer	461	52.63
6.	Government Information	412	47.03

The above table revealed that 729 (83.22 percent) respondents are browsing Internet for seeking the current research information, 695 (79.34 percent) respondents use internet for online journal access, 643 (73.52 percent) respondents used internet for e-mail transaction, while 539 (61.53 percent) respondents used for online communication, 461 (52.63 percent) respondents mentioned that they browse for File transfer, 412 (47.03 percent) respondents browse internet for gathering government Information. It is inferred that majority of the respondents browsing Internet for seeking information for current research.

Table - 38
Use of Search Engines

S. No	Search Engines	Numbers	Percentage	Rank	Chi Square
1	Google	774	88.36	I	
2	Yahoo	536	61.19	II	
3	AltaVista	159	18.15	IV	
4	Rediff	208	23.74	III	
5	Hotmail	142	16.21	V	1.75
6	MSN	72	8.22	VII	
7	Lycos	58	6.62	VIII	
8	Sify	77	8.79	VI	
9	Other	19	2.17	IX	

The above table reveals that the usage of search engines by the respondents, 88.36 percent of respondents (774) prefer Google, 61.19 percent of the respondents prefer to search through Yahoo (536), AltaVista comes in the fourth place preferred by 18.15 percent of respondents (159), while Rediff by 23.74 percent of respondents (208). Hotmail search engine preferred by 16.21 percent of respondents (142). MSN preferred by 8.22 percent of respondents (72).

It is found from the, analysis that Google search engine is mostly preferred by the respondents followed by Yahoo as search engine.

The Chi Square result: The calculated value is lower than tabulated value. Therefore, Hypothesis is accepted.

Table - 39
Use of Meta Search Engine

S. No	Meta Search Engine	Numbers	Percentage	Chi Square
1	Clusty	67	7.65	
2	Surfwax	62	7.08	
3	Dogpile	23	2.63	
4	Zapmeta	29	3.31	
5	Ixquick	25	2.85	12.10
6	U.S.A gov.	23	2.63	
7	Scirus	41	4.68	
8	Icq	49	5.59	
9	Flickr	15	1.71	
10	Lexis - nexis	21	2.40	

Meta search engines have been emerging as a new technology to acquire and access specific types of information resources in terms of searchable format and the context, the purposes, in which information can be search by the end-users. Ever increasing giant size of the internet, warrant depth and highly semantic web indexing tool to retrieve the information from the deep websites rather browsing the internet. As Meta search engines are one such solution to retrieve the deep web content they are gaining momentum among the web users. Hence, in this context the researcher aimed at identifying the familiarity and use of Meta search engines among the respondents of the surveyed institutions in Kanchipuram District.

The analysis revealed that only a small portion of negligible amount of respondents are familiar and use the Meta search engines. Among them, Clusty (7.65 percent), Surfwax (7.08 percent), ICQ (5.59 percent) were the metatsearh engines used by a large number of respondents, while Scirus (4.68 percent), Zapmeta (3.31 percent), Dogpile (2.63 percent), Ixquick (2.85 percent) are used by ten and more number of respondents.

The Chi Square result: The calculated value is lower than tabulated value. Therefore, Hypothesis is accepted.

Table – 40
Level of Satisfaction over Library Collection and Services

S. No.	Level of Satisfaction	Numbers	Percentage
1	Excellent	123	14.04
2	Very Good	180	20.55
3	Good	352	40.18
4	Fair	221	25.23
Total		**876**	**100.00**

It is found from the table that, the extent of level of satisfaction among the respondents revealed that only a small portion of the respondents were highly satisfied with the library environment among the surveyed institutions by rating Excellent (14.04 percent) and Very Good (20.55 percent). Forty percent of the surveyed respondents revealed that library services are Good, while one fourth of the surveyed respondents ratified their level of satisfaction as average.

BIBLIOGRAPHY

Abdul Majeed,K.C & Femin,V.T (2012) Journal use pattern among medical community: a case study of Government Medical College, Callicut,*Kerala.Kelpro Bulletin*,16(1), pp.49-55.

Al-Wehaibi, K., Al-Wabil, A., Alshawi, A. & Alshankity, Z. (2008) Barriers to Internet Adoption among Faculty in Saudi Arabian Universities. In J. Luca & E. Weippl (Eds.), Proceedings of World Conference on Educational Multimedia,

Hypermedia and Telecommunications 2008 (pp. 24-33). Chesapeake, VA: AACE. Retrieved from http://www.editlib.org/p/28372.

Amitha S. Pradhan and Neela J. Deshpande (2009), Use of Information Audit to enhance the Quality of Library and Information Services: A Case study of the Central Library, Sinhagad College of Engineering, Pune, Proceedings of the National Seminar on Library and Information Services in Changing era, 22-23, University of Pune, pp. 321-328.

Amritpal kaur, Sarman, Sarita Rani (2012), Information Literacy among the students in the electronic environment: A case study of Guru Nanak Dev University, *SRELS, Journal of Information Management*, 49(1), paper-A, pp.21-38.

Ansari, M. N & Zuberi, B. A. (2010) Information seeking behaviour of media professionals in Karachi. *Malaysian Journal of Library and Information Science,* 15(2), pp.71-84.

Ashok Kumar Sahu (2007), Measuring service quality in an academic library: an Indian case study, *Library Review*, 56(3), pp. 234-243.

Available at: http://www.un.org/aboutun/unchart.pdf).

Available at: http://www.un.org/Depts/dhl/deplib/i189a11.htm).

Available at: http://www.un.org/Pubs/catalog.htm.

Baer,William., & Li, Lisha. (2009) Library and information use patterns by engineering faculty and students. ASEE Annual Conference Austin, TX.

Balagué (2007), The use of ISO 9001 quality standard in higher education institution libraries.textos universitaris. *De blioteconomia i documentacio* No.19.

Bansode, S.Y, Pujar, S.M. (2008) Use of Internet by research scholars at Shivaji University, Kolhapur, *Annals of Library and Information Studies,* 55(2), pp.123-126

Belkin (2008), Awareness and Utilization of Information Communication Technology among the Members of Faculty of Government Engineering Colleges in Tamilnadu: A Study, *Indian Journal of Information Science and Services*, 2(1), 46-51.

Bharathi,V & Nagarajan (2012) A case study on use of e-resources by the users of K.S.Institute of Technology, Bangalore, *Professional journal of Library and Information technology*, 2(2), pp.70-78.

Bharati,M.S.Z.,& Zaidi ,S. M.(2008) Use of E-Journals and E-Databases of UGC-Infonet Consortium by Faculties Members and Research Scholars of Aligarh Muslim University, A Survey, *International CALIBER-2008*, pp.529.

Bhattacharya (1978), Information Science: a verified view through a system approach.

Biradar, B.S. & Sampathkumar, B.T. (2008) Use of search engines by research scholars and faculty members of physics departments in the universities of Karnataka

State, *Annals of Library and Information Studies*, 55, pp.62-68.

Biradar,B. S., Santhosh Kumar, K .T., Anil Kumar C. (2003) Information Use pattern of Sericulture scientists: A case study of Karnataka State Sericulture Research and Development institute Library,Bangalore, *SRELS Journal of Information Management*, 40(3), pp.255-265.

Brian Quinn (2002), Adapting service quality concepts to academic libraries, *The Journal of Academic Librarianship*, 28(4), pp. 224-231.

Brophy, Peter (1993), the quality program of the library and learning resources service at the University of Central Lancashire, *Aslib Information*, 21(6), pp.246-248.

Cathy Maskell, Jennifer Soutter and Kristina Oldenburg (2010), Collaborative Print Repositories: A Case Study of Library Directors Views, *The Journal of Academic Librarianship,* 36(3), pp.242-249.

Chamani Gunasekera (2012) Library usage pattern of the faculty members in the university of Peradeniya, Sri Lanka: a user survey, *SRELS Journal of the Information Management*, 49(5), pp.501-510.

Christina K. Pikas. (2006) The impact of information and communication technologies on informal scholarly scientific communication: a literature review University of Maryland College of Information Studies Informal Scholarly.

Cullen, Rowena, Calvert, Philip J. Stakeholder (1995), perceptions of university library effectiveness, *Journal of Academic Librarianship*, 21, pp.438-446.

D'Elia, George, and Eleanor Jo Rodger (1996), Public Library roles and patrons use: Why patrons use the library, *Public Libraries*, 33, pp.135-144.

Das, Suchitra (2000), Information Resources on Internet and Information services in Library and Information Centers, *SRELS, Journal of Information management,* 37(1), pp.49-58.

Date, Dhanashree A. and Gokhale, Pratibha A (1999), Implementation of ISO 9000 in Industrial Libraries*, Library Science with a Slant to Documentation and Information Studies*, 36(2), pp.65-72.

Derfert-Wolf, Lidia and Gorski, Marek M. and Marcinek, Marzena (2005), Quality of academic libraries - funding bodies, librarians and users perspective: a common project of Polish research libraries on comparable measures. In: proceedings 71st IFLA General Conference and Council, Olso (Norway).

Doraswamy,M (2007). Knowledge and use of digital library resources by engineering faculty members affiliated to Acharya NagarjunaUniversity,A P.Pearl, J*ournal of Library and Information Science*, 1(3*),* pp.32-39.

Doraswamy,M (2012) Information use pattern towards library services and facilities by the faculty ,members of Siddhartha Educational Institutions Vijayawadha,Andhra Pradesh: a study *International journal of Information Dissemination and Technology,* 2(3), pp.176-181.

Dow, Ronald F (1998), Using assessment criteria to determine library quality, *Journal of Academic Librarianship*, 24(4), pp.277-291.

Foster, M.B. (1989). A study of use of information sources by social science researchers. *Journal of Academic Librarianship* 15(1), pp.7-11.

Gayatri Mahapatra. (2006) Information needs of scientists and engineers in electronic environment: a case study of Indian exploration and production industry, *Annals of Library and Information studies*, 53(4), pp.173-183.

Gill, Jatindar Singh &Gurpreet , Singh. (2004) Information needs of research scholars in the faculty of Life Sciences,Guru Nanak Dev.University,Amritsar: a survey, *Library Progress*,24(2), pp.121-30.

Golnessa Galyani Moghaddam., & Talawar,V.G.(2008)The use of scholarly electronic journals at the Indian Institute of Science: a case study in India. Interlending & Document Supply, 36(1), pp.15–29.

Guruprasad,R &Khaisar Nikam.(2011) Use Patterns of Electronic Information Resources : By Aerospace Scientists and Engineers in Bangalore,India (paper back pp.540)VDM Verlag Dr.Muller.ISBN 978-3639321043.

Guthrie,Kevin M.(2002) Lessons from JSTOR. User Behaviour and faculty Attitudes. *Journal of Library Administration,* 36(3), pp.109-120.

Halima St Egberongbe (2012), Quality management in academic libraries in Nigeria.

Haruki Nagata, Yoshinori Satoh, Sarah Gerrard, Päivi Kytömäki, (2004), The dimensions that construct the evaluation of service quality in academic libraries, Performance Measurement and Metrics, 5(2), pp.53 – 65.

James A. Church (2004), filling in the gaps: Issues and strategies for collection development in United Nations Depository Libraries, *Journal of Government Information*, 30, pp.8–19.

James Hooks, Carl Rahkonen, Chris Clouser, Kelly Heider, Rena Fowler (2008), Information Literacy for Branch Campuses and Branch Libraries, *Library philosophy and practice*.

James T Mellon & David J Williams (2010), Applying best practices in web site redesign: the Queens College Libraries experience, *Educational Technology Papers. OCLC Systems Services,* 26(3), pp.177-197.

Jeannette Ho and Crowley, Gwyneth H (2003), User perceptions of the 'reliability' of library services at Texas A&M University, *Journal of Academic Librarianship*, 29(2), pp.82-87.

Karen Calhoun (2002), from information gateway to digital library management system: a case analysis, *Library Collections, Acquisitions, and Technical Services*, 26 (2), pp.141-150.

Kevin McGarry (1975), Computational knowledge and the Librarian, London, Clive Bingley.

Khan,Abdul Mannan &Naved,Ahmed (2009) Use of e-journals by research Sscholars at Aligarh Muslim University and Banaras Hindu University, *The E-Library,* 27(4), pp.108-117.

Kiran Kaur, Pauziaah Mohamad, Sossamma George (2006), Quality management service at the University of Malaya Library, Library Management; 27(4/5).

Kristin J. Henrich and Ramirose Attebury (2010), Communities of practice at an Academic Library: A New Approach to Mentoring at the University of Idaho, *The Journal of Academic Librarianship*, 36(2), pp.158-165.

Landrum, Hollis Land and Prybutok V. R. (2003), Service quality and success model for the information service industry*, European Journal of Operational Research*, pp.63-74.

Lindauer, Bonnie Gratch (1998), Defining and Measuring the Library's impact on campus wide outcomes, *College and Research Libraries,* pp. 546.

Li-Shan Chen (2008), Design and implementation of intelligent library system, *Library Collections, Acquisitions, and Technical Services*, 32(3-4), pp.127-141.

Manorama Tripathi and Sunil Kumar (2010), Use of Web 2.0 tools in academic libraries: A reconnaissance of the international landscape, *The International Information & Library Review*, 42(3), pp.195-207.

Marcos Andre Goncalves and Barbara Moreira (2007), what is a good digital library, A quality model for digital libraries, *Information Processing & Management*, 43(5), pp.1416-1437.

Margam Madhusudhan. (2008) Use of UGC-Infonet e-journals by research scholars and students of the University of Delhi. Delhi: A study, *Library Hi Tech,* 26(3), pp.369–386.

Mark H. Needleman (2007), the NISO Web Services and Practices Working Group, *Serials Review*, 33(2), pp.143-144.

Marulli, L. (1979), Documentation of the United Nations system: Coordination in its bibliographic control, Metuchen, NJ: Scarecrow Press.

Miranda, Silvania V, Tarapanoff, Kira M.A. (2008) Information needs and information competencies: a case study of the off-site supervision of financial institutions in Brazil. *Information research* .13(2).

Mohamed Haneefa,K ., & George, Sheerna. (2010) Web based information retrieval pattern of doctoral students in Calicut University*, Annals of Library and Information studies,* 57, pp.394-402.

Muhammad Tahir, IKhalid Mahmood, Farzana Shafique (2008), Information Needs and Information-Seeking Behavior of Arts and Humanities Teachers: A Survey of the University of the Punjab, Lahore, *Library philosophy and practice*.

Nancy Courtney, Fred W. Jenkins (1998), Reorganizing Collection Development and Acquisitions in A Medium-Sized Academic Library, *Library Acquisitions: Practice & Theory,* 22(3), pp.287–293.

Nancy H. Dewald (1999), Transporting good library instruction practices into the web environment: An analysis of online tutorials, The *Journal of Academic Librarianship*, 25(1), pp.26-31.

Nayana Darshani Wijayasundara (2008), Faculty - Library collection: A model for University of Colombo, *The International Information & Library Review*, 40(3), pp.188-198.

Niruba Sethukumari,S., & Thirumagal. A. (2012) Use of Digital resources of Kerala Institute of Tourism and travel studies library, *SALIS Journal of Information Management and technology*, 3(1), pp.63-67.

Opeke, Rosaline., Osunkunle, Sola & Okwilagwe, O.A. (2002) Information sources and utilization patterns of pharmaceutical scientists in Nigeria, *African Journal of Biomedical Research*, 5, pp.137–140.

Panda, K. C and Swain, & Dillip K (2011), E-newspapers and e-news services in the electronic age: an appraisal, *Annals of Library and Information Studies (ALIS),* 58 (1) pp.55-62.

Parameshwar S., &Patil.D.B.(2009) Use of the internet by faculty members and research scholars in Gulbarga University Library. *Library Philosophy and practice*. ISSN 1522-0222. http://unlib.unl.edu/Lpp/parameshwar.htm.

Parasuraman. A.,Valarie, Zeithaml, and Leonard L. Berry (1988), SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality, *Journal of Retailing*, 64, pp.12-40.

Paul B. Wiener (1982), Recreational reading services in academic libraries: An overview, *Library Acquisitions: Practice & Theory*, 6(1), pp. 59-70.

Pawan R. Agrawal (2011), Application of 'Six Sigma' in Libraries for Enhancing Service Quality, *International Journal of Information Dissemination and Technology*, 1(4), pp.203-206.

Pedramnia,S, Modiramani,P etal., (2012), This paper was originally presented at the QQML Conference in Athens, Greece between, pp.24-27.

Peter Brophy (2008), telling the story: Qualitative approaches to measuring the performance of emerging library services, Performance Measurement and Metrics, 9(1).

Peter Hernon (2002), Outcomes are key but not the whole story, *The Journal of Academic Librarianship*, 28(1-2), pp.54-55.

Peter Hernon (2002), Quality: new directions in the research, *Advances in Library Administration and Organization*, 26, pp.317-348.

Powell, Ronald R(1992), Impact Assessment of University Libraries, Library and Information Science Research, 14, p.254.

Rabinarayanan Misra.(2011) Information Use Patterns by Scientists: A Case Study of NEIST, Jorhat, North East India, *Library Philosophy and Practice* (e-journal). Paper 590 ISSN 1522-0222. http://digitalcommons.unl.edu/libphilprac/590.

Robert Danielson (2012), A dual approach to assessing collection development and acquisitions for academic libraries, Library Collections, Acquisitions, & Technical Services, 36, pp.84–96.

Shalini, Singh (2012), Right to Information and Information Literacy: An Indian Perspective, *SRELS, Journal of Information Management*, 49(1), paper-A, pp.5-19.

sheffieldischoolresearchers.blogspot.com/.../quality-management-in-a.

Shera, Jesse Hauk (1999), In American National Biography, 19, New York: Oxford University Press, pp.215-226.

Shera, Jesse Hauk (1999), In American National Biography, 19, New York: Oxford University Press, pp.135-146.

Shiva Kanauja Sukula., & Neeraj Malik.(2011). E-journal growth, usage and pattern study at Ch. Charan Singh University Library, *Information Age*, 5(1), pp.7-12.

Shukla, Akhandanand & Tripathi, Aditya (2010), Establishing content awareness evaluation criteria for library websites: a case study of Indian academic library websites, *Annals of Library and Information Studies (ALIS)*, 57(4), pp.403-416.

Snoj, Boris and Peremanes, Zdenka (2001), Let users judge the quality of faculty library services, *New Library World*, 102(1168), pp.314-324.

Somaratna, Sajeewanie D. & Peiris, Colin N. (2011), Service quality in University of Colombo libraries: an assessment, *Annals of Library and Information Studies (ALIS),* 58(2), pp.170-183.

Sunil Tyagi (2011) Scientist perception of use of electronic Information resources a case study of pharmacopoeia laboratory for Indian medicine, *India Philosophy and practice*, Annual Volume, ISSN 1522-0222.Report No.9.

Surender, H.S. Chopra (2011), Digitization of Resources in University Libraries in India, *International Journal of Information Dissemination and Technology*, 1(3), pp.128-137

Suvra Chandra (2012) A survey of use of electronic resources at Narula Institute of technology Library and Documentation centre, *SRELS Journal of Information Management,* 49(5), pp.569-575.

Tapas Kumar Ghosh, K.C. Panda (2010), Library Collections, Acquisitions, & Technical Services, 34, pp.45–50.

Thanuskodi, S (2011) User awareness towards using information and communication technology (ICT) in government arts and Science Colleges in Southern Tamil Nadu: An analytical study. International Journal of Science and Technology Education Research, 2(6), pp.98–105.

Thanuskodi, S (2012) Awarness of web2.0 among participants of the 3rd LIS refresher course in Bharathidasan University. *SRELS Journal of Information Management*, 49(6), pp.655-661.

Thanuskodi.S, & Ravi.S.(2011) Use of digital Resources by Faculty and Research scholars of Manonmaniam

Sundaranar University, Tirunelveli, *DESIDOC Journal of Library & Information Technology*, 31(1), pp.25-30.

Tilwani,T.D., &Satish Kumar.(2007) Information use pattern of social scientists from web –based Information Resources, *A pilot study-ILA Bulletin,* 43(4), pp.16-24.

UN Dag Hammarskjo ld Library (1995), Principles governing United Nations Depository Libraries, New York, United Nations (ST/AI/189/Add.11/Rev.2. Masthead.

UN Department of Public Information (2003), The United Nations system: Principal organs of the United Nations. New York: United Nations (DPI/2299).

UN Department of Public Information (2003), United Nations publications catalog, New York: United Nations.

Verma, R. K. (2002), Measuring quality management level with reference to ISO 9000 and TQM for special libraries in India, *Annals of Library Science and Information Studies*, 49(4), pp.141-163.

Vijayakumar, M., Kannappannavar., Jnana Sahyadri., &Samir Kumar Jalal (2009) Use of Library services in Technologically Changing environment: a survey, *SALIS Journal of Library an Information Science.* 1(1), pp.19-25.

Walmiki, R.H. Ramakrishnegowda, K.C. & Prithviraj (2010), Awareness and use of UGC-Infonet digital library consortium by the faculty members of Karnataka state universities, *Annals of Library and Information Studies (ALIS),* 57(1), pp.33-43.

Wilson. T.D (1981), one user studies and information needs the journal of documentation, 37(1), 3-15.

Wyoma van Duinkerken (2009), Bringing public services experience to technical services: Improvements in practice, *Library Collections, Acquisitions, and Technical Services*, 33(2-3), pp.51-58

Wysoki,A. (1989), A study of Users Information Needs: Subject and Methods in International Federation for Documentation on Theoretical Problem of Informatics, Moscow, All Union Institute for Scientific and Technical Information, pp.69-75.