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Indian Journal of Library and Information Science

Contents

Authorship Pattern in the Humanities Journal of Annamalai University: A Bibliometric Analysis

V. Senthilkumar*, K. Sanjeevi*

Abstract

The present study deals with a Bibliometric analysis of research output in the Humanities Journal of Annamalai University.The authors have analyzed the year-wise publication, authorship pattern, department wise contributions, etc., during the period from 2007 to 2011.

Keywords: Bibliometric; Authorship Pattern; Annamalai University; Citations.

Introduction

The Bibliometric study is one of the most interested topics in Library & Information Science subject to do research. The bibliometric methods have been used to trace the relationships among academic journal citations and it is a set of method used to study or measure texts and information. The word "bibliometrics" has two roots namely "biblio" and "metrics". The term 'biblio' is derived from the combination of a Latin and Greek word "biblion" equivalent to Bybl (OS) meaning book. The word "metrics" indicates the science of meter, i.e., measurement and is derived from Greek word "metricas".

According to Pritchard (1969), Bibliometrics is the application of mathematical and statistical analysis to bibliographic Units. When statistical methods were applied to analyze bibliographies, a new discipline in information science emerged, known as "Bibliometrics".

The laws of Bibliometrics facilitate to achieve the said objective. The following three laws are used in Bibliometrics study:

(a) Lokta's Law of productivity of authors contributing in a discipline or other fields,

(b) Bradford's Law of scattering of articles over different journals and

(c) Zipf's Law for frequency occurrence of words in a text (word count).

Review of Literature

The review of related literature is a significant and primary component in any research investigations. It enables to understand the earlier research interests, research pattern and magnitude of research output in the field of knowledge. More number of works has been carried out in Bibliometrics study. The few related reviews are highlighted below.

Umamaheswari (2008) has analyzed the authorship pattern, the range and frequency of references cited. The maximum number of papers published in the 'Indian Journal of Agronomy' during the study period was 136 in 2001 and minimum number of papers was 83 in 2004. Sanjeevi and Mahendran (2011) have studied the research productivity on Lagoons. Further, the authors analyzed the year-wise publication, authorship pattern and form-wise publication on Lagoons. Swain and Panda (2012) have conducted a bibliometrics study on Journal of Intellectual Property Rights from 2002 to 2010 and found that due to absolute domination of solo contributions, the visibility of collaborative contribution was found remarkably less. Sudhier Pillai (2013) has analyzed the author productivity in Physics research by using Lotka's Law. Tilak et al. (2015) have studied authorship inflation. They analyzed the authorship count, study type and size of study population in Medical publications during 1960-2010.

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Methodology

The primary data has been collected from the Humanities Journal of Annamalai University which is publishing annually. The secondary data were collected from the Journal articles, books, reviews and online sources. The simple percentage method is adopted for data analysis.

Objectives

1. To study the year-wise publications of the article;

2. To analyze authorship pattern;

3. To find out department-wise contributions;

4. To study the citations of published articles.

Results

The year-wise publication of the Journal and contributions in each year has been given in Table-1.

Table 1: Year-wise publication

S. No	Year	No. of Article published	Percentage
1.	2007	49	22.68
2.	2008	58	26.85%
3.	2009	–	–
4.	2010	41	18.98%
5.	2011	68	31.48%
	Total	216	100

Totally 216 articles were published during the period from 2007 to 2011. The journal was not published during 2009. From the above observation, it noticed that the contributions of articles are in increasing trend. The highest number of articles contributed 68 (31.48%) in the year 2011 and the minimum number of articles (41) published which is 18.98% in 2010.

Tale 2: Authorship Pattern

S. No.	Year	Authors			
		Single	Double	Triple	Multiple
1.	2007	29	12	06	02
		(59.18%)	(24.48)	(12.24)	(04.08%)
2.	2008	27	24	06	01
		(46.55%)	(41.37%)	(10.34%)	(01.72)
3.	2009	-	-	-	-
4.	2010	25	13	02	01
		(60.97%)	(31.07%)	(04.87)	(02.43)
5.	2011	38	24	06	-
		(55.09%)	(35.29%)	(08.82%)	
	Total	119	73	20	04
		(55.09%)	(33.79%)	(09.25%)	(01.85)

The authorship pattern of the research contributions in Humanities Journal of Annamalai University are given in Table 2. Totally 216 articles were published during the study period. Single author contributed 119 articles it account of 55.09%, followed by double, triple and multiple author- 73 (33.79%), 20 (09.25%) and 4 (01.85%) respectively.

Table 3: Department-wise contribution

S. No.	Department	2007	2008	2010	2011	No. of articles published
1.	Commerce	02	05	-	01	08 (3.70%)

S. No.	Department					Total
2.	English	09	07	06	10	32 (14.81%)
3.	Economic	11	07	03	07	28 (12.96%)
4.	History	5	11	12	16	44 (20.37%)
5.	Library & Information Science	-	01	-	04	05 (02.31%)
6.	Business Administration	08	06	02	04	20 (09.25%)
7.	Political Science	05	11	05	07	28 (12 .96%)
8.	Population Studies	02	-	-	03	05 (02.31%)
9.	Philosophy	01	01	07	03	12 (05.55%)
10.	Rural Development	-	-	-	02	02 (0.92%)
11.	Sociology	06	09	06	07	28 (12.96%)
12.	Linguistics	-	-	-	04	04 (01.85%)
	Total	49 (22.68%)	58 (26.85%)	41 (18.98%)	68 (31.48%)	216

The articles contributed among the departments are given in Table 3. The department of History has contributed 44 (20.37%) and occupied first position, followed by department of English 32 (14.81%) and departments of Economics & Political Science 28 (12.96%) occupied second and third positions.

Table 4: Citations in published articles

S. No.	Year	Books	Journal	Reports	Others	Total	Percentage
1.	2007	379 (64.49%)	153 (26.84%)	07 (01.22%)	31 (05.43%)	570	20.72%
2.	2008	312 (41.48%)	328 (43.61%)	53 (07.04%)	59 (07.84%)	752	27.34
3.	2009	-	-	-	-	-	-
4.	2010	482 (79.27%)	87 (14.30%)	17 (02.79%)	22 (03.61%)	608	22.10
5.	2011	292 (35.61%)	431 (52.56%)	20 (02.43%)	77 (9.39)	820	29.81
	Total	1465 (53.27)	999 (36.32%)	97 (03.52%)	189 (06.87%)	2750	

The citations in the published articles are categorized viz., Books, Journal, Reports, others. Totally 2750 citations were referred in 216 published articles. Out of 2750 citations, majority of the authors cited books 1465 (53.27%) followed by Journal 999 (36.32%) and Reports 97 (03.52%).

Findings

♦ The highest number of articles (68) published in the year 2011.

♦ Among the department-wise contributions, History department is contributed more articles

(44) compared to other departments during the study period.

♦ Majority of authors referred Book as a cited source (53.27%).

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Study of University Websites based on Selected Evaluation Criterias

Manjunath G. Lamani*, Keshava**

Abstract

In the era of information, websites play an important role to store and disseminate the information everywhere on the globe. Days have changed from personal visits and manual doings things to online. Anybody can register, watch, do marketing, do business, share ideas, book a ticket and exchange knowledge. And many more stuffs can be done over internet through websites. This process has entered almost every activity of an institution, academia, and research and development organization. In this context, it is the need of the hour to make an evaluative study of university website to investigate its authority; purpose and coverage; currency; objectivity; graphics; use of colour; contents; legibility; hyperlinks; promotion; searching and FAQ etc. In the present study- an attempt has been made to evaluate 27 university websites based on selected criteria's viz authority; purpose; coverage and currency of the websites. The results of the study indicate that the users do not aware the information about website designer. The link to library and its resources in the websites meet the academic needs. It is also found from the survey that the contact information is available in the university website and there is a consistency in the domain name.

Keywords: Website Evaluation; Evaluation Criteria's; South Indian Universities; Library Websites; Research Scholar; Faculty; Webmasters.

Introduction

Information has been identified as one of the important resources required for the success in every major human venture. The demands of information users and researchers are increasing day-by-day. Old technologies of information exchange are being replaced by new technologies and methods. Internet is a helping hand in this connection. Every corporation, organization, institutions attempts to launch itself into the virtual world using this modern phenomenon that is the reason, web has become a part of academician's everyday life. Many campuses are requiring students to have computers to take advantage of Web accessible classrooms, and many educators are incorporating the Web into their curricula. Hence the role of library and information professionals also changing everywhere to facilitate the need based resources. Every university is key role in hosting the latest and updated information available on their websites for the public, students, and research scholars. It will surely create the strong positive image of the higher learning education institute.

Therefore website has become an essential medium for information exchange of ideas, knowledge for the research & development and advancement of research activities at anywhere in the world. When we observe the increase in the design and development of websites from the last ten years, it shows the need and changing behaviours of users towards information and communication technology. So it is important to study about reliability, usefulness and up datedness of the website on a regular basis is very much needed. A lot can happen over internet, through websites. The success of website integrates on how much users consider the information on the website. Online or Web services rendered through websites has found significant momentum in both academia and research community in recent years. Collection,

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organization and dissemination of information with economy and efficiency depend on the skills and expertise of the library and information science professionals.

Objectives of the Study

The objectives are as follows:

1. To find out the authority of the website design;

2. To reveal the domain names;

3. To rate the contents;

4. To observe the links to other educational institutions links available;

5. To examine the coverage;

6. To check the currency.

Methodology

Questionnaire is reasonably most convenient tool for collecting research data from large, varied and scattered group of respondents. For the present study questionnaire method has been adopted to collect data. A pilot study has been undertaken. Based on the review of literature; feedback and suggestion recommended by the students; researchers; faculties and the expert's opinion driven from the pilot study, the questionnaire has been redesigned. There are 96 universities in south Indian states. We have selected twenty universities; based on the UGC- NAAC/ AICTE accreditation.

The sample size is drawn on the basis of sampling techniques proposed by Robert V Krejcie and Daryle W Morgan. According to sampling technique given by them, a total of 977 questionnaires were distributed with 99.0% confidence level, at 0.035 degree of accuracy. A total of 815 questionnaires were received back with 83.42% of response.

Scope and Limitations

Present study confined to websites of twenty seven universities of the South Indian states viz., Karnataka, Andhra Pradesh, Kerala and Tamil Nadu. The respondents are students, research scholars, faculty, and others. Others include webmasters, technical assistants, and computer science lab in charge and so on.

Data Analysis

Criteria -1: Authority

Table 1: Availability of information about website designer

Response	Respondents				Total
	Students	**Research Scholars**	**Faculty Members**	**Others**	
Yes	91 (18.2)	231 (46.2)	147 (29.4)	31 (6.2)	500
No	59 (18.7)	174 (55.2)	76 (24.1)	6 (1.9)	315

p=0.00

Table 1 deals with availability of information about the website designer. Authority indicates that the person, institution, or an agency responsible for website has the knowledge or qualifications to do so and in this connection, responses towards authority of the library website have been obtained.

It is revealed from the table that out of 500 respondents who have opined positively, 46.2% of the research scholars opined that information is available followed by faculty members (29.4%); students (18.2%) and others 6.2%) whereas, out of 315 respondents have opined negatively, 55.2% of the research scholars opined that the information about the website designer is not available on the website followed by faculty members (24.1%); students (18.7%) and others (1.9%).

It is clear from the data depicted on the table that there is no consistency in the opinion of the respondents. The Chi-square value p=0.005 show significant. Therefore, it is inferred that the respondents are not aware of the information about website designer.

Table 2: Links to the library

Response	Respondents				Total
	Students	**Research Scholars**	**Faculty Members**	**Others**	
Yes	149 (18.8)	396 (49.9)	213 (26.8)	36 (4.5)	794
No	1 (4.8)	9 (42.9)	10 (47.6)	1 (4.8)	21

p = 0.13

A question was asked to know whether the university websites have links to library and its resources to meet the academic need of the respondents. The responses obtained have been depicted in the table 2. It reveals that majority (49.9%) of the research scholars agreed with the view that the university website links to library meet their academic needs followed by faculty members (26.8%); students (18.8%) and others (4.5%). Whereas out of 21 respondents who did not agree that library link meet the academic need majority (47.6%) of the faculty members opined negatively followed by research scholars (42.9%); students and others (4.8% respectively).

The data in the table clearly shows that the link to library resources will meet the academic need of the

respondents. The Chi-square value p=0.13 shows highly insignificant means. There is association between responses and the different types of respondents. Therefore, it is inferred that the link to library and its resources in the university website meet the academic needs of the respondents across universities.

Table 3: Availability of contact information

Response	Respondents				Total
	Students	Research Scholars	Faculty Members	Others	
Yes	149 (18.8)	396 (49.9)	213 (26.8)	36 (4.5)	794
No	1 (4.8)	9 (42.9)	10 (47.6)	1 (4.8)	21

P = 0.58

The table 3 reveals that majority (49.9%) of the research scholars said contact information is available in the university website followed by faculty members (26.8%); students (18.8%) and others (4.5%) whereas 47.6% of the faculty members opined that the contact information is not available in the website followed by research scholars (42.9); students and others (4.8% each). There is an association between the response and types of respondents.

It is also statistically proved by x^2 analysis (p=0.58) indicate highly insignificant. Therefore, it clearly indicates that contact information is available in the university website.

Table 4: Rating of contact form

Attributes	Rating scale	Respondents				Total
		Students	Research Scholars	Faculty Members	Others	
Clarity of Information	Poor	4 (25.0)	7 (43.8)	3 (18.8)	2 (12.5)	16
	Average	31 (20.7)	72 (48.0)	40 (26.7)	7 (4.7)	150
	Good	62 (16.7)	180 (48.4)	111 (29.8)	19 (5.1)	372
	Very Good	27 (14.9)	96 (53.0)	50 (27.6)	8 (4.4)	181
	Excellent	26 (27.1)	50 (52.1)	19 (19.8)	1 (1.0)	96
		Mean= 3.23	**CV=29.36**		**p=0.20**	
Response of contact information Form	Poor	82 (20.5)	199 (49.8)	99 (24.8)	20 (5.0)	400
	Average	38 (19.7)	86 (44.6)	59 (30.6)	10 (5.2)	193
	Good	17 (11.8)	76 (52.8)	44 (30.6)	7 (4.9)	144
	Very Good	10 (17.5)	29 (50.9)	18 (31.6)	0 (0)	57
	Excellent	3 (14.3)	15 (71.4)	3 (14.3)	0 (0)	21
		Mean= 1.9	**CV=56.86**		**p=0.19**	

Table 4 depicts the rating of clarity of information available on the university website. It shows that 53.0% of Research scholars opined very good followed by faculty members (27.6%). 52.1% of faculty members also opined excellent followed by students (27.15%).

Therefore, the clarity of information on the website is good. This is also proved statistically. The x^2 analysis (*p*=0.201, Mean=3.23, CV = 29.36) indicate highly insignificant. Therefore, there is association between rating scales and types of respondents on clarity of information. It is inferred that the clarity of information on university website is good.

With regard to response of contact information from 49.8% of research scholars rated poor followed by faculty members (24.8%) and students (20.5%) whereas 44.6% of the research scholars rated average followed by faculty members (30.6%); others (5.2%)

while 52.8% of research scholars rated good followed by faculty members (30.6%). More than seventy percent research scholars rated excellent followed by students and faculty members (14.3% each).

From the data in the table, it is clear that the availability of contact information form on the website is average. It is not up to the mark as expected by the respondents. This is also proved by x^2 analysis (*p*=0.19) indicate highly insignificant. The co-efficient of variation value 56.86 and mean value 1.9 also supports the same. Therefore, the contact information form available across universities is average.

Criteria- 2: Purpose

Table 5 shows the domain name of the university website. It is revealed from the table that 45% of

Table 5: Domain names

Domain	Respondents				Total
	Students	Research Scholars	Faculty Members	Others	
.in	1 (6.2)	14 (87.5)	1 (6.2)	0 (0)	16
.com	0 (0)	3 (75.0)	1 (25.0)	0 (0)	4
.edu	26 (22.6)	64 (55.7)	21 (18.3)	4 (3.5)	115
.ernet	0 (0)	0 (0)	2 (100)	0 (0)	2
.info	1 (3.4)	19 (65.5)	9 (31.0)	0 (0)	29
.ac	122 (19.7)	279 (45.0)	186 (30.0)	33 (5.3)	620
.gov	0 (0)	25 (89.3)	3 (10.7)	0 (0)	28
thers	0 (0)	1 (100)	0 (0)	0 (0)	1

p=0.00

research scholars stated '.ac' as domain name followed by faculty members (30%); students (19.7%) and others (5.3%) while out of 115 respondents who have stated '.edu' as domain name, 55.7% of them research scholars followed by students 922.6%) faculty members (18.3%) and others (3.5). It is also noted that out of 29 respondents who have stated .info, 65.5% of them research scholars; 31% faculty members.

It is clear that majority of the university website domain name is '.ac' and it is also statistically proved by x^2 analysis (p=0.00) indicate highly significance. There is a consistency in the domain name and the types of respondents' opinion. Therefore, the domain name of the university website is '.ac'.

Table 6: Appropriateness of the domain name

Response	Respondents				Total
	Students	Research Scholars	Faculty Members	Others	
Yes	145 (18.3)	394 (49.7)	217 (27.4)	37 (4.7)	793
No	5 (22.7)	11 (50.0)	6 (27.3)	0 (.0)	22

The table 6 reveals that out of 793 respondents who have opined that domain name of the website is most appropriate, 49.7% of the research scholars followed by faculty members (27.4%); students (18.3%) and others (4.7%) whereas only few (22) respondents were said the existing domain name of the website is not appropriate.

It is observed that the domain name of the website is most appropriate. It is also proved by x^2 analysis (p=0.73) indicate highly insignificant. There is a consistency in the opinion of the respondents across university. Therefore, it is inferred that the domain name is appropriate.

Table 7: Availability of information to specific users

Response	Respondents				Total
	Students	Research Scholars	Faculty Members	Others	
Yes	144 (18.6)	382 (49.4)	212 (27.4)	36 (4.7)	774
No	6 (14.6)	23 (56.1)	11 (26.8)	1 (2.4)	41

p=0.77

From the findings (table 7), it is seen that out of 774 respondents who stated information is available to specific users on the website, 49.4% of them were research scholars followed by faculty members (27.4%); students (18.6%) and others (4.7%) whereas out of 41 respondents who have not agreed, majority (56.1%) of them research scholars followed by faculty members.

It is clear from the analysis that the university website contains information to specific users. This is supported by Chi-square values 0.77 indicate highly insignificant. There is a clear association between the responses and the respondents. Therefore, it is inferred that information is available to specific users on the website of universities in south India.

Table 8: Ratings of information contents

Attributes	Ratings		Respondents			Total
	Scales	Students	Research Scholars	Faculty Members	Others	
information contents on the website suits the purpose of the website	Poor	2 (8.7)	11 (47.8)	8 (34.8)	2 (8.7)	23
	Average	22 (15.9)	72 (52.2)	38 (27.5)	6 (4.3)	138
	Good	71 (17.9)	193 (48.7)	113 (28.5)	19 (4.8)	396
	Very Good	35 (19.1)	94 (51.4)	47 (25.7)	7 (3.8)	183
	Excellent	20 (26.7)	35 (46.7)	17 (22.7)	3 (4.0)	75

p=0.81

A question was posed to know the rating of information contents uploaded by the concerned university authorities. Table 8 depicts the rating of information contents on the websites. Out of 75 respondents who rate excellent, more than forty six per cent of the research scholars followed by students (26.7%) rated excellent.

In the meanwhile, there are 396 respondents who rated good out of which 48.7% of them research scholars followed by faculty members (28.5%); students (19.1%) and others (4.8%). Out of 138 respondents, it is evidenced from the above table that the information contents uploaded to university

website is good. This is also supported by x^2 analysis (*p*=0.81) indicate highly insignificant. There is an association between the rating scale and the types of respondent. Therefore, it is inferred that the information content on the website was agreed by majority of the respondents across the universities.

Criteria 3: Coverage

Table 9: Links to other educational institutes

Attributes	Respondents				Total
	Students	Research Scholars	Faculty Members	Others	
Yes	45 (15.0)	161 (53.5)	79 (26.2)	16 (5.3)	301
No	105 (20.4)	244 (47.5)	144 (28.0)	21 (4.1)	514
Total	150 (18.4)	405 (49.7)	223 (27.4)	37 (4.5)	815

p=0.14

Table 9 reveals that out of 514 respondents who stated there is no links to other educational institutes, 47.5% of them were research scholars followed by faculty members (28%); students (20.4%) and others (4.2%) whereas out of 301 respondents said the website have links to other educational institutes of which 53.5% of them research scholars followed by faculty members (26.2%); students (15%).

It is clear from the analysis that the majority of the university websites do not have links to other educational institute. This is statistically proved by x^2 analysis (p=0.14) indicate highly insignificant. Therefore, it is inferred that the university websites do not have links to other educational institutes across universities in south India.

Table 10: Ratings of website coverage

Attributes	Rating scale	Respondents				Total
		Students	Research Scholars	Faculty Members	Others	
Information detail	Poor	0 (0)	4 (40.0)	5 (50.0)	1 (10.0)	10
	Average	33 (19.1)	91 (52.6)	42 (24.3)	7 (4.0)	173
	Good	60 (15.7)	188 (49.1)	116 (30.3)	19 (5.0)	383
	Very Good	42 (22.1)	94 (49.5)	47 (24.7)	7 (3.7)	190
	Excellent	15 (25.4)	28 (47.5)	13 (22.0)	3 (5.1)	59
	Mean=3.14		**CV=27.85**		***p* =0.36**	
Comparison to other website	Poor	2 (14.3)	6 (42.9)	5 (35.7)	1 (7.1)	14
	Average	29 (15.1)	101 (52.6)	50 (26.0)	12 (6.2)	192
	Good	74 (19.5)	176 (46.3)	115 (30.3)	15 (3.9)	380
	Very Good	37 (19.5)	103 (54.2)	44 (23.2)	6 (3.2)	190
	Excellent	8 (20.5)	19 (48.7)	9 (23.1)	3 (7.7)	39
	Mean=3.05		**CV=27.86**		***p* =0.58**	
Related Source links	Poor	1 (4.0)	11 (44.0)	11 (44.0)	2 (8.0)	25
	Average	36 (18.2)	106 (53.5)	46 (23.2)	10 (5.1)	198
	Good	64 (17.9)	165 (46.2)	112 (31.4)	16 (4.5)	357
	Very Good	37 (22.0)	90 (53.6)	35 (20.8)	6 (3.6)	168
	Excellent	12 (17.9)	33 (49.3)	19 (28.4)	3 (4.5)	67
	Mean=3.06		**CV=30.89**		***p* =0.19**	
Ability to meet the requirements	Poor	1 (7.7)	5 (38.5)	6 (46.2)	1 (7.7)	13
	Average	28 (15.5)	88 (48.6)	54 (29.8)	11 (6.1)	181
	Good	59 (17.6)	165 (49.1)	97 (28.9)	15 (4.5)	336
	Very Good	39 (18.5)	116 (55.0)	49 (23.2)	7 (3.3)	211
	Excellent	23 (31.1)	31 (41.	17(23.0)	3 (4.1)	74
	Mean=3.18		**CV=29.34**		***p* =0.15**	

Table 10 gives the ratings of website coverage. With regard to information details, out of 393 respondents who rated good, majority (49.1%) of them are research scholars followed by faculty members (30.3%); students (15.7%) and others (5%) whereas out of 190 respondents who rated very good, (49.5%) of them are research scholars followed by faculty members (24.7%). It is also interesting to note that there are 59 respondents who rated excellent, of which majority of them are research scholars, followed by students (25.4%) while only few respondents rated poor. It is clear from the analysis that the website coverage is good. It is also supported by x^2 analysis (p=0.36) indicate highly insignificant. The mean value 3.14 and co-efficient of variation 27.85 shows consistency in the responses. Therefore, it is inferred that the website coverage across universities is good.

With regard to comparison to other website, it is found that a total of 380 respondents who rated good, more than forty five per cent of them research scholars followed by faculty members (30.3%); students (19.5%) whereas a total of 192 respondents rated average of which more than fifty per cent of them research scholars followed by faculty members (26%). Only 39 respondents rated excellent of which majority of them research scholars followed by faculty members. It is clear from the analysis that compare to other website, the university website is good. The mean value 3.05 and co-efficient of variation value 27.86 indicates that there is a consistency in the rating scales across universities.

The x^2 analysis (p=0.58) indicate highly insignificant. Therefore, it is inferred that compare to other website, the existing university website is good in all respect.

With regard to related source links on the website it is found that majority (46.2%) of the research scholars rated good followed by faculty members (31.4%); students (17.9%) and others (4.5%). It is also statistically proved by x^2 analysis (p=0.19) indicate highly insignificant. The mean value 3.06 and co-efficient of variation 30.89 shows that there is an association between the rating scales and the types of respondents. Therefore, it is inferred that the existing university website have related source links across universities in south India.

With regard to ability to meet the requirement, it is found that majority of the research scholars opined good followed by faculty members (28.9%); students (17.6%) and others (4.5%). It is also supported by x^2 analysis (p=0.15) indicates highly insignificant. The mean values 3.18 and co-efficient of variation value 29.34 also indicate that the university websites will meet the requirements of the respondents. Therefore, it is inferred that the university website meet the requirements of the respondents.

Table 11: Ratings of websites in terms of Currency

Attributes	Rating scale	Respondents				Total
		Student	Research Scholars	Faculty Members	Others	
Currency	Poor	8 (26.7)	8 (26.7)	12 (40.0)	2 (6.7)	30
	Average	31 (16.1)	103 (53.6)	53 (27.6)	5 (2.6)	192
	Good	53 (16.0)	164 (49.5)	95 (28.7)	19 (5.7)	331
	Very Good	37 (18.7)	100 (50.5)	52 (26.3)	9 (4.5)	198
	Excellent	21 (32.8)	30 (46.9)	11 (17.2)	2 (3.1)	64
		Mean=3.098	CV=31.25	p=0.04		
Links visibility	Poor	0 (0)	8 (57.1)	6 (42.9)	0 (0)	14
	Average	21 (16.2)	67 (51.5)	36 (27.7)	6 (4.6)	130
	Good	62 (16.8)	179 (48.4)	109 (29.5)	20 (5.4)	370
	Very Good	45 (19.7)	118 (51.5)	57 (24.9)	9 (3.9)	229
	Excellent	22 (30.6)	33 (45.8)	15 (20.8)	2 (2.8)	72
		Mean=3.26	CV=27.3	p=0.21		
Links reliability	Poor	0 (.0)	2 (50.0)	2 (50.0)	0 (0)	4
	Average	23 (15.5)	75 (50.7)	41 (27.7)	9 (6.1)	148
	Good	61 (16.7)	181 (49.5)	109 (29.8)	15 (4.1)	366
	Very Good	44 (19.4)	119 (52.4)	55 (24.2)	9 (4.0)	227
	Excellent	22 (31.4)	28 (40.0)	16 (22.9)	4 (5.7)	70
		Mean=3.25	CV=26.7	p=0.26		

Criteria 4: Currency

Table 11 deals with rating of website in terms of currency, links visibility and links reliability. In terms of currency majority (49.5%) of the research scholars rated good, followed by faculty members (28.7%); students (16%) and others (5.7%). It is clear from the analysis that the up datedness of website is good. This is also supported by x^2 analysis (p=0.04) indicate significant. The mean value 3.09 and co-efficient of variation 31.25 also statically proved. There is a consistency in responses obtained. Therefore, it is inferred that the universities in south India update website.

With regard to links visibility, a total of 370 respondents rated good of which majority (48.4%) of them are research scholars followed by faculty members (29.5%); students (16.8%) whereas a total of 229 respondents rated very good followed by average (130); excellent (72) and poor (14). Therefore, from the data depicted it is clear that links visibility is good. This is also statistically proved by x^2 analysis (p=0.21) indicate highly insignificant. The mean value 3.26 and co-efficient of variation 27.3 also proves it. There is an association between the rating scales and types of respondents. Therefore it is inferred that the links visibility on the website is good.

While observing the links reliability, majority of the research scholars rated good followed by faculty members (29.8%); students (16.7%) and others (4.1%). It is also proved by x^2 analysis (p=0.26) indicate highly insignificant. The mean values 3.25 and co-efficient of variation 26.7 also indicate that there is an association between the rating scale and the types of respondents. Therefore, it is inferred that the links reliability is good.

Major Findings

The findings of the study are as follows:

1. Majority of the respondents are not aware of the information about website designer.

2. The link to library and its resources on the website meet the academic needs of the respondents across universities.

3. The majority of the websites have the contact information.

4. It is also found that majority of the universities haven't provided the contact form to seek feedback.

5. Majority of the universities have the domain name as .ac. in.

6. The domain name of the university website is appropriate.

7. Contents of the website holds good.

8. Majority of the university websites do not have links to other educational institutes.

9. The coverage of website contents across universities holds good.

10. Majority of the universities update the content of the website.

Conclusion

With the current increase in mobile internet users, population continues to grow even faster worldwide (Smith, 2012). University websites are portals that provide services and information to their visitors. They usually provide services, and also designed to provide content and services that serve different stakeholders' needs, including students, faculty, researchers and alumni. Prospective students can seek information about admission issues, current students can enquire about their results or register for new courses, staff can follow the university's latest news and alumni can seek announcements regarding job openings. There are some strong recommendations from the respondents of the present study that every university library must have the independent library website so that they can have what they want. Since library is only one point access wherein it should provide the career, personality development, higher education, research oriented and placements related information to the students and faculty. Websites play a major role in promoting the online resources. So that the ultimate goals, vision and mission of the higher learning centres could be achieved through such initiatives.

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American Sociological Review (2010-2014): A Bibliometric Study

Jamal Ahmad Siddiqui*, Mamta Kumari**

Abstract

The study is based on the Bibliometric analysis of 204 research papers published in five volumes of 30 issues of American Sociological Review published during 2010 to 2014. The paper review the authorship pattern of the contributors, number of articles published in each issue, Geographical distribution of authors and length of each paper in five volumes. The study also reveals the number of articles published in each issue during the period 2010 to 2014.

Keywords: Bibliometric; American Sociological Review; Authorship Pattern; Geographical Distribution.

Introduction

The American Sociological Association is well positioned to provide a unique set of services to its member and to promote the vitality, visibility, and diversity of the discipline. Working at the national and International levels, the Association aims to articulate policy and implement programs likely to have the broadest possible impact for sociology now and in the future.

The American Sociological Review is a bimonthly peer-reviewed academic journal covering all aspects of sociology. It is published by sage publications on behalf of the American Sociological Association.

The American Sociological Review is the flagship journal of the American Sociological Association (A.S.A.). The A.S.A. founded this journal in 1936 (Volume 1st with the mission to publish original works of interest to the Sociology discipline in general, new theoretical developments, results of research that advance our understanding of fundamental social processes; and important Methodological innovations. All areas of Sociology are welcome in the American Sociological Review. Emphasis is on exceptional quality and general interest.

American Sociological Review affairs online first, by which forth coming articles are published online before they are scheduled to appear in print.

Objectives

♦ Articles published per Volume

♦ Authorship pattern of paper published

♦ Authorship Pattern of Contribution (Volume wise)

♦ Geographical distribution of publications (State wise)

♦ Study of length of paper

♦ To know the Reference pattern

Methodology

The present study deals with a peer reviewed journal "American Sociological Review" (ASR) as the source journal. The thirty issues of five volumes from 2010 to 2014 (Volume 75 to Volume 79) have been selected for the present study. The papers published in these volumes have been downloaded from CCS University website (webpage e-journals subscribed). 204 papers have been published during the five year and these papers are then entered in MS Excel sheets to identify the variables of the objectives of study. The data converted into tables to examine the results.

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Table 1: Number of Articles per volume time and age Combative

Volume	Year of Publication	No. of Article	Article Percentage
Volume 75	2010	38	19%
Volume 76	2011	38	19%
Volume 77	2012	40	20%
Volume 78	2013	40	20%
Volume 79	2014	48	22%
		204	**100%**

Data Analysis and Interpretation

A total of 204 contributions have been published in five years 2010-2014. Table 1 gives the details regarding the distribution of 204 contribution published from 2010-2014. Maximum number of contributions 48 (22%) were published in 2014 followed by 40 (40.20%) in 2012 and 2013. However, only 38 (19%) papers were published in 2010 and 2011.
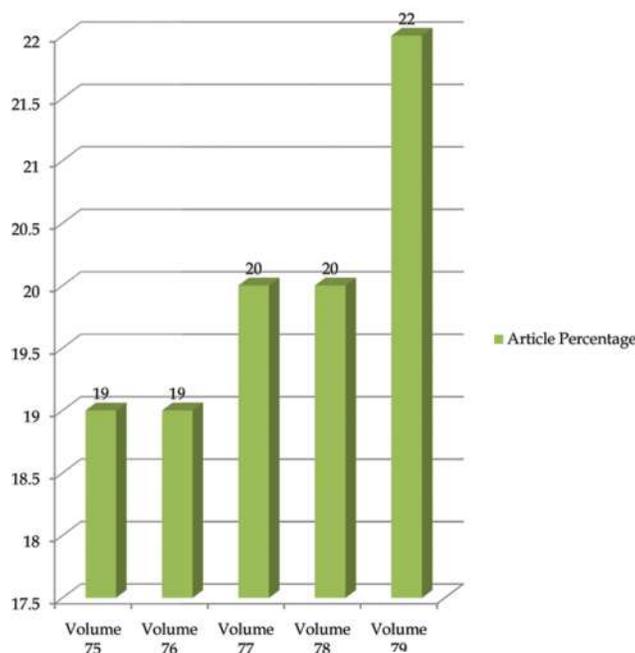
Table 2: Authorship Pattern

No. of Author	Table of Contribution	Percentage
Single Author	10	16%
Two Author	22	36%
Three Author	18	29%
More than 3 Author	12	19%
	62	**100%**

Table 2 gives the details about the authorship pattern. A total of 10 contributions (16%) out of 62 have been contributed by single author, 22 contributions (36%) by two authors and 18 contributions (29%) by three authors, 12 contributions (19%) have been contributed by more than three authors. It is observed that majority of the papers published during the said period is contributed by two authors.
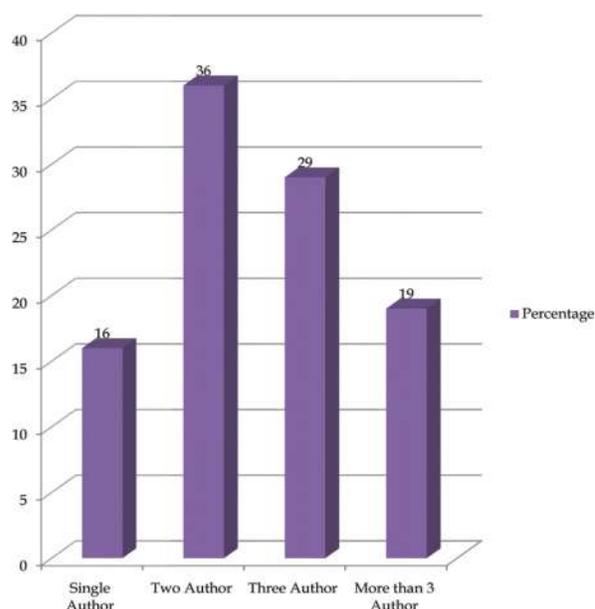
Table 3: Authorship Pattern of Contribution (Volume wise)

Volume	On e Author		Two author		Three author		More than 3 author	
Volume 75	11	17%	32	19%	33	20%	8	10%
Volume 76	11	17%	26	15%	36	22%	23	28%
Volume 77	15	22%	32	19%	36	22%	4	5%
Volume 78	15	22%	30	18%	27	17%	17	21%
Volume 79	15	22%	50	29%	30	19%	29	36%
	67	**100**	**170**	**100**	**162**	**100**	**81**	**100**

Table 3 gives authorship pattern of contribution volume wise. It indicates that out of the 67 contribution of single author volume wise 77, 78 and 79 have the highest number (i.e.) 15 (22%) out of 170 contributions by two authors, volume 79, has the highest number i.e. 50 (29%) and volume 77 has the lowest number i.e. 26 (15%). Out of 162 contributions by three authors volume 77% has the highest number i.e. 36 (22%) and volume 77 has the lowest number i.e. 207 (17%). Out of the 4 contribution by more than four author volume 79 has the highest number 29 (36%) Volume 77 have the lowest number i.e. 4 (5%) contributions.
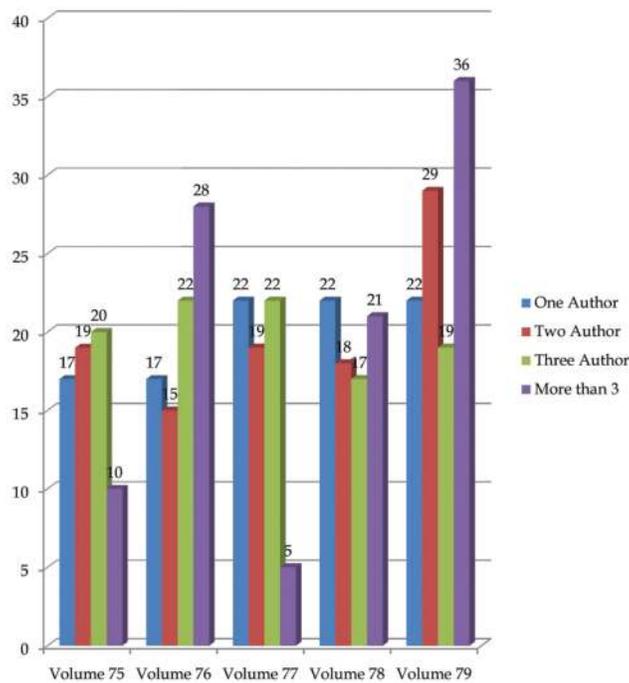
Table 4: State wise Distribution

Name of State	No. of Distribution	Percentage
New York	6	11%
California	5	8%
Columbia	5	8%
Washington	4	7%
Princeton	3	5%
Stanford	3	5%
Madison	3	5%
Texas	2	3%
New Jersey	2	3%
Israel	2	3%
Harvard	2	3%

Chapil hill	2	3%
USA	1	2%
Arizona	1	2%
Buffalo	1	2%
Colorado	1	2%
Canada	1	2%
Cornell	1	2%
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Michigan	1	2%
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Connecticut	1	2%
Albany	1	2%
Tennessee	1	2%
Lowa	1	2%
Oregon	1	2%
Indian	1	2%
Mary land	1	2%
Notre dame	1	2%
Yale	1	2%
Purdue	1	2%
Michigan–Ann Arbor	1	2%

Table 4 gives the state wise distribution of contribution in the five volume of the journal. Out of the 59 contributions, the highest number of contributions i.e. 6 (11%) were published by the authors of New York, followed by 5 contributions (8%) by the resident of California and Columbia. However, the least number of contributions i.e. only 1(2%) is contributed by the people of more than 50% countries including Arizona, Canada and India.
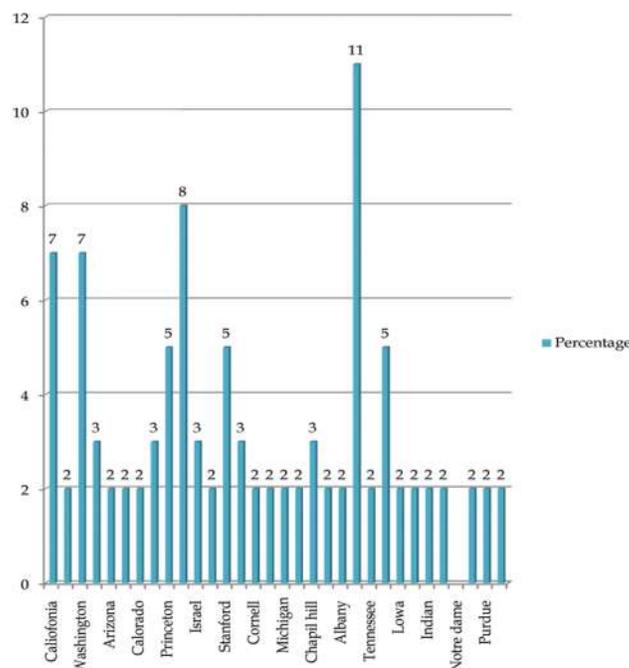
Table 5: Length of Article

No. Pages	2010	2011	2012	2013	2014	total	% age
0–15 page	-	-	-	-	5	5	2%
16–20 page	6	11	7	6	8	38	18%
21–25 page	23	19	20	21	24	107	49%
25–30 page	9	13	13	14	12	61	28%
31–35 page	1	-	1	-	4	6	3%
Total	39	43	41	41	53	217	100%

The table shows that maximum numbers of articles i.e. 107 (49%) were published in 21-25 pages, whereas the articles which were published in 25-30 pages were 61 (28%). The study shows that none of the articles during the covered period of five years were published in more than 35 pages. The maximum numbers of articles were published in between 21 to 25 pages which are about 49%.
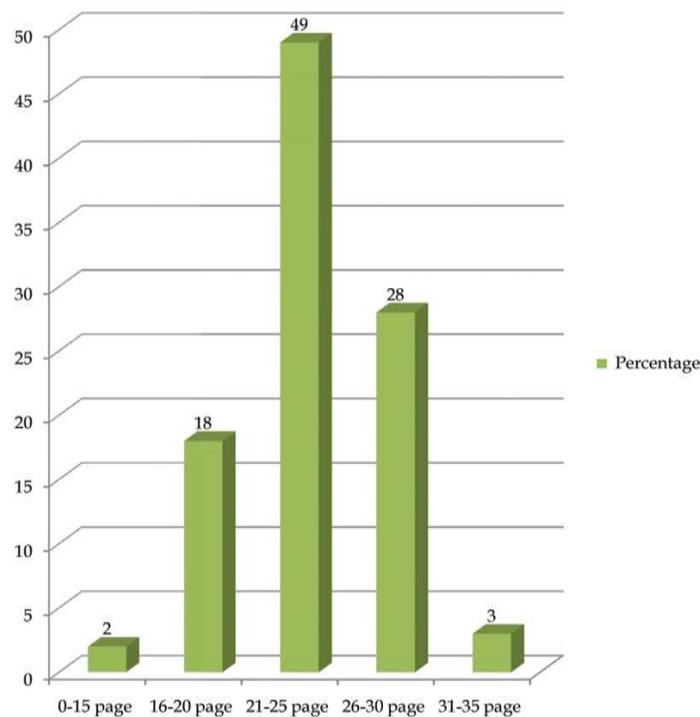
Table 6: No. of References

Volume	Year	Journal	%	Book	%	www	%	Handbook	%	Conference	%
Volume 75	2010	1787	18%	1315	21%	**66**	14%	24	18	5	62
Volume 76	2011	1998	19%	828	13%	**64**	14%	28	21	-	-
Volume 77	2012	1931	19%	1409	22%	138	30%	38	29	1	13
Volume 78	2013	1958	20%	1296	21%	81	17%	22	16	2	25
Volume 79	2014	2431	24%	1420	23%	116	25%	21	16	-	-
Total		**10,005**	**100**	**6,268**	**100**	**465**	**100**	**133**	**100**	**8**	**100**

Table 6 shows the number of references cited by authors during the last five years 2010-2014. The maximum number of references i.e. 10,005 cited in the articles from journals. The maximum references from journals have been noticed during 2014. Only 1787 (18%) references from different journals were cited in articles in the year 2010. The books were also used to help the authors in their contributions. The maximum number of references from books have been cited during 2014 i.e. 1420. The study shows that the contributors have consulted different websites and conference proceedings to contribute their contributions. It is noticed 465 websites and only eight conference proceedings were accessed by the contributors to write their articles for the journal during the period of five year.

five volumes of ASA during the period of 2010 to 2014. The study reveals that the best number of articles i.e. 48, were published in the year 2014 and the lowest numbers of articles i.e. 38 were published in volume 75 in 2010. It is observed that majority of the papers are published by single author. The maximum papers in American Sociological Review were published during the year 2014. This journal is one of the leading peer-reviewed completely dedicated to the field of sociology. The American Sociological Review does not publish book reviews. American Sociological Review offers online first by which forth coming articles are published online before there are scheduled to appear in print.

Findings and Conclusion

The Findings of the present study are summarized below:

1. The contribution of articles in each volume of American Sociological Review is constantly increasing from volume to volume.

2. Maximum number of articles 53 were published during the year 2014 and minimum number of articles i.e. 39 published in 2010. Maximum number of paper, were published in between 21 to 25 pages during 2010.

3. Majority of the papers published by single author is 16% and by two authors is 36%.

4. It is found that Journal articles are predominant in citations i.e. 10,005 (100%) followed by books 6,268 (62.68%) the least number of citations are from conference proceeding which is only 8 (0.08%).

5. The maximum number of authorship pattern is 36% and the minimum number of authorship pattern is 5%.

Conclusions

The study "American Sociological Review, A Bibliometric study (2010-2014)" is carried out through online version. The present study confined to the publications of 402 research papers printed in

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Users' Satisfaction on Library Services in Anna University with Special Reference to Enginerring Colleges at Coimbatore City, Tamil Nadu: A Study

S. Chandra Mohan Kumar*, V.R. Rajan**

Abstract

This paper makes an attempt to study the users' satisfaction in library services in the Engineering Colleges at Coimbatore. The survey was conducted in 32 Engineering College Libraries. The data were collected in the form of questionnaire stating the opinion on access to full text database in library, access to digital repository, issue of books to the users, opinion on gate register, facilities and services offered by the library and library staff supporting for discovering the information. The study reveals all the users need based services, reliability, responsiveness, timeliness, honesty and a caring approach. They want assistance for information access resource materials both in printed and online formats. On review on the user's satisfaction the library service in the affiliated Engineering colleges of Anna University in Coimbatore have been done. In order to bridge the gap between the services offered by the libraries of these Engineering Colleges and the needs and expectations of various users, the present study has been proposed and conducted.

Keywords: Collection Development of Libraries; Evaluative; Comparative.

Introduction

Libraries are being influenced with the emergence of users. The libraries of Anna University affiliated Engineering Colleges in Coimbatore are at the beginning stage of user's applications. Only a few libraries have complete automation with ICT applications and others are half way through. There are many factors contributing for its successful and comprehensive applications. The attitude of librarians and library staff also contribute to the successful function of library and in offering their best services to the users. In view of the above, issues concerning the functioning of engineering college libraries, there is every need to undertake the study on user's satisfaction in the affiliated Anna University engineering college libraries of Coimbatore.

Academic libraries have always been the door to learning for a great majority of the populations that they serve. They are knowledge centers and contribute to lifelong learning. In India, there are

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bumps in the royal that lead to the goal of having an institution to serve the masses, which is even more imperative in the precent information society, in a nation where 40 percentage of the population is living below the poverty line. A massive investment in Academic libraries has to be made to turn them into true information resource centers.

The status of Indian libraries is to be improved in terms of modernization as well as wider spectrum of collection. The following table reveals the fact about the either libraries in India or Indian libraries.

Table 1: Vital statistics about indian libraries

Year	Particulars	Volume
1989	Expenditures	$49,914.334
1989	Libraries	10,440
2009	Libraries	13,415
1988	Users	5,50,179
2008	V olumes	41,732,176

The current status of the public library system in India is hard to ascertain and describe, because a consolidated picture is not available. There are twenty-eight states and seven union territories in India. All have their own public library systems-structures and patterns of financial assistance. Twelve of the states have enacted library legislation and rest is providing public library service without legislation.

Table 2: Vital statistics about Indian libraries

No	State	Name	Year
1	Tamil Nadu	Tamil Nadu (formerly Madras) Public Libraries Act	1948
2	Andhra Pradesh	Andhra Pradesh Public Library Act	1960
3	Karnataka	Karnataka Public Library Act	1965
4	Maharashtra	Maharashtra Public Library Act	1967
5	West Bengal	West Bengal Public Library Act	1979
6	Manipur	Manipur Public Library Act	1988
7	Kerala	Kerala Public Library Act	1989
8	Haryana	Haryana Public Library Act	1989
9	Mizoram	Mizoram Public Library Act	1993
10	Goa	Goa Public Library Act	1993
11	Gujarat	Gujarat Public Library Act	2002
12	Orissa	Orissa Public Library Act	2002

The objectives of the libraries in the college and university in the modern days have changed in such a manner that the activities of the library shall be related to the daily needs and activities of an academic community, to the maximum possible extent. In this regard, the college libraries play a crucial role in making the students the good citizens of the country. The libraries in the modern days help the people to have the updated information in their hands, to improve their knowledge in their respective fields and to widen their views on a particular subject or discipline.

The growth and change of contemporary civilized society is matched by the growing size and complexity of library resources and services. The services rendered by the libraries in the universities and colleges are very much helpful to the academicians, students, scholars and the faculties. The Kothari commission has considered the library as 'Intellectual Workshop ' for the researchers. All the wealth of knowledge of past and present gathered in the college and the university libraries have to be effectively and profitably used by the faculty and students.

Objectives of the Study

To find out whether the resources available in the library are satisfied:

1. To find out whether the users' satisfaction with the library environment is helpful for reading;

2. To find out the satisfaction of opening hours, the systems and timings of the library;

3. To find out the users' assessment about the library staff and their behavior towards them;

4. To find out the satisfaction level of ICT facilities and services provided by the library;

5. To find out the availability of E-resources, digital library, repositories and library consortium.

6. To reveal the service rendered by the Engineering College Libraries and to find out the level of satisfaction derived by the users on the various facilities available.

7. To study the respondent's opinion on usage of library resources and to assess the frequency of library visit by the users.

Statement of the Problem

After carrying out the discussion with their Research Supervisors and considering the above-said maters, the researchers decided the subject for their thesis as user's satisfaction on library services in engineering colleges at Coimbatore city: A study.

Scope and Limitation

The title of the study has been phrased as "A study on User's satisfaction of affiliated Engineering Colleges at Anna University Coimbatore City". It aims at investigating the level of user's satisfaction with regard to the facilities offered by the libraries of the affiliated Engineering colleges of Anna University in Coimbatore. It focuses on user's satisfaction on library resource. ICT infrastructure, and digital Library and Library services. The study covered 32 Engineering college libraries in Coimbatore college libraries.

Colleges selected in the south zone

1. Akshaya College of engineering and Technology

2. Hindustan College of Engineering and Technology

3. Hindustan Institute of Technology

4.   Karpagam College of Engineering

5.   Sri Eswar College of Engineering

6.   S.V.S College of Engineering

7.   J C T College of Engineering

8.   Kalaivani Institute of Technology

Colleges selectd in the north zone

1.   Bannari Amman Institute of Technology

2.   Kumara guru College of Engineering

3.   S.N.S College of Engineering

4.   S.N.S Institute of Technology

5.   P.P.G College of Technology

6.   KGISL Institute of Technology

7.   Dr N.G.P Institute of Technology

8.   Sri Guru Institute of Technology

Colleges selected in the east zone

1.   Tamil Nadu College of Engineering

2.   Maharaja Institute of Technology

3.   Tejaa Shakthi Institute of Technology for Women

4.   R.V.S College of Engineering and Technology

5.   K.P.R Institute of Technology

6.   Sri Sakthi Institute of Technology

7.   Park Institute of Engineering and Technology

8.   Kathir Engineering College

Colleges selected in the west zone

1.   Indus College of Engineering

2.   Coimbatore Institute of Engineering and Technology

3.   Raganathan Engineering College

4.   Sri Ramakrishna Institute of technology

5.   Easa College of Engineering and Technology

6.   United Institute of Technology

7.   K.T.V.R Knowledge Park of Technology

8.   Nehru Institute of Engineering and Technology

The libraries under Anna University zones engineering colleges are well recognized for their specialization of full-fledged study material for the learner.

Need for the Reseaerch

The outcome of all research work will certainly be important and useful to the society. This research will also be useful to many fellow research librarians of different universities and persons interested in library science and to improve the resource collections of colleges and university library.

A library is an important part of an educational institution. The engineering college library is the heart of the college, and in the same way, the collection of books in the library is the heart of the library. To fulfill the aim of the engineering college libraries, it should have a great book storage provided by the library to the users and the books collection available in the library are important features of the library to fulfill the requirements of the users. The control over the storage of books in the engineering college library is absolutely necessary.

The professionals connected with the library must contribute to develop the engineering college libraries. Thus research will be useful to understand that idea not clear and complete information regarding effective factor to accomplish it.

Methodology of the Research

The researchers have used the questionnaire method to collect the data regarding the perception, beliefs, feelings, motivations, attitudes, views, past behaviors of the users. The researchers have used the questionnaire for the collection of the research data because using of other methods would be difficult to collect the required data. It is important to observe carefully even minute details of the libraries for an exhaustive survey of these engineering colleges of Coimbatore, Tamil Nadu. The questionnaire is prepared and used keeping the above mentioned point of view in mind. The questionnaire method is frequently used in survey-type research by the researches.

Data Collection

Out of the available techniques, the researchers have adopted the questionnaire technique for the data collection. The questionnaire prepared by the researcher was administered in two ways. One way by post and the other way is in person. The researchers sent the questionnaires to the librarians of the engineering colleges in Coimbatore city, by post and the researches visited the place in person and got the questionnaire.

The analysis of the information available from the questionnaire prepared for the research was carried out using different methods, and the results were given in a tabular formal. In addition the tabulated

information was also shown in the form of graphs and charts with percentage whenever required.

Findings of the Research

1. Out of eight hundred sample respondents majority of the respondents (55.25%) are satisfied with the functioning of the library.

2. It is found that 70% of respondents are convenient with the library timings and 20% of respondents felt very convenient and 10% expressed their inconvenience.

3. 25% of respondents have used the library for one hour when they get time, 22.50% of them spent 10-20 minutes, 21.25% of them spent 20-30 minutes, 13.75% of them spent 30-40 minutes, 11.25% of them spent more than one hour and 6.25% of them spent up to 10 minutes.

4. 40% of the respondents visit the library weekly, 35% of the respondents visit the library daily, 13.75% of the respondents visit the library once in a month and 11.25% of the respondents visit once in every fortnight.

5. 78.75% of them have stated that the lending period for home reading is sufficient.

6. With regard to the use of regular resource, it is found that 11% books, 15% journals, 15.6% theses/dissertation , 3.6% project reports, 6.2% back volumes, and 15% question bank, 10% audio visuals, 5.5% E-Book, 11.7% E-Journals have been regularly utilized and 6.2% of respondents have made use of other resource.

Suggestions

Based on the findings, the following suggestions are put forward to improve the library services in order to increase the level of users' satisfactions:

◆ The college libraries should adopt appropriate techniques to provide the best information services.

◆ The college libraries should enable the users to keep updated with the innovations by providing them various information services.

◆ Current awareness bulletins, newsletters, new edition lists, forthcoming events and conferences and lists of translated materials should be compiled regularly and should be kept ready for the availability of the users.

◆ Selective dissemination of information should be established according to user's interest profiles.

◆ There should be proper feedback mechanism to monitor the effectiveness of the service. Regular surveys of user should be conducted to know the continuity/discontinuity of existing services and book collections and initiation of new services.

Conclusion

All libraries are facing new challenges such as a changing clients base multiple information formats, multiple information and communication technologies and changes in methods of teaching and learning. Most library surveys, however, find that few users are aware of the existing library services. One of the problems lies in the fact that little emphasis has been placed upon the understanding of users needs and the services given. The study revealed that the sincere expectations timeliness, honesty and a caring approach. They want to have information access, and to read materials both in print and online formats. The gates of knowledge and wisdom are always open for new enhancement in the field of the library. Let this piece of research be a beacon.

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Stress Management and Academic Achievement of Library Science Students among two Universities

R. Padmavathi*, P. Sethuraj*

Abstract

This study investigated the relationship between stress management skills and academic achievement of Library Science students in two universities. A total of 800 students randomly selected from universities participated in the study. Three null hypotheses were tested using.data generated from research instruments. The instruments included a modified stress management scale adopted from its original form found in Blonna (2005). It has reliability co - efficient of 0.81. Data generated from this instrument were correlated with current students' grade point average scores (G.P.A) using Pearson product moment correlation method. Results showed strong positive relationship between stress management skills and academic achievement. The relationship still exists when the data for each of the two genders were processed separately. It was recommended that stress management skills training should be given prominence in universities guidance and counseling progammes while concerned authorities should endeavor to provide facilities that may help to reduce academic stress.

Keywords: Management Skill; Stress; Academic Achievement; Library Science Students.

Background to the study

There are various potential stressors that students face on a daily basis. These include the challenge of properly adjusting to the campus life which is quite different from their home environments. Lifestyle change is also quite challenging. The more life changes an individual experiences, the more stress the individual faces and the more likely it is that illness and disease will result (Greenberg, 1999). The enormity of academic work, the rush for space in lecture rooms, the harsh economic conditions which makes procurement of basic needs almost impossible and the need to achieve academic excellence against all add are some of the major potential stressors to the two university students. Others are the incessant power outage which makes relaxation almost impossible after a highly stressful day. The challenges of developing necessary competence, managing emotions, managements in library reacting

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to a noisy environment and coping with a highly tensed social situation on campuses are also stress inducing. (Ivancevich, 1991) .

Stress is variously defined, For instance, Blonna (2005) defined stress as a holistic transaction between the individual and a stressor that results in the body's mobilization of a stress response. Stress is also defined as a combination of a stressor and stress reactivity. A stressor has only the potential of eliciting a stress reaction. A stressor reactivity is the tough processes which interprets the stressor as a cause of stress (Greenberg, 1999). These definitions not be a stressor for another. Thus, a stressor is any physical, paychological, (or) environmental events (or) condition that initiates the stress response (Fortner, 2002). A stressful person is prone to several health problems and psychological disorders. Stress has been cited as a cause of illnesses, such as migraine, ulcer, backache and rheumatoid arthritis (Pavne and Hahn, (2002). Stress is also found 'to upset people's self-esteem, attitude, interest and general female students in schools and the way it is managed may reflect in their academic performance (Salami,2001).

The effects of stress can be positive (or) negative, positively used, stress can be a motivator for an improved quality of life. Stress can be negative, when it becomes destructive as a result of how and individual negatively perceived it becomes

destructives result of how an individual negatively it and reacted to it. The stress especially one that is noise induced lead to increased blood pressure, increased heart rate, increased fatigue, depressed mood and decreased mental) and physical performance (Blonna,2005).

Academic achievement points to the extent to which individuals have gained from a particular curriculum, subject (or) task based on relatively standardized experiences, such as a class test (Akinade, 2001). Effective learning and sound academic achievement are said to constitute and integral part of the goal of schooling (Hussan, 2006). Academic achievement is something of great importance to parents, teachers and students themselves. Even the larger society is aware of the long term effects of high(or) low academic achievement of educational institutions are expected to shape the destiny of the society (Salami,2001) . Intense pressure and stress have however been impaired students' academic achievement (Carey,2007) Unfortunately, academic achievement is on the downward trend and this has remained a matter of grave concern to many educationists (Aremu,2000). Could it be that the level of stress being experienced by Tamil Nadu, students has bearing with the reported downward trend in their academic achievement ? Some researchers have reported a strong relationship between level of stress and academic interest (Fortner,2002).

Methodology

This study employs the descriptive, research design meant to clearly depict any relationship between stress management skills and academic achievement. The target population comprised of Library science students in two universities of Alagappa University and Annamalai University.

Sample and Sampling Technique

A total of 800 students randomly selected constituted the sample of the stratified random sampling technique was employed in selecting the sample. Students were stratified based on gender such that equal number of participants represented each of the two genders (male and female).

Instrumentation

The Stress Management scale adapted from Blonna(2005), with slight modifications to reflect the environment was used to collect data on students stress management skills. The current Grade Point Average (GPA) scores collected from students academic records served as measures of academic achievement.

Properties of the Instrument

The Stress Management Scale (SMS) was trial tested to establish its validity and reliability. The major construct measured by the SMS was stress management skill sand nothing else. Through test re-test method, the Pearson Product moment Correlation analysis of the scores generated from repeated administrations indicated 0.81 co-efficient of reliability.

Scoring and Method of Date Analysis

The SMS was scored on a 4 point scale Likert form, whereby = 1 point, Sometimes= 2 points, Usually=3points and Always= 4points. The scores were collated for analysis using the Pearson Product Moment Correlation method.

Results

The results, of data analysis are presented in the following summary tables.

Ho 1: There will be no significant relationship between stress management skills and academic achievement in Library science students.

Table 1: Relationship between Stress Management and Academic Achievement of Library Science Students.

	Stress Management	Academic Achievement
Pearson Correlation Stress Management	1.000	0.823
Academic Achievement	0.823	1.000
Sig.2 tailed	021	.021
N	800	800

Table 1 shows a correlation co-efficient of 0.82.3 significant at p<0.05. Hence the null hypothesis stated above is rejected in favour of the alternative hypothesis. This means that there is a strong positive relationship between stress management skills and academic achievement.

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Table 2: Relationship between Stress Management and Academic Achievement

	Stress Management	Academi Achievement
Pearson Correlation Stress Management	1.000	0.823
Academic Achieve	0.671	1.000
Sig.2 tailed	.024	.024
N	424	424

Ho2: There is no significant relationship between stress management skills and academic achievement of male Library science students.

Table 2 shows a correlation co-efficient of 0.671 significant at p<0.05. This empowers the researcher to reject the null hypothesis in favour of the alternative hypothesis. This means that there is a strong relationship between stress management skills and academic achievement of male Library science students.

Ho3: There is no significant relationship between stress management and academic achievement of female in Library science students.

Table 3: Relationship between Stress Management and Academic Achievement

	Stress Management	Academic Achievement
Pearson Correlation Stress Management	1.000	0.762
Academic Achieve	0.762	1.000
Sig.2 tailed	.032	.032
N	376	376

Table 3 reveals a correlation co-efficient of 0.762 significant at p<0.05. Therefore, the null hypothesis stated above is rejected in favor of the alternative hypothesis. This means that there is a strong relationship between stress management Skills and academic achievement of female library science students.

Discussion

The findings of this study are quite informative and plausible. The findings that established relationship, between stress management skills and academic achievement, further revealed the prevalence stressors in educational institution (Carey, 2007). Students face several challenges that are quite stressful in universities. These include incessant disruption of academic work as a result of strikes by students, academic (or) non-academic staff, social insecurity due to, fear of cultural activities, the harsh economic condition and incessant power outage which often make lecture rooms quite uncomfortable. It is also interesting that the relationship between stress management skills and academic achievement is still strong when the data for males and females were treated separately. The finding that there is strong relationship between stress management skills and

academic achievement of male that of female students revealed by the results of the testing of the second and third, null hypotheses suggest that gender difference did not moderate the relationship between stress management skills and academic achievement. These results buttress the opinion that both male and female students are prone to stress in university management is necessary ensure progressive academic achievement. The extent to which (male or female) are able to manage these challenges may determine their academic growth. This lends credence to Blonna (2005) who reported a strong relationship between stress level and mental performance, the results also corroborate, Fortner (2002) who found a strong relationship between stress and academic performance. This suggests that whether one is a male or female, the way the individual manages stress has a bearing on his (or) her academic achievement.

Implications for Counseling

The findings emanating from this study again bring into fourth need to provide adequate guidance and counseling services to students in order to assist them manage stress effectively. The findings also imply that stress management skills should form part of the training which counselors should give to

students whose academic achievements fall short of the expected standards.

Recommendations Conclusion

It is quite imperative for students to learn stress management skills so as to be able to cope with the highly stressful academic environment in two universities. These skills should form part of the orientation services to be rendered by university counseling centers. It is also recommended that genuine effort should be made by concerned authorities to provide adequate facilities such as lecture rooms, relaxation centers and secured social environment, so that stress can be reduced to the bestest minimum.

Conclusion

This study revealed significant positive relationship between stress management skills and academic achievement. Hence it was recommended that stress management skills should be learnt by students. It is hoped that a careful consideration and implementation of the recommendations will be of immense benefit to the education system.

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Growth of Research Literature on Bacterial Meningitis, 2003 to 2014: A Scientometric Study

Keshava*, Lakshminarasimhappa M.C.**

Abstract

Scientometric Studyis beneficial for librarians and managers of information centers in identifying the use of periodical literature.The paper analyse the articles as reflected through PubMed database for the year 2003 to 2014 to investigate the trend in the growth of literature on Bacterial Meningitis. The results of the study reveals that , the value of an average RGR of articles $R_t(P)$ increased gradually from 0.72to 2.26 (2003 to 2013) and there is drametically increased in the year 2014(2.56). The mean relative growth $R_t(P)$ for the first 6 years (2003- 2008) indicates a growth rate of 2.08 years and in the next6 years (2009 - 2014) it was increased 4.39 years. The R^2 value for the linear trend (0.2951) is more than that of exponential trend (0.3023), which indicates that the exponential trend is more suitably fit to as compared to linear trend.

Keywords: Meningitis; Bacterial Meningitis; Scientometric Study; Growth of Literature; RGR (Relative Growth Rate); Doubling Time(D_t).

Introduction

Scientometrics is branch of 'Science of Science'. It is one of the most significant measures for assessment of scientific productivity. Is alsointerrelated to and has overlapping benefits with bibliometrics and informetrics.

In 1969, Nalimov and Mulchenko coined the Russian equivalent of the term "Scientometrics" *(Nalimov, and Mulchenko, 1969).*The term 'Scientometric' is a field which consists of the quantitative methods applied to the study of the science as an information process. This techniquecontains statistical and thesaurus methods, and indicators as to the number of citations, terms so on and it is a scientific discipline, which performs reproducible measurements of scientific activity, and exposes its objective quantitative regularities.

'Scientrometrics is an application of *quantitative techniques* (i. e. system analysis, mathematical and statistical techniques etc) *to scientific communication* (science output, science policy, science administration etc.) with the objectives of:

(a) Developing science indicators; (b) Measuring the impact of science on society; and (c) Comparing the output as well as the impact of science at national and international levels*(Keshava, 2014)*

Meningitis is caused by a bacterial infection that began elsewhere in the body, such as in the sinuses and ears. It is the major reason of mortality in about 1,000 publics around the world every day; many of them young adults and children. Meningitis is a shocking and very poisonous disease that kills patients within hours.(Rehana Basri, 2015).

Bacterial meningitis is severe infections and should be treated as emergency. Many of the people with meningitis recover, it can cause serious difficulties, such as brain damage, hearing loss, or learning disabilities. *(cdc.gov, 2015).* Bacterial meningitis sufferings all ages and was mostly a paediatric disease until the success of the Haemophilus influenza type b vaccine (HIB). (Russell Bartt, 2012).

Growth of Literature

The variations in the mass of literature over a specific period termed as growth literature. Gilbert (1978) has studied the existing literature on the indicators of growth of knowledge in scientific specialties, and has listed many ways of measuring

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it, noting their strength and limitations and commenting, at same time, on their use. Gupta, B.M (1977) suggests two approaches that have normally been considered in understanding knowledge growth: (i) Qualitative and (ii) Quantitative. Qualitative methods recommended the structural or descriptive models of knowledge growth, while descriptive model use social phenomenon to explain diffusion and formation of knowledge. Quantitative approach is trusted on summarization of statistics to elaborate the observed behavior, whereas others apply growth and technology diffusion models and bibliometric/Scientometric techniques.

More number of studies has been made on the growth of literature in the field of Medicine literature but a lesser amount of studies has been reported on growth of research literature on *Bacterial Meningitis*. Therefore an attempt has been made to study the growth and dynamics of Bacterial Meningitis research literature.

Objectives

- To define the growth of 'Bacterial Meningitis' literature by calculating relative growth rate and doubling time for publications;
- To fit both modified exponential curve and linear curve for the original publications data studying actual growth pattern.

Scope and Methodology

The Scientometric study is a statistical method of counting to evaluate and quantify the growth of a subject. The research trend during the said time span would be clearly understood from this study and a predictive projection may be made for an anticipatable future. There are several areas in science, social science and arts for which scientometric studies have been carried out.

The present study is confined to only 'Bacterial Meningitis' literature as reflected in the PubMed database which were published during the year from 2003 to 2014.

The data for this study was downloaded from the *PubMed database*, it is a free resource developed and maintained by the National Center for Biotechnology Information (NCBI) at the National Library of Medicine (NLM). Here we used Pubmed for downloading the data; the search term applied was "Bacterial Meningitis". This may considered as central keyword of the topic discussed. A total of

3973 records spanning over the years 2003 to 2014 were downloaded from Pubmed on 15.03.2015. The downloaded data was analysed for source items to find the research trend. The articles were categorized chronologically and transported to spread sheet application (MS Excel) and evaluated the data as per objectives of the study.

Data Analysis

The articles were downloaded and classified chronologically. To investigate the nature and growth of articles, exponential, linear and logistic were tested. The exponential growth is define as:

$F(t) = a\,e^{bt}$

Where ,

a = the initial size of literature i.e. at time t=o and b, the continuous growth rate is related to the percentage by which the size increases each year.

The logistic has a lower limit and an upper limit or a celling beyond which the size cannot grow and

can be represented mathematically as $U_t = \dfrac{K}{1 + \mu}$

Where,

U = expected size of literature

K and μ = constants and t= time.

Similarly, the linear growth is represented as $U_e = a + b_t$

Relative Growth Rate (Rgr)

Relative Growth Rate (RGR) and Doubling Time (Dt) had been applied. RGR means the increase in the number of articles per unit of time. The mean RGR of articles over the exact period of interval is represented as:

Rt = Relative Growth Rate of articles over the specific period of time.

$\log_e p(0)$ = Logarithm of initial number of articles

$\log_e p(t)$ = Logarithm of final number of articles

Similarly, RGR of subject's articles has increased in number of articles per unit of time. The mean RGR of subject articles Rt(SA) over the period the specific period of time is determined as:

$$Rt(SA) = \frac{1}{t}\left[\log_e p(t) - \log_e p(0)\right]$$

Rt (SA) = Relative Growth Rate of articles over the specific period of time.

$\log_e p(0)$ = Logarithm of initial number of articles

$\log_e p(t)$ = Logarithm of final number of articles

Doubling Time (D_t)

Dt (Doubling Time) has been calculated using the following formula:

Doubling Time or Dt = 0.693/R

Dt (Doubling Time) is directly related to RGR and is defined as the time required for the articles to become double of the existing amount. In case the number of articles in subject doubles during a given period, then the difference between logarithms of number at the beginning and at the end of this period must be the logarithm of the number 2. We used Napier logarithm and the taken value of is 0.693. Therefore, as per this (0.693) and an average growth rate we calculated by what time interval does the Napier logarithm of numbers increase by 0.693. So the Doubling time is calculated as:

$$Dt\,(SA) = \frac{\log_e 2}{R_t(SA)} = \frac{0.693}{R_t(SA)}$$

Here, Dt (SA) = average doubling time of the articles(Keshava, 2014).

Table 1: Relative Growth-rate (RGR) and doubling time (D_t) of articles in Bacterial Meningitis from 2013 to 2014.

Year	No. of Articles	Cumulative	$Log_e 1^P$	$Log_e 2^P$	R_t (P)	Mean R_t (P)	D_t(P)	Mean D_t(P)
2003	297	297	5.69	5.69	0.00		0.00	
2004	280	577	5.63	6.36	0.72		1.45	
2005	295	872	5.69	6.77	1.08		2.17	
2006	334	1206	5.81	7.10	1.28		2.57	
2007	339	1545	5.83	7.34	1.52		3.03	
2008	370	1915	5.91	7.56	1.64	1.04	3.29	2.08
2009	355	2270	5.87	7.73	1.86		3.71	
2010	338	2608	5.82	7.87	2.04		4.09	
2011	323	2931	5.78	7.98	2.21		4.41	
2012	354	3285	5.87	8.10	2.23		4.46	
2013	381	3666	5.94	8.21	2.26		4.53	
2014	307	3973	5.73	8.29	2.56	2.19	5.12	4.39

R^2 (Linear trend for no. of articles)= **0.2951**
R^2 (Exponential trend for no. of articles) =**0.3023**
R^2 (Exponential trend for cumulative no. of articles) = **0.9052**
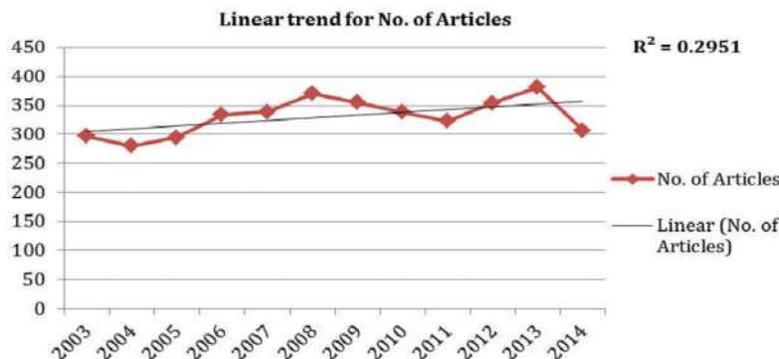

**Fig. 1:** Linear trend for no. of articles from 2003 - 14
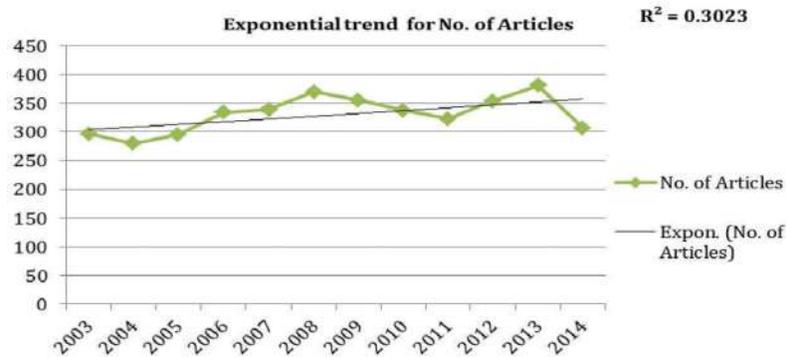
**Fig. 2:** Exponential trend for no. of articles from 2003 – 14
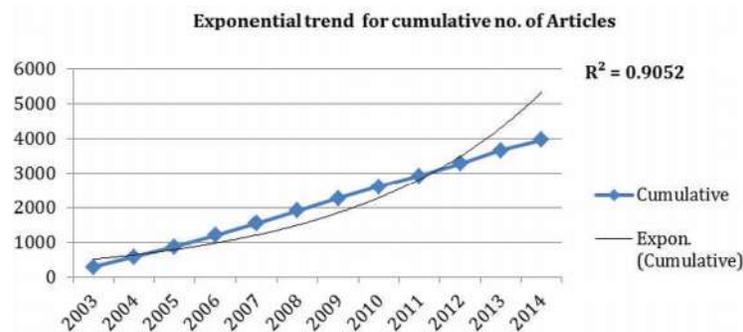
Fig. 3: Exponential trend for cumulative no. of articles from 2003 - 14

Here Doubling time can give more intuitive sense of the long term impact of growth than simply viewing the percentage growth rate.

$$T_d = \frac{\log 2}{\log(1 + \frac{r}{100})}$$

Where:

T$_d$= Doubling Time

r= Constant Growth rate.

Relative Growth Rate (Rgr)

As the table1 clearly indicates, the value of an average RGR of articles R_t(P) increased gradually from 0.72 to 2.56 (2003 to 2014). and there is little increased in the year 2014 (2.56). Therefore during year 2003 to 2013 there were much research has been done to eradicate this deadly disease. Majority of the countries of the world has given much importance to research to control and combat the disease , hence the RGR has been increased. It is due to most of the countries successfully eradicated the disease of Bacterial Meningitis. Therefore, not much studies have not been reported. For the first six years i.e. 2003 to 2008 the RGR was 1.04 and in the next six years i.e. from 2009 to 2014, it was increased to 2.19 interestingly. Cumulative values of Doubling time of the publication of articles D_t(P) increased gradually from 2004 (1.45 years) to 2014 (5.12).

The mean relative growth R_t(P) for the first 6 years (2003- 2008) indicates a growth rate of 2.08 years, whereas for the next six years (2009- 2014) it was increased 4.39 years. It shows that the mean relative growth of Bacterial Meningitis literature has shown an increasing trend. It may be due to interdisciplinary and multidisciplinary nature of research and the communication patterns of medical researchers. Therefore, it is inferred that majority of the countries have shown keen interest in research to eradicate Bacterial Meninigitis. The linear growth trend is fit to number of articles and exponential growth trend fit to number of articles and number of cumulative articles for the years 2003 to 2014. The table 1 and Fig. 1, 2& 3 reveal that the R^2 value for the linear trend (0.2951) is more than that of exponential trend (0.3023), which indicates that the exponential trend is more suitably fit to as compared to linear trend. Further, the exponential trend is fit to the cumulative number of articles from 2003 to 2014. The R^2 value for this trend is 0.9052, shows 90.52 % variation observed from the cumulative number of articles.

Results

The year-wise analysis of the growth of literature output shows that the growth was asymmetrical from the year 2003 to 2014, and it was high during 2013 to

2014.Between the years 2003 to 2014 there was a exponential growth of research literature on Bacterial Meningitis worldwide. The high productivity during these years may be due to their significance of the studies on Bacterial Meningitis, which may have got prominence in Research and subsequent literature as well. Therefore, it is evident from the study that there was an asymmetrical growth of literature on 'Bacterial Meningitis'during a span of 12 year (2003 to 2014).

Conclusion

The result of the present study would be very useful for librarians and information managers to organise the most frequently and frequently used materials and necessary. It also helps in discording the less frequently used materials from the library collections. Many of the disciplines around the world, would be aimed at informed decision making, critical assessments of the amount of new knowledge contributed by the research output and so on. Therefore valid measures of knowledge growth may be obtained. It helps to provide exact, useful descriptions and estimatedgrowth of knowledge in the field of 'Bacterial Meningitis'.

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E-Book Usage, User Satisfaction and Usability Issues in an Academic Library: A Case Study of Jawaharlal Nehru University, New Delhi

Shiva Kanaujia Sukula*, Rishabh Kumar Jain**, Ramesh C. Gaur***

Abstract

The curiosity to explore and inclusion of e-books based library service in an academic library has been an integral objective of this paper. Initiating with literature review, a survey has been conducted to understand the library users related with aspects of e-books. The study takes consideration of few facets of users' personality to find the relation between their status and preferences. The paper discerns the means and method to find out users' inclination towards e-resources with an effort establishing the correlation among the E-books purchase, policies and relating popularity among users at Jawaharlal Nehru University (JNU), New Delhi.

Keywords: E-books; Accessibility; Collection Management.

Introduction

There have been fury over the Google Book settlement in 2009 as a legal arrangement; also this "Google book settlement" has been a point of discussion among academic librarians (Nicholas Joint, 2009). The libraries and publishers have to embrace the technologies and policies keeping in view the voices from authors and rights holders. Though the e-books accessing may be easier than print versions for the users, the librarians face a number of issues to make that access possible. The purchasing of e-books is not that much easy as their print versions. The pricing method is dissimilar in contrast with the print books. The pricing may be sky high at the initial level which may or may not come down after rigorous negotiations. Sometimes the libraries have to face the challenge of publishers' pricing models and conditions. Kelly Lynch (2012) presented her observations on the issues related with the emergence of e-books. Her personal observations regarding the "e-book pricing and purchasing models" led to the findings that there is need to develop an appropriate business model. The

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publishers and libraries are supposed to have some exercise for pricing. The libraries are worried for the limited use of high priced e-books, publishers vary in distributing methods. To develop a sustainable business model libraries and publishers required to be in close communication. Without concentrating on present problems in pricing, purchasing and dissemination of e-books with few lessons from past, the current situation does not seem to alter.

E-books Collection and Availability

The presence of e books demands to understand if the e-books serve the purpose among various kinds of users. There is also need to find out if the growth of e-books has accommodated in the collection management policies. There is constant need of finding an evaluation procedure to understand the potential of e-books serving at best to users. The access to e-books facilitated is constantly under the watch of concerned staff. The misinformed user or the broken link hampers the access to right resource. Forrest E. Link (2012) identified whether highly circulated print titles and searched for e-book versions to estimate the impact in collection building. In this context, the student and staff attitudes towards e-books are always significant to be known to library authorities. The patron driven purchasing model (Merinda McLure, Amy Hoseth, 2012) should also be evaluated. Since the advent of various digital gadgets, the e-books are no longer a new phenomenon.

E book Marketplace and Libraries' Plans

The e-books publishers and aggregators present different platforms and conditions which require a careful approach from the academic libraries. The e-books as influential source in library also attract the continuous modifications and amendments in strategies and policies. The literature on the international e-book scenario provides glimpses into e-book purchase models before the libraries. The main features of e-books are (Magdalini Vasileiou, Richard Hartley, Jennifer Rowley, 2009) comprised of user oriented attributes and library policy related aspects.

What the literature reflects, the e-book market is not staging fixed and their nature is constantly varying. How to measure the variation is not easy task, challenging at each level. Continuously e aggregators are coming forward for the distribution of e-books titles which is sometime chaotic also. The way the users are recommending e-books is not under the control of any library. At the same time the rules framed by aggregators also pose problems before the acquisition department in any library. The complexity in pricing models, business methods and licensing puts a library in a pressurized situation throughout the year. The experiences disclosed in literature show the rapid growth of e-book market around the globe. Hardly the congregation of users, libraries, and publishers is left untouched by the proliferation of e-books. The need of a definite expression to understand an e-book is relevant even today. The marketplace scenario in the perspectives of libraries planning must be studied in context with:

- e-books proliferation
- use of technologies
- challenges
- growing fascination towards e-books

The puzzles faced by librarians and publishers demand attention to agree to bring out the systematic framework to find the solution.

Usage

The results reflect a curious approach towards e-books collection and points for purchasing from a quantitative analysis comparing usage between collections of individually purchased e-books and collections of e-books purchased as part of large consortia based negotiated bundles (Alain R. Lamothe, 2013). There may be apprehensions about the choice of purchase model for the e-books, what if individually purchased e-books have recorded a greater level of usage than e-books purchased in large packages and, consequently, which of the two

acquisition models is best suited for the library. Lynn Silipigni Connaway (2001) expresses about increase in e-book purchase and proliferation and few factors significant while studying e-book usage. Some of them are:

- access to content and archiving,
- standards and protocols,
- privacy and rights management.

E-book Collection Building

To have a modern face, libraries are inputting large proportions of budgets in building e-books collection. Derrick Fernandes (2007) states about "the e-books collection is part of a broader range of e information services."The reasons stated include the usability for beginners, and popularity among the veteran users which may be the case of a number of libraries. It does not surprise that the collection of e-books supports the library staff in providing fast reference services. David Ball, (2003) identified main concerns in consortia based e-book purchase, are:

- National dimension and strategy
- Expertise in negotiation and licences
- Price advantage
- Policy for hardcopy and e resource procurement

While in a study, David Nicholas et al (2008) found out that "e book penetration is very strong"which reflected a strong relation with scholarly work. A closer look into other user/usage studies is needed to identify the kinds of users such as faculty members, students or some unidentified surprises.

E-books Selection and Purchasing

During last decade, academic libraries have witnessed the growth and popularity of e-books. The university libraries have an additional perspective to choose the e-books related to research aspect. So the method these libraries apply or the policies the librarians design are mirrors of future outcomes in terms of e-books collection. For university libraries it is more difficult to find out a simple solution which can be followed for a number of years. It is also difficult to predict the way the publishers or aggregators will present a new purchase model. These factors often affect the criteria and processes of libraries while purchasing e books. These may range from business models to license.

The factors constantly demanding attention and affecting the purchase of e-books are frequently faced by the libraries (Magdalini Vasileiou, Richard

Hartley, Jennifer Rowley, 2012). Usually libraries go through the variation of business models for acquiring e-books, such as 'pick and choose' or a burden of entire package of e-books. Moreover, complexities of access rights create dilemma on the part of acquisition section. Definitely the number of conditions in licencses offer few vents but at the cost of some other rights. No library finds itself in a position to avoid any facet of "digital rights management (DRM)" terms and conditions. Whereas the libraries move with purchasing and managing access, the prices in comparison with print books often deter the same flexibilities.

There has been constant need of practical solutions for library e-book lending. Few tools for creating awareness as well as lending e-book (Jessica E. Moyer, Jennifer Thiele, 2012) are needed. These aspects inform about the need of continuous efforts to be taken by libraries in order to create maximum utilization of high priced e-books. Merely purchasing followed by one time information about the availability or accessing e-books will not create wonders that libraries whim about. Due to popularity, e-books though document delivery or lending is also present in western countries. Though e-books are becoming popular at a fast pace (Rajendra Kumbhar, 2012), discerning the library web portals proves to understand and visualize the complexities involved in e-books marketing and distribution (Luisa Alvite Díez, Blanca Rodríguez Bravo, (2009). The impact of e-books on interlibrary loan and document delivery practices is visible. Anne Xu, Margarita Moreno, (2014) has shared the experience of the National Library use of e-resources and the analysis of different e-book lending models. No doubt the e-books are becoming significant for libraries and users but it is difficult to follow a business model. There is constant need to create a middle path that leads to library users, the libraries and publishers need to make some room for dialog.

E-book inter library loan and licenses

E-book ILL is often considered difficult or nearly impossible because restrictions for ILL are embedded in license agreements (or terms of use) and reinforced by technological measures. The need of a licence registry (Mark Bide, Rajveen Dhiensa, Hugh Look, Charles Oppenheim, Steve Probets, 2009) as well as evaluation of licensing agreements (Joanne Percy, 2013) invites few concerns related with electronic resources (Mark Bide et al., 2009). Looking in West, E book lending in US academic libraries has been a trend. For example, the Kindle pilot has been done for interlibrary loan (ILL) at Eastern Washington

University. Libraries face limitations in e-book interlibrary loan, and are forced to frame the ILL policies beneath the restrictions laid in licencses and agreements. Once again libraries are found caught up in restrictions in licenses reinforced by technological measures. While comparing the state of e-books ILL with e-journals ILL (Xiaohua Zhu , Lan Shen, 2014), the factors come out as:

- ☞ Licensing restrictions,
- ☞ Lack of technical means,
- ☞ A barrier of perception.

The electronic licensing initiatives in the past with few modifications have emerged to cater the challenges of methods to deal with licencses. The study of various organizational policies would give a chance to understand the approaches towards license management. This may lead to formation of previously expressed, registry of electronic licenses. There are many complexities such as license specificity, definitions of authorized users when dealing with electronic licencses. License terms and pricing models demand understanding to cope with the consecutive events. The conceit of library in context with e-books is often downsized by conditions in licences and technological restrictions.

The objectives, scope and methodology of the study

The intrinsic nature of e-books and their relation with the users' preference has been the core objective of this study. Library is facing continuous challenges to cope with the purchasing parameters has also been a considered factor. The insight which will be reflected by the study will pave way to find and frame efficient policies towards collection development, especially the e-books. The user community of central library, JNU has been surveyed to find out the patterns and current practices by the readers of the library. There has been an effort to find out the extent of use of e-books, their role in acquiring procedures, promotion policies and awareness. There has been various studies on e-books usage and perception (Edward W. Walton; Rojeski, Mara; Silas Marques; Graham Martindale, Peter Willett, Roger Jones; Mara Rojeski; Elaine Mulholland, Jessica Bates; Carlock, D. M.) which have been considered constructive for developing the questionnaire to be used in this study. The study is based on primary research gathered from both users as stated earlier. A survey of undergraduate and graduate students, Research Scholars (M. Phil.), Research Scholars (Ph. D.), Research Associates and Faculty Members was undertaken. No discrimination was made to find out

the users' perception and the usage patterns. The respondents were chosen randomly and served a questionnaire to complete the survey. Questionnaire for users were designed keeping the objectives in mind. The total number of questionnaires served was 300. The total responses received were 190 so the overall response rate of 63.3% was found. There have been 15.79% U. G. Students, 33.68% P. G. Students, 22.11% Research Scholars (M. Phil.), 26.32 Research Scholars (Ph. D.), 0.53% Research Associates, 1.57% any other kinds of respondents. In the survey, it was found that no faculty member was present as respondent. The random sampling was chosen to provide an equal opportunity to all to respondents. The random sample does not give any direct control over the sample profile. The sample gave opportunity to all kinds of users of library so the results provide a general view of the findings.

Data Analysis and Discussion

Users' Status

There are various kinds of users, majority of which are undergraduates and post graduate students. Another significant type of respondent is research scholar. In an academic environment, the masters and research students are the prominent kind of users that affect and influence the presence of resources in library. In JNU Central Library, students envisage the demand and supply of information sources.

Awareness and Usage of e-books

Regarding awareness and use of e-books, the data reflect an interesting fact that majority (76.84%) of the users is aware of e-books yet only 36.32% of them have used. This information creates a curiosity to enquire further about the less use in practice though a majority of users is aware of e-books. The awareness aspect depicts the picture of proper knowledge of library's resources yet the use aspect compels to rethink about the practice in general.

Frequency of using e-books

The frequency of using e-books may present a different yet related glimpse of awareness and use of e-books. Almost equal numbers of users (26.84% and 31.05%) have reflected a picture that seems quite contrary in itself. There are a good number of users who use e-books daily and almost similar number of users has indicated a rare use of e-books. While discerning the other frequencies of use, it is found

that few of them (15.26% users) use e-books on weekly basis. 14.74 % of them visit e-books monthly. This kind of usage frequencies informs about the users that some of them are ardent readers and for few are casual demands of e-books. Though majority of them are aware yet a significant number of users does not use the e-books.

Factors against use of e-books

The awareness and use of e-books are very important to be known. While asking the reasons for not using e-books, the interesting yet technically related factors sound very convincing. Very few of them (10% users) have said that they were not aware of the e-books. A good number of respondents have told about the convenience facet concerned with e-book reading. 30.53% users stated that they did not like reading on the screen. Another significant side is informed as 24.21% of users told that the book they needed was unavailable as e-book. This aspect of findings states about the demand of e-books. The reflected choice is electronic type of book but the unavailability of the same deters the use. There is need to create avenues for having more number of preferred choice i.e., e-books if library readers demands.

Barriers to E-book Consumption

The barriers to e-book consumption express the various causes which may or may not be directly related with the unavailability of e-books. The factors associated with the less consumption of e-books have been carefully asked during this study. Studying the barriers towards e-books usage and consumption again provide those factors which are prevalent in other kinds of libraries. Somehow, the combination of reasons can be held responsible as the data suggest. It is found that 17.37% users were unaware of e-book availability. Though library has a vast number of computer systems and availability of space to use own laptops yet the factor of limited access to equipments and devices has been stated by 15.26% respondents. The demand and choice of e-books are again reflected. Another reason is here to state, the scarcity of availability of titles in electronic format by 15.79%. The choice is not always dominated by electronic kind, 31.58% respondents prefer print books. So the barriers inform about the demand, choice and preferences of users in the current times.

Access

The accessing of e-books might be little tricky for the respondents. The aspect such as availability of

MARC records has been stated (19.47%). This may not be in the knowledge of a big number of users. But the accessibility is provided by the library catalogue, as 38.95% respondents have stated. Thus the efforts of library are seen here in the form of proper incorporating and linkage to e-books in the public access catalogue. The information about the access points among the library readers enhances the visibility of e-books. Availability of records of e-books in the library software, particularly finding through library OPAC supports the e-books usage.

Announcement of E-books by Library

The declaration of availability of e-books by library plays a crucial role in creating awareness. It also depends on the curiosity of respondents if they pay attention to such activities. There are three regular platforms used to announce about the e-books; library website, blog and the regularly held information literacy and training sessions. Most of the users (44.74%) find the information on e-book web page of library website. If concentrated on the number of users visiting blogs (15.26%), the approximately equal number of respondents has been informed through information literary sessions (15.79%).

Purpose of using e-book

The purposes of using e-books are concerned with the academic purposes as found in academic libraries. The prominent purpose has been stated as study (46.84%), followed by for research (35.26%) by the respondents. For the preparation of teaching purposes, 14.21% of the respondents use e-books. The learning and the teaching purposes are touched by e-books. It is also significant to bring out that for training purposes, 4.21% users are using e-books. There is a significant number (24.74%) of library readers that use e-books for studying and research. The use of e-books for training is significantly low. The usage and intentions towards the e-books in routine of the library readers indicate more use among students and researchers rather than faculty members.

Types of e-books

There are various format and kinds of e-books in the market which the libraries are acquiring. The use of these kinds of e-books is studied by asking the preferences of users. Majority (61.05%) uses e-books, meant as textbooks and related with their coursework. This reason is obvious as majority of the respondents are U.G. and P. G. students. A good number of

respondents have reflected the use of reference books (37.37%) followed by the research monographs (by 20% respondents) and conference proceedings by 10.53% library readers.

Experience at using e-books in comparison with Print Books

The data reflect the experiences of e-book users for association with the e-books if compared to print books. The access and availability of vast amount of information easily is one of the reasons (40.53%). Bigger number of respondents (50%) have stated about the ease of use regarding the e-books. The kinds of features present in e-books facilitate the access to and within the e-book. This experience shows the continuous development in the presentation of e-books to ease the reading and accessibility of the content of e-books.

Publication Types of Chapter Downloads

To understand the downloading of the chapters or portions from the various kinds of e-books, the preference and choice of textbook type of material is found highlighted if compared to other kinds of e-books. Majority of users (56.84%) have stated about the downloading of chapters from textbooks. Other significant type of source is reference e-books (20%). Various kinds of e-book formats are also available such as proceedings, monographs, handbooks, contributed volumes, reviews etc. The downloading of chapters from the e-books other than the type of textbook exist but not as popular as the textbook kind of e-books. The reference books (20%), handbooks (17.89%) and contributed volumes (10%) are also important. The popularity of textbooks is leading among all these types of e-books. Textbooks serve the objectives of syllabi based information presented in the manner that is suitable for undergraduate as well as post graduate students.

Technical Causes of use

To find out the main reason for a particular e-book, the respondents pointed out various causes. Discerning the data, as far as the technological aspects concerned, the library readers consider more than one factor responsible. Data reflect that keyword searching (30%) is very significant while locating an e-book. Various other factors have received attention among the e-books readers in a considerable manner. This kind of response reflects that various reasons are important to identify and locate an e-book. No single factor is responsible for prominent use of an

e-book. A combination of factors functions in favor of increased use of e-book, in subject-wise approach with the technological bent.

Starting of searching for e-books

As reflected earlier too that library catalogue helps the respondents to search the e-books, again 50% of the respondents have stated the use of library catalogue and OPAC to find and locate the e-books. A significant number of e-book users (45.79%) reflected the use of search engine. Library is using 'discovery service' platform yet only a small number of respondents (2.11%) have stated its use. Few number of respondents (6.32%) have stated about the publisher/aggregator/ vendor provided web site as starting point for e-books. There is need to create awareness about the search box to discover the e-books.

Method of reading/using the e-books

It is found that majority of e-book users (47.89%) download the desired e-books and like to read later on. A good number of the users (26.84%) have stated that they read online/ on screen and do not bookmark the e-books. 13.16% read e-books online/ on screen and bookmark for future reference. 15.26% respondents read e-books on screen but print some pages/chapters. The method of copying and pasting is also reflected by respondents which are very few (5.26%) while comparing to other method of reading the e-books. The use of other personal electronic gadgets is also found as 18.95% download on personal reading device for reading later. The suitability and level of comfort play a significant while using e-books. The ambience for reading e-books or use in near future is also important.

Problems while using e-book

There are problems faced by the respondents which are stated by 51.05% of respondents. Few of the respondents were not sure about it.

Problems Faced

The kinds of problems faced by respondents may provide a look where the library should pay attention to enhance the use and popularity of e-books. E-book users (34.74%) have faced problem in downloading the e-books. Here the problems in downloading may be lack of awareness of techniques as well as the rights, terms and conditions at the end of user. Other few significant aspects are viewing the e-books (15.26%), followed by logging-in (14.74%).

The trivial aspects such as printing are also reflected by a very few number of respondents (5.26%). These problems are related with the network infrastructure and facilities. None of the problem is associated with the lack of knowledge at the end of user regarding the e-books.

Devices for the use of e-books

The majority of the respondents (77.89%) use laptop, PC or Notebook for reading the e-books. Perhaps the size of screen and comfort also matter using a device to read an e-book. This is distantly followed by Smartphone or mobile device (17.37%) and tablet (14.74%). Library and classroom computers are also used by few of the respondents (7.89%). The presence of other portable devices such as dedicated e-book reader and interactive white boards exists, though very little. Again, the reading or visual comfort is significantly placed if the choice of equipment or device is considered. The size of screen, illumination, physical capacity and habit of reading onscreen also become deciding factors to use a type of e-book reading medium.

Quantity of information use/reading from an e-book

The quantity of material downloaded from e-books matters in terms of usability of an e-book. About 32.63% respondents read 3-4 chapters from an e-book. It is significant to state that entire e-book is also read by e-book users (30.53%). A significant number of users also read one to two chapters from e-books (23.68% and 10.53% respectively).

The reasons for preference of e-books

There are various reasons reflected by the respondents for preference of e-books. The multiple answers by respondents again state that no single factor is responsible for preferring an e-book. A combination of factors compels the respondents to prefer the e-books. The data supports that attributes of e-books as well as accessibility (34.21%) options make the inclination towards e-books. The usefulness for reference (36.32%) and simultaneous use with search facility (27.89%) are the reasons which are useful for e-books creators also.

Knowledge of rights and permissions

The knowledge of downloading e-books, their terms and conditions require attention to educate them. The thinking of sharing e-books available through Central Library with someone else affiliated

with JNU (15.79%) and posting (4.74%) e-books on websites/ or email outside JNU do not seem right and needs proper education about the use practices such as copyright, fair use etc. The printing e-books for the personal use (27.37%) as well as downloading e-books available through Central Library and save it on the computer/device for personal use (38.95%) are the respondents who are well informed. There is fair need of spreading knowledge about the copyrights of e-books among all library users. A major number of users do not know explicitly about the permissible using process.

Role of Users in Purchasing

The data states about the users' demand and their role in collection building aspect of e-books. A significant number of users (33.16%) have informed about the request before the library for e-books. This kind of approach of library users reflects the flexible and direct approach of users in placing their demands regarding e-books. Other aspects also exist such as acquiring an e-book on the basis of presence of print books. The knowledge of aspects such as perpetual access (10.53%), subscription (15.73%) and the prioritizing of e-books (13.16%) is intelligent attitude towards e-books acquisition.

Table 1:

Sl. No.	Respondent	Response	%
A.	U. G. Student	30	15.79
B.	P. G. Student	64	33.68
C.	Research Scholar (M. Phil.)	42	22.11
D.	Research Scholar (Ph. D.)	50	26.32
E.	Research Associate	01	0.53
F.	Faculty Member	00	00
G.	Any other	03	1.57
	Total	190	100

Fig. 1:
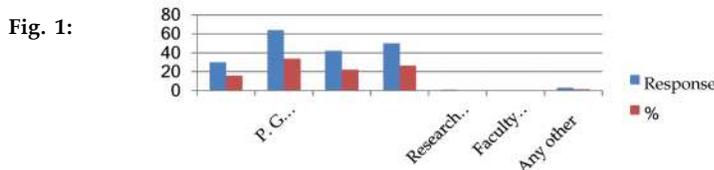
Table 2:

Sl. No.	Awareness and Use Aspect	Response	%
A.	Are you aware of E-books	1 46	76.84
B.	Have you ever used e-books at JNU or Elsewhere	69	36.32

Fig. 2
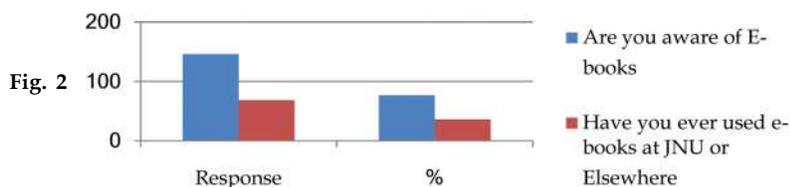
Table 3

Sl. No.	How often do you use e-books?	Response	%
A.	Daily	51	26.84
B.	Weekly	29	15.26
C.	Monthly	28	14.74
D.	Rare	59	31.05

Fig. 3
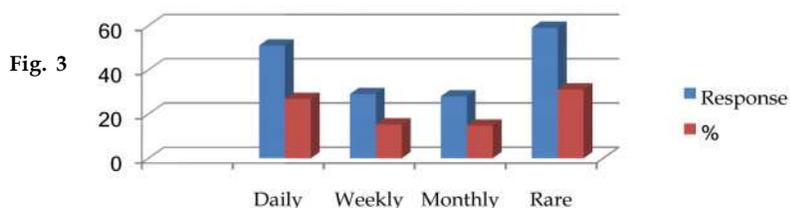
Table 4

Sl. No.	Factors against use of e-books	Response	%
A.	Was unaware of them	19	10.00
B.	Do not like reading on screen	58	30.53
C.	The book needed was not available as an e-book	46	24.21
D.	Other (please specify in the comment box below)	11	5.79

Fig. 4
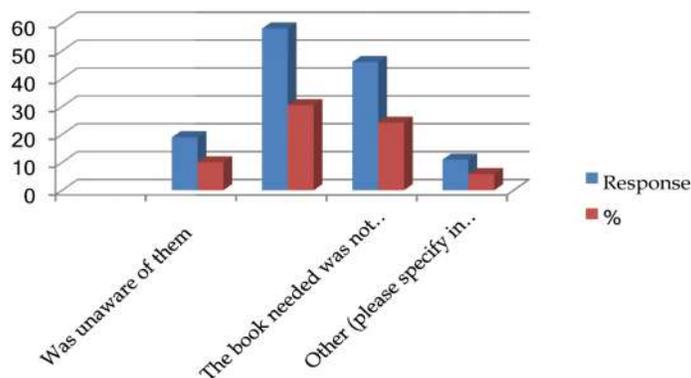
Table 5

Sl. No.	Barriers to e-book Consumption	Response	%
A.	I am unaware of e-book availability	33	17.37
B.	Limited access to e-reading equipments/devices	29	15.26
C.	There are too few titles available	36	18.95
D.	Unavailability of titles	30	15.79
E.	I prefer print books	60	31.58

Fig. 5
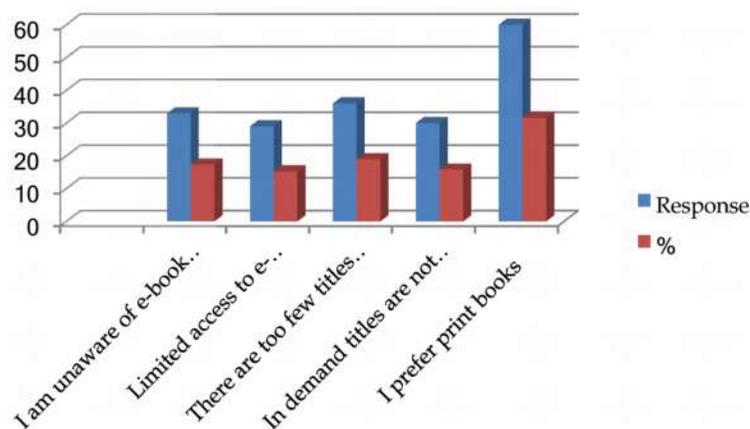
Table 6

Sl. No.	Accessing e-books	Response	%
A.	Do you find MARC records available for each e-book alongside the records for all print books?	37	19.47
B.	Can you access e-content as you search the library catalogue?	74	38.95

Table 7

Sl. No.	Does the library announce new e-book bundles and specific titles?	Response	%
A.	On the Library's e-book home page	85	44.74
B.	In library blogs	29	15.26
C.	In information literacy and training sessions	30	15.79

Fig. 6
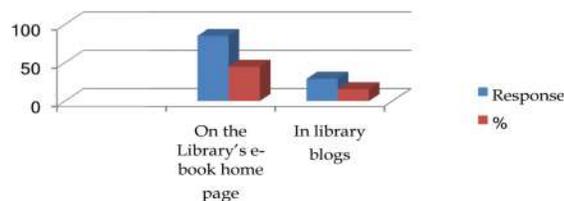
Table 8

Sl. No.	Purpose of using e-book	Response	%
A.	For study and for research	47	24.74
B.	For study	89	46.84
C.	For research	67	35.26
D.	For training purposes	08	4.21
E.	For the preparation of course and teaching materials	27	14.21

Fig. 7
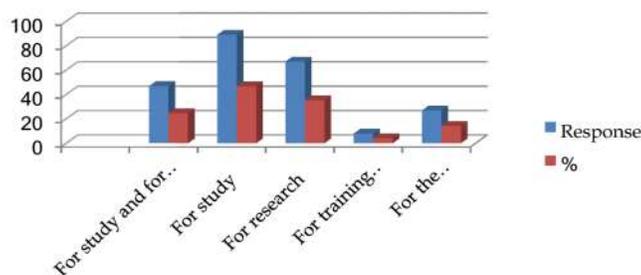
Table 9

Sl. No.	Types of e-books	Response	%
A.	Textbooks/Coursework books	116	61.05
B.	Reference books/Encyclopedia/Dictionaries	71	37.37
C.	Research Monographs	38	20.00
D.	Conference Proceedings	20	10.53

Fig. 8
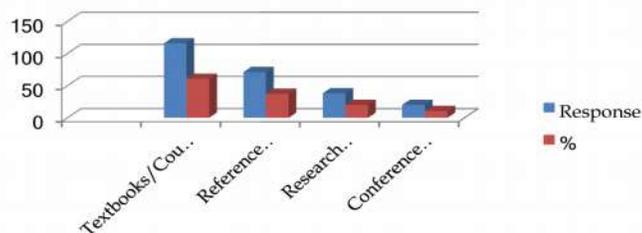
Table 10

Sl. No.	Experience at using e-books in comparison with Print Books	Response	%
A.	e-books offer greater access to the information within and across volumes	77	40.53
B.	Allowing users to dig in and out of e-books easily	95	50.00

Table 11

Sl. No.	Publication Types of Chapter Downloads	Response	%
A.	Textbooks	108	56.84
B.	Proceedings	14	7.37
C.	Monographs	22	11.58
D.	Handbook	34	17.89
E.	Contributed Volume	19	10.00
F.	Protocols	11	5.79
G.	Reviews	29	15.26
H.	Reference Work/book	38	20.00
I.	Other (Please specify)	04	2.11

Fig. 9
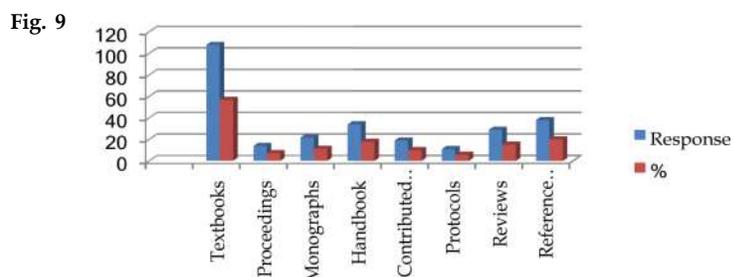
Table 12

Sl. No.	Technical Causes of use	Response	%
A.	Perform keyword searches on selected topics to locate an e-book	57	30.00
B.	Search for specific titles presented with/on a reading list	35	18.42
C.	Search e -books that had particular relevance or reputation in their given field	36	18.9
D.	Browse titles within a certain discipline	41	21.58
E.	Search for a specific topic with keyword search	49	25.79
F.	Search for e -books which I heard and found interesting	28	14.74
G.	Search e -books when print book is not available	57	30.00

Fig. 10
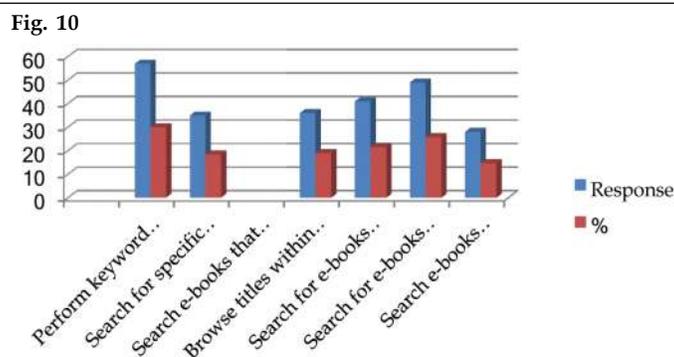
Table 13

Sl. No.	Where did you start searching for e-books?	Response	%
A.	Library catalogue/OPAC	95	50.00
B.	Search engine	87	45.79
C.	Discovery Service	04	2.11
D.	Publisher/Aggregator/Vendor provided site	12	6.32

Fig. 11
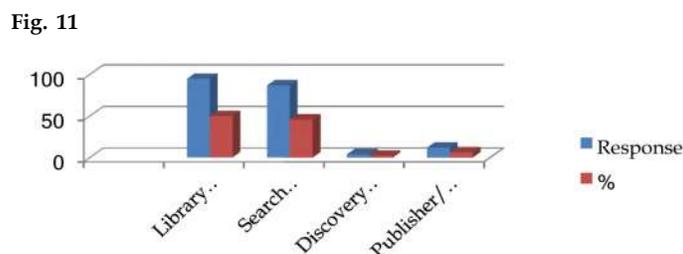
Table 14

Sl. No.	Method of reading/using the e-books	Response	%
A.	I read it online/On screen and do not bookmark	51	26.84
B.	I read it online/On screen and bookmark for future reference	25	13.16
C.	I download to read later	91	47.89
D.	I read on n screen but print some pages/chapters	29	15.26
E.	I copy/paste to read later	10	5.26
F.	I download on personal reading device for reading later	36	18.95

Fig. 12
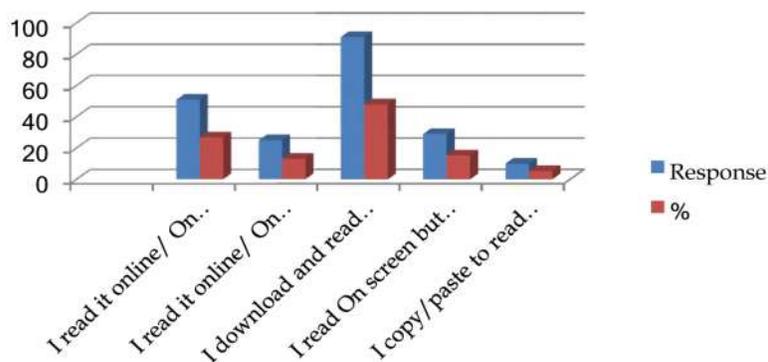
Table 15

Sl. No.	Do you experience any problem while using/read ing e-book?	Response	%
A.	Yes	97	51.05
B.	No	77	40.53

Fig. 13
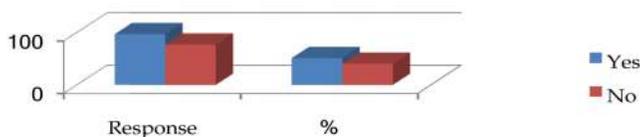
Table 16

Sl. No.	Problem is faced in	Response	%
A.	Logging in	28	14.74
B.	Viewing the e-book	29	15.26
C.	Downloading	66	34.74
D.	Printing	16	8.42
E.	Any other (Please specify)	10	5.26

Fig. 14
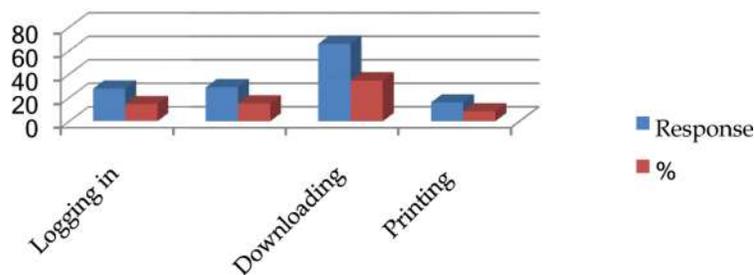
Table 17

Sl. No.	Device(s) on which you most often read e-books	Response	%
A.	Laptop, PC or Net e-book	148	77.89
B.	Interactive whiteboards	01	0.52
C.	Tablet	28	14.74
D.	Dedicated e-book reader	07	3.68
E.	iPod Touch or similar	10	5.26
F.	Smartphone or other mobile device	33	17.37
G.	Other portable device	02	1.05
H.	Library/classroom computer	15	7.89

Fig. 15
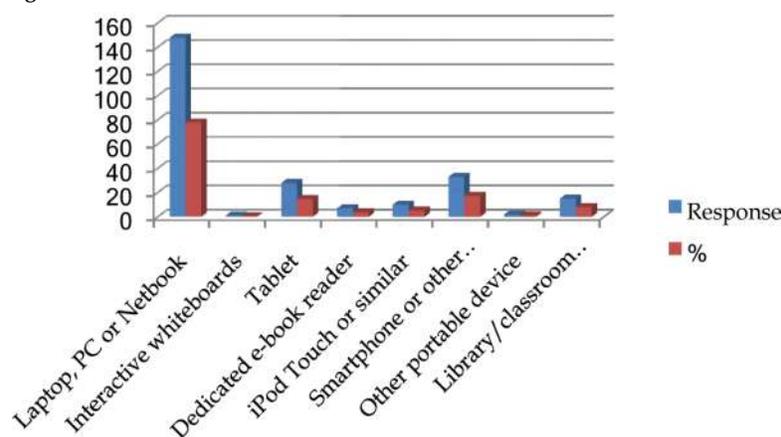
Table 18

Sl. No.	How much do you use/read from an e-book	Response	%
A.	1 chapter	45	23.68
B.	2 chapters	20	10.53
C.	3-4 chapters	62	32.63
D.	Entire book	58	30.53

Fig. 16
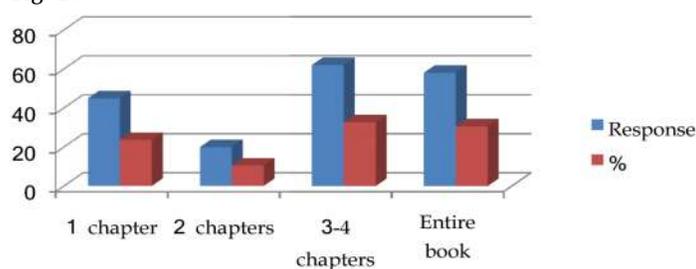
Table 19

Sl. No.	Reasons for e-book preference	Response	%
A.	Accessibility	65	34.21
B.	Simultaneous use and search facility	53	27.89
C.	Space saving and Portability	47	24.74
D.	Useful for easy reference	69	36.32
E.	Facility of identifying relevancy	23	12.11
F.	No restriction on keeping e-book for a long period	32	16.84

Table 20

Sl. No.	Knowledge of rights and permissions	Response	%
A.	All the e-books available in Central library are under copyright.	57	30.00
B.	I can share e-books available through Central Library with someone else affiliated with JNU	30	15.79
C.	I can print e-books for my personal use.	52	27.37
D.	I can download e-books available through Central library and save it on my computer/device for personal use.	74	38.95
E.	I can share an e-book with someone not affiliated with JNU.	21	11.05
F.	I can post e-books on websites/ or email outside JNU.	09	4.74

Table 21

Sl. No.	Role of Users in Purchasing	Response	%
A.	I request the library for e-books to purchase.	63	33.16
B.	I request the e-book on the basis of existing print copy.	27	14.21

C.	I request the e-books with no print copy available.	26	13.68
D.	Library should buy e-books instead of print rather than to accompany it.	20	10.53
E.	Library should buy e-books with perpetual access.	20	10.53
F.	Library should buy e-books on subscription basis.	30	15.79
G.	I prioritize the e-books due to budget constraints and inform which titles should be bought earlier.	25	13.16
H.	E-books are available on Inter Library Loan.	04	2.1
I.	I have received e-books on Inter Library Loan.	05	2.63

Discussion

The e-books are popular medium to gain knowledge in a way that is easy and portable itself. The students and researchers are the main types of readers in an academic library so in the JNU too these readers are making e-books highly accessed information source. In the times of high speed internet and vast number of computer systems, the library users are aware of e-books availability yet few users displayed reluctance regarding e-books. Even after the high awareness, few of the library users mentioned of not using the e-books. Certainly the reasons need to be explored. Though most of the e-book users tend to use-books daily yet a group exist that rarely uses e-books. These areas might have concerned the library authorities and the e-book providers to find out the factors behind less awareness. It is found that most of the users prefer e-books yet the print-books admirers are also present. Is it the question of choice or the existence of few barriers, definitely the attention embarks? The accessibility through keyword searching in library OPAC and visibility through library website support the efforts of library yet the purposes and objectives of the readers play an important role. The academic libraries reflect the study and research as main goals of users so the e-textbooks and e-reference materials are the major types of resources in trend. The access features, indexes and ease of jump to anywhere in the e-book are the added values. The variety of reasons and attributes make path of reaching to e-books. Though a good number of users like to read the e-books online or onscreen on laptops etc. but downloading and reading later is also very popular though they ecperienced few problems as stated by few respondents. Reading books on mobile or smart phone device is not as popular as laptops. Though sufficient number of users read entire book or major portions yet there are people who find few chapters useful in an e-book. With the increasing usage, the knowledge of copyrights among the e-book users is very much in need.

Conclusion

The e-books have created a niche yet the real exposure is to take place. The respondents' demands disclose the need of better marketing strategies so that the awareness among the students and other users can lead them to use of e-books. The licensing issues as well as knowledge about inter library loan seek attention. The current scenario reflects involvement of library users in e-books acquisition which also indicates the need of planned participation to enrich the e-books collection. *E-books* have replaced the *print versions, sometimes going together*. There is continuous effort in the area of increasing the collection in electronic format but the active awareness as well as participation will play major role in e-books usage and proliferation.

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Emerging Technological Innovations in Library Management and Services

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Abstract

In the modern era, information seeking behavior is increasing day and day. The ancient or traditional library management and services are not enough to satisfy the knowledge sector of the user. So the emerging of new technological innovations are necessary to provide the right information to the right users in the right time. This paper deals with the recent emerging innovations in the information technology and how they are useful to provide the effective services of the library.

Keywords: Information Seeking Behavior; Technology; Network Services; Innovative Methods.

Introduction

In the emerging knowledge society, the libraries have to face many challenges to satisfy the user needs for the past few decades. New technologies are used to improve the library services and management and for the preservation of library materials for a long time because library has all the living records of all human civilization. These records are the treasure to the future generations. In the changing scenario, information and communication technology (ICT) has been the most instrumental factor for the effective library services.

Innovation

The concept of innovation is to make or identify a meaningful interpretation or an idea to solve the problem. Another way it is a significant task of Problem solving Technique. Online dictionary of library and Information science describes the best innovative practices as follows, "In the application of theory to real-life situations procedures that, when properly, applied constantly yield superior results and are therefore used as reference points in valuation of the effective of alternative methods of accomplishing the same task."According to Peter Drucker, the father of modern management science always refers that the innovation is the specific instrument of entrepreneurship that endows resources with a new capacity to create wealth.

Need of Innovative Service

Information seeking is thus a natural and necessary mechanism of human existence (Marchionini, 1995). Information seeking involves personal reasons for seeking information, the kids of information which are being sought and the ways and sources with which needed information is being sought. Change in this seeking behavior leads to the emerging innovation technologies in library management and services. Changing needs of users have changed the role of a librarian which has transformed a librarian into information professionals. Information professionals should work between the knowledge source and its seekers. Common obstacles in the information seeking process identified by respondents include lake of time, doubt about the existence of relevant information retrieval of too much of information and different with navigation and searching.

Emerging Innovations

There are so many innovative technologies emerging in library management and services in this latest trend. The libraries utilize the technologies According to their infrastructure, type of library, need of the library, the place where it is located and amount of fund allotted by the government to the library etc.

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Some of the specific technological innovations are:

1. Staff Management,
2. Training Programmes,
3. Resource sharing and networking,
4. Library Automation,
5. Open Source Software,
6. Internet Search Engines – Semantic Web,
7. World Wide Web,
8. E- Learning,
9. Word 2.0,
10. Digitalization.

Staff Management

For the effective and innovative library services the librarian and Library staff members should possess a high skill and have an updated knowledge of technical advancement in library science. They should understand the requirements of the users and satisfy their expectations. The librarian has also the responsibility to resolve the problems faced by the staff members due to their technical in expertise and ensure that they are user friendly. They should provide portable qualifications against nationally recognized competency standards. In a competency based assessment system. It is recognized that learning can come from a variety of sources, both on the job and off the job, formal and informal. System management specifies the way in which the systems in the library are interconnected each other and also to the outside world.

Training Programs

The goal of this Program is to motivate Professional staff and learners to enhance their skills and to update their knowledge. especially for the learners to increase their knowledge seeking behavior, to know the no of volumes in a particular library, working hours and type of a library and what are the services rendered to the users of the library. This is very useful to create a user friendly atmosphere for the learners and help to get the right information in a right time.

Resource Sharing and Networking

Resource sharing is nothing but sharing of library resources in terms of documents, manpower, services and equipments by certain participating libraries among themselves on the basis of the principle of co-operation.

Networking means putting together the sub sets of information centers or libraries in order to work in a co-operation manner.

The objectives of resource sharing are to create an environment in which libraries can offer better services and more materials in the same cost:

♦ To improve the utilization of resources between the users,
♦ Minimize the cost,
♦ Maximize the accessibility of resources,
♦ Extend the availability of resources.

Libray Automation

According to Webster's dictionary "automation is the technique of making an apparatus, a process or a system operate automatically". In other words, it is the machinery that mathematically manipulates information storing, select, presents and records input data or internally generated data. Automation is used for automatic technical process. The Automation is necessary in library because:

♦ Information explosion,
♦ Increase in the collection of libraries,
♦ Inability of users to explore the unlimited literature and information of their interest,
♦ Advances in the computer and communication technology,
♦ Wastage of user/staff time in locating the information,
♦ Provide wide access to resources within the libraries and elsewhere Planning for library Automation.

Open Source Software

OSS is computer software for which the source code has been made available for the users. Users are then able to read it or change as they wish. The open source software is one which would satisfy the following criteria.

♦ The source code may be adapted to individual required code be modified and passed to others.
♦ The software source code must be available at an accessible location
♦ Anyone may use open source software as their desire.
♦ No of OSS software have different versions used depends upon the type of library.

S. no	Oss Software	Version
1.	Avanthi	1.0
2.	Emilda	1.2.1
3.	Koha	2.2.0
4.	Gnutcea	1.5
5.	Learning Access ILS	–
6.	Obiblio	0.5.1
7.	Open bible	2.0.3
8.	Phpmy Bibli	2.0.3

Most projects have started as the classical OSS single developers. OSS makes the library management and services very effective.

The Semantic Web – Internet Search Engine

The semantic is the study of linguistic meaning. The term "Semantic Web" was coined by Tim Berners-Lee, the inventor of the World Wide Web and the Director of the consortium. He defines the Semantic Web as "Web of data that can be processed directly and indirectly by machines". It is actual concerned with the arrangements of their sentences and other linguistic objects express, not with the arrangements of their syntactic parts. The Semantic Web is Open Access information and it has the web resource policy. They are

☛ To provide the relevant context with minimum time consuming to search out irrelevant or outdated data sources.

☛ To help the users to get required information in correct linguistic meaning.

The Semantic Web throws light on the internet environment offered by the Web based learning system.

World Wide Web

Web is popularly known as the term of World Wide Web or Internet or Online. The internet and its " publishing Arm" the www are important components in the communication process. The Web is a client or server system used to asses all kind of information to anyone on the net. The information can be in the form of regular text, hypertext, Pictures, Sounds, Usenet newsgroups and other type of data. Web services provide a distributed information system and information sharing for any number of users at any time. It provides:

☛ A distributed information system.

☛ Receipts and delivery of electronic publication and access to data stored on remote computers.

☛ Online real time interaction with other network users

☛ Equal opportunity for access to all type of users.

E-learning

E-learning is a continuous process when the learner is unable to attend the traditional methods of learning which was introduced in our educational patterns. The students need to learn the syllabus with nearby libraries or materials sent by the course organizer. Modern media such as radio and television were also used in the distance mode of learning process. These medias benefit a lot the learner, but they have their own limitations. The distance mode of learning process is further strengthened by video conference mode. The nodal centre will have studio where the experts assemble and deliver the lecture. This technique will create the environment of the classroom and enables direct interaction between the teacher and learner.

E- Documents -There are some information sources, which are counted in the category of Non-Documentary sources, the data are transferred in the form of CD's , DVD's, Microfilm, Audio Visual Materials. They are called Electronic Documents or E- Documents.

The Books available in Electronic form are called E- Books.

The journals available in Electronic form are called E- Journals.

It is very useful to the users because it can be read in any time and anywhere by having this material using computer and it can be preserved for a long time.

Web 2.0 Technology

The Web2.0 is becoming an important and central topic in our information world, and more and more libraries worldwide are using its different applications. Libraries and librarians all over the world are using web2.0 technologies to promote services, share information, engage with users and network with colleagues on a global scale. Some libraries use blogs which serve as excellent sources of information- a place where librarians can express their opinion.

Digitalization

Data available in the form of digits is library is called a digital library. Converting the data to this form is called digitalization and it is stored for long term. Retrieving the metadata from data file, interpreting the retrieved data in a decoded

representation rendering the data for human access is also includes the process of digitalization. This process is a very significant method for easy access of the users and long term accessibility.

Conclusion

The successful operation of any library depends to a large extent on the choice of library collections, management and services. Consequently, the librarians must be aware of the user community connected to the library sources. Emerging Innovation techniques are very much useful for giving the right information for the right user in right time.

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Understanding the Recent Trends in Library Mangement and Information Services in University Library: A Comparative Study of CCS University, Meerut and MJP University, Bareilly

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Abstract

The paper discusses the trends and practices in the university libraries regarding the library management and reference services. The paper discloses the outcomes of a survey study taken in the libraries of CCS University, Meerut and MJPU, Bareilly. The paper highlights the changes being faced by the university libraries due to impact of web resources and IT applications in libraries.

Keywords: Library Management; IT Applications; Library Services.

Introduction

The library management involves mental exercises as well as the application of principles of management. The combination of both leads to better arrangement of library collection and services. As described in literature, the library management is the process of coordinating total resources of an organization towards the accomplishment of desired goal of that organization through the execution of a group of inter-related functions such as planning, organization, staffing, directing and controlling. Application of principles and techniques of management in library is known as library management. Traditionally, the library management system or Integrated Library System (ILS) was responsible for running library efficiently and effectively. Over the past few years role of Integrated Library System (ILS) has been changed. The library resources are managed more and more by systems. The library management system has the traditional functions such as acquisition, cataloguing and access to resources. The challenges of management in libraries have increased tremendously in recent years. As library is a growing organism, library management apply/adopt principles and techniques for controlling or managing this growth and occurring changes.

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Need and Importance of Library Management

The library management is needed in keeping view the goals, interrelated functions, resources as well as the users. Managing various aspects in a library also paves way for efficient functions and services from the library staff.

Various Services in University Libraries

The university libraries are concerned with research oriented library services. To provide the services for researchers and other people in the higher education, the university library provides many following services to the users.

i. Digital library 24/7 services available in university library.

ii. Current Awareness Services (CAS).

iii. Selective Dissemination of Services (SDS).

iv. Book bank scheme.

v. Photo copying facility.

vi. Abstracting and indexing services.

vii. Reference and referral services.

viii. Current bibliographic data bases.

ix. Online searching.

x. Document copying and CD writing.

xi. Internet facility for students, staff and research scholars.

xii. Access online journals and data bases.

xiii. Access e-book, e-lectures and multimedia content.

xiv. Access other library data basis.

xv.   OPAC services.

xvi. Providing of exclusive book and periodicals for students preparing for competitive examinations

xvii. Inter library loan.

xviii. Photo copying facility.

xix. Reference service.

xx.   CD ROM search.

xxi. Internet and E-mail facility.

xxii. Digital document on demand.

Use of the technology enables to manage the library resources and services. The activities which are routine in nature do not become cumbersome and the applications tend to become more productive. The internet and web technologies are therefore proving to enhance the interest of users as well. Various functions as acquisition, circulation, resource sharing, reference services, users education are now automated or dependent on computer systems.

Few Glimpses from the Past

The library management and provision of services according to choice of users' demand is not a simple task. The literature reflects various musings from the library scenario. According to Graham Walton (2008) wider management literature for establishing a new brand for libraries are needed. The library user can get easily services available to them. Library staff has an important role for developing and delivering library brand. Chris Neuhans & Kent Snowden (2003) mentions a committee organized for heightening administration and faculty for creating awareness about Library resources and services to the students. They find out what the services are being provided to research university committee. The efforts and experiments adopted by committee e.g. email postings, student's surveys, online library news letters and sidewalk slogans got encouraging results.

Steve O' Connor (2007) is concerned with the exploration of intelligences that the library manager/leader needs for doing his work efficiently and perfectly. For providing library services he requires more intelligence, different and new skills. Jane Bosten (2004) presents the need of changes in traditional library services, the development of methods and standards for measuring the performance in the digital library. The assessment of the digital library is new, library's traditional and digital contributions to achieve the aim of its institution. She has concerned with the management culture of the library and its parent organization. Nick Moore (2000) presents the applications and implications of the internet in the libraries and for the libraries in current and future. The features of online access, search sites and collection developments, security issues and disadvantages of the internet for libraries are also described. The influences of the internet in library science are moving. Jason Vaughan (2005) states his experiences related to information technology, maintenance, enhancement and the future developments in new academic library. The challenges in the technology also put effect on library systems and services. He suggests that administrator to maintain a comprehensive information technology environment. Ola Palerot and Louise Limberg (2011) mention here information sharing activities. These activities are intertwined with other information practices such as information seeking and use. The information and communication technologies (ICTs) can be seen as important parts of the arrangements of human entities, form the social sites in which the scholars are active. The relation between Information and Communication technologies and other material arrangements and the ways how information is used and shared.

Reijo Savolainen (2011) describes the articulation of people's need of information and providing the information on different sites in various types, more specifically in blogs and Internet discussion forums. The information provision drew strongly on the use of personal knowledge. He describes that there is no remarkable difference between the types of on-line sites with regard to articulation of information needs and using sources for providing information to others. According to Sonja Spiranec and Mahaela BanekZorica (2010) the new meaning and understanding of the central conceptions in information literacy are changing the focus of classical information literacy towards information literacy 2.0. Most of the aspects of current information literacy developed from a print based culture, which is designed with the transient and hybrid nature of digital environments. Liangzhi Yu (2010) describes that the information is poor and disadvantageous because of individuals' information resource bases, information practices and information assets.

Objectives and Scope of the Study

1.   To identify the application and implementation of new technologies being used in library management and services in Central Library of Mahatma Jyotiba Phule University, Bareilly (MJPU) and Choudhary Charan singh University, Meerut (CCSU).

2. To discover which type of reference services are being provided to the staff, students and faculty in Central Library of Mahatma Jyotiba Phule University, Bareilly and Choudhary Charan singh University Meerut.

Scope

This study has concentrated to make the Comparative Study of library management implied and services provided to university students and scholars. It has investigated whether the new information technologies such as internet, e-mail, CD-ROM etc being provided to the user are satisfactory or meet the accurate requirement of the research scholars and students. The importance of reference services in university library cannot be over estimated. A direct personal assistance should be given to the user in search of information. Reference sources and reference services should be promoted. The study is confined to Central Library, Mahatma Jyotiba Phule, University, Bareilly and Choudhary Charan singh University Meerut. The survey is about the management changes and information services in C.C.S. University Library, Meerut and M.J.P. University Library, Bareilly. The collected data is organized and tabulated by using statistical method in tables and percentage. The data is collected by Questionnaires for library users. Total 200 Questionnaires were distributed among C.C.S. University Library, Campus and Library during 2013-2015 and 168 Questionnaires were returned. Total 200 Questionnaires were distributed among M.J.P. University Library, Campus and Library during 2013-2015 and 176 Questionnaires were returned.

User Data Analysis and Interpretation

The survey has been careful to present the real picture from the users' point of view and experiences.

Table 1: Status of the user

		C.C.S University Library		M.J.P. University Library	
		Response	**Percentage**	**Response**	**Percentage**
a.	PG	104	61.90%	114	64.77%
b.	UG	46	27.38%	58	32.95%
c.	Faculty	02	1.19%	02	1.13%
d.	Non teaching staff	04	2.38%	02	1.13%
e.	Others (please specify)	12	7.14%		

Table 2: Visits to the library

		C.C.S University Library		M.J.P. University Library	
		Response	**Percentage**	**Response**	**Percentage**
a.	Daily	140	83.33%	82	46.59%
b.	Twice a week	04	2.38%	34	19.31%
c.	Once a week	00	00%	22	12.5%
d.	Occasionally	18	10.71%	36	20.45%
e.	Never	06	3.57%	02	1.13%

Various tables below present the data and the findings as:

In the above table, the data reflect about the status of users in these libraries. It is found that C.C.S. University Library 61.90% users are of PG and 27.38% users are of UG, faculty is 1.19% and Non teaching staff is 2.38%. In M.J.P. University Library 64.77% users are of PG, 32.95% are of UG, 1.13% users are of faculty and 1.13% users are from non teaching staff.

The data reflect that in C.C.S University Library 83.33% users visit daily and 2.38% users visit twice a week. 10.71% users occasionally visit to the library and only 3.57% users never visit to the library. There is diversity in the kinds of users as well as their visit pattern in the library. It is visible that in M.J.P

Table 3: Purpose of visit to the librarya

		C.C.S University Library		M.J.P. University Library	
		Response	**Percentage**	**Response**	**Percentage**
a.	Borrowing and returning of reading material.	54	26.73%	32	18.18%
b.	Preparation of classroom teaching	44	31.78%	76	43.18%
c.	Gathering of professional information	14	6.93%	16	9.09%

d.	Keeping up to date	38	18.81%	28	15.90%
e.	Consulting reading material for research	20	9.90%	16	9.09%
f.	Carrying out internet search	16	7.92%	08	4.54%
g.	Any other (please specify)	16	7.92%		

University 46.59% users visit daily and 19.31% users visit twice a week. 12.5% users visit library one time in a week, 20.45% users visit library occasionally and only 1.13% users never visit library.

A good number of users (26.73% users) visit library for borrowing and returning of reading material and 31.78% users come to the library for the preparation of classroom teaching in C.C.S University Library.

7.92% users come only for carrying out internet search and 7.92% users visit library for other purposes. In M.J.P. University Library 18.18% users visit library for borrowing and returning of reading material and 43.18% users come to the library for the preparation of classroom teaching. Only 9.09% users come for gathering of professional information, 15.90% users visit to the library for keeping themselves up to date,

Table 4: Various categories of reading material available in the library and the frequency of their use: C.C.S University LibraryResponses

S. No.	Categories	MF	Percentage	F	Percentage	S	Percentage	R	Percentage	N	Percentage
1	General Books	33	19.64%	21	12.5%	26	15.47%	16	9.52%	72	42.85%
2	Reference books	68	40.47%	51	30.35%	19	11.30%	17	10.11%	13	7.73%
3	Periodicals	54	32.14%	33	19.64%	25	14.88%	14	8.33%	42	25%
4	General Magazine	23	13.69%	30	17.85%	42	25%	35	20.83%	38	22.61%
5	Thesis	37	22.02%	38	22.61%	19	11.30%	10	5.95%	64	38.09%
6	CD ROM database	22	13.09%	24	14.28%	24	14.28%	25	14.88%	73	43.45%
7	Online database	22	13.09%	25	14.88%	24	14.28%	41	24.40%	56	33.33%
8	e-journals	26	15.47%	25	14.88%	28	16.66%	43	25.59%	46	27.38%
9	e-reference sources	17	10.11%	08	4.76%	15	8.92%	11	6.54%	117	69.64%

(MF= Most Frequently, F= Frequently, S= Sometimes, R= Rarely, N= Never)

9.09% scholars visit to the library for consulting reading material for research, 4.54% users come only for carrying out internet search.

In the above table, C.C.S University Library 19.64% users most frequently use general books. 40.47% users use reference books most frequently, 30.35% users use reference books frequently and 11.30% users use reference books sometimes. 10.11% users use reference books rarely and 7.73% users never use reference books. Periodicals are used most frequently by 32.14% users and 19.64% users use frequently periodicals. About 13.69% users use most frequently general magazines, 17.85% users frequently use

general magazines and 25% users sometimes use general magazines.

The use of thesis is also popular. About 22.02% users use thesis most frequently, 22.61% users use thesis frequently and 11.30% users sometimes use thesis. 5.95% users use thesis rarely and 38.09% users never use thesis. The usage of CDROMs is also found. 13.09% users most frequently use CD-ROM, 14.28% users frequently use CD-ROM. 13.09% users use online service most frequently, 14.88% users frequently use online service and 14.28% users use online sometimes. According to the above table 15.47% users use e-journals most frequently, 14.88% users

Table 5: Various categories of reading material available in the library and the frequency of their use: M.J.P. University LibraryResponses

S. No.	Categories	MF	Percentage	F	Percentage	S	Percentage	R	Percentage	N	Percentage
1	General Books	84	47.72%	41	23.29%	15	8.52%	08	4.54%	28	15.90%
2	Reference books	58	32.95%	38	21.59%	12	6.81%	32	18.18%	36	20.45%
3	Periodicals	79	44.88%	41	23.29	43	24.43%	04	2.27%	09	5.11%

4	General Magazine	37	21.02%	17	9.65%	48	27.27%	38	21.59%	36	20.45%
5	Thesis	25	14.20%	39	22.15%	45	25.56%	05	2.84%	62	35.22%
6	CD ROM database	–	–	–	–	–	–	04	2.27%	172	97.72%
7	Online database	15	8.52%	21	11.93%	18	10.22%	53	30.11%	69	39.20%
8	e-journals	05	2.84%	21	11.93%	43	24.43%	47	26.70%	60	34.09%
9	e-reference sources	02	1.13%	15	8.52%	12	6.81%	26	14.77%	121	68.75%

(MF= Most Frequently, F= Frequently, S= Sometimes, R= Rarely, N= Never)

use frequently e-journals and 16.66% users use sometimes e-journals. 25.59% users rarely use e-journals and 27.38% users never use e-journals. In the above table of C.C.S University Library, only 10.11% users use e-reference most frequently.

In the above table of M.J.P. University Library 47.72% users most frequently use general books and 23.29% users use frequently general books. It is seen that 32.95% users use reference books most frequently, 21.59% users use reference books frequently and 6.81% users use reference books sometimes. As above table of M.J.P. University Library shows periodicals are used most frequently by 44.88% users and 23.29% users use frequently periodicals. 24.43% users use periodicals sometimes, 2.27% users use rarely periodicals and 5.11% users never use periodicals.

It is found that 21.02% users use most frequently general magazines, 9.65% users frequently use general magazines and 27.27% users sometimes use general magazines. In M.J.P. University Library 14.20% users use thesis most frequently, 22.15% users use thesis frequently and 25.56% users sometimes use thesis. 2.84% users use thesis rarely and 35.22% users never use thesis. According to the above table of M.J.P. University Library 8.52% users use online service most frequently, 11.93% users frequently use online service and 10.22% users use online sometimes. 30.11% users rarely use online service and 39.20% users never use online service. 2.84% users use e-journals most frequently, 11.93% users use frequently e-journals and 24.43% users use sometimes e-journals. 26.70% users rarely use e-journals and 34.09% users never use e-

Table 6: Computerization of library and Information Services

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	CAS	42	25%	34	19.31%
b.	SDI	28	16.66%	14	7.95%
c.	Online Public Access Catalogues	62	36.90%	38	21.59%
d.	Serial Control	06	3.57%	08	4.54%
e.	List of new arrivals	30	17.85%	82	46.59%

journals. Only 1.13% users use e-reference most frequently, 8.52% users use e-reference frequently and 6.81% users sometimes use e-reference. 14.77% users use e-reference rarely and 68.75% users never use e-reference.

In the above table 25% users gave their response in the favor of CAS and 16.66% users get SDI facility. 36.90% users use Online Public Access Catalogues, 3.57% users take the benefit of Serial Control facility and 17.85% users can see the List of new arrivals in

Table 7: Awareness of Services

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	Lending	54	27.55%	54	30.68%
b.	Reference	52	26.53%	54	30.68%
c.	Online search	56	28.57%	53	30. 11%
d.	CD Rom search	20	10.20%	00	00%
e.	Any other (please specify)	14	7.14%	15	8.52%

C.C.S University Library. In M.J.P. University Library 19.31% users gave their response in the favor of CAS and 7.95% users get SDI facility. 21.59% users use Online Public Access Catalogues, 4.54% users take

the benefit of Serial Control facility and 46.59% users can see the List of new arrivals.

In C.C.S University Library 27.55% users are aware of lending service and 26.53% users are aware of

Table 8: Reservation facility

| | | C.C.S University Library | | M.J.P. University Library | |
		Response	Percentage	Response	Percentage
a.	Yes	102	60.71%	18	10.22%
b.	No	66	39.28%	158	89.77%

Table 9: Awareness of services provided by library C.C.S University Library, M.J.P. University Library

| | | C. C. S. University Library | | M.J.P. University Library | |
		Response	Percentage	Response	Percentage
a.	Online reference sources	104	61.90%	146	82.95%
b.	CD ROM based reference sources	64	38.09%	30	17.04%

Reference service. 28.57% users are aware of online search and only 10.20% users are aware of CD Rom search. 30.68% users are aware of lending service and 30.68% users are aware of Reference service. 30.11% users are aware of online search and no one user is aware of CD Rom search. 8.52%users are aware of some other services as current awareness and photo coping services provided by M.J.P. University Library.

In the above table 60.71% users take the advantage of reservation facility in C.C.S University Library and in M.J.P. University Library only 10.22% users take the advantage of reservation facility.

Table 10: Online search facility

| | | C.C.S University Library | | M.J.P. University Library | |
		Response	Percentage	Response	Percentage
a.	Yes	106	63.09%	136	77.27%
b.	No	62	36.90%	40	22.72%
	Access to online databases				
a.	Yourself	60	56.60%	104	76.47%
b.	Through Staff	20	18.86%	02	1.47%
c.	Through Friend	26	24.52%	30	22.05%

In C.C.S University Library 61.90% users are aware of online reference sources and 38.09%users are aware of CD ROM based reference sources provided by library. In the above table, 82.95% users are aware of online reference sources and 17.04% users are aware of CD ROM based reference sources.

In the above table, in C.C.S University Library, 63.09% users use online search facility. 56.60% users

Table 11: User education in context with IT application to library services

| | | C.C.S University Library | | M.J.P. University Library | |
		Response	Percentage	Response	Percentage
a.	Yes	106	63.09%	02	1.13%
b.	No	62	36.90%	174	98.86%

Table 12: Library help

| | | C.C.S University Library | | M.J.P. University Library | |
		Response	Percentage	Response	Percentage
a.	Use e -reference sources	30	17.85%	42	23.86%
b.	Use of the bibliographical e-sources	20	11.90%	42	23.86%
c.	Search for specific information	58	34.52%	54	30.68%
d.	Databases	34	20.23%	24	13.63%
e.	E-journals	26	15.47%	14	7.95%

access to online databases by themselves and 18.86% reach to online databases through staff. 24.52% users reach to online databases through friends. In M.J.P. University Library, 77.27%users use online search facility. In the above table 76.47% reach to online databases by themselves, 1.47% reach through staff and 22.05% access to online databases through friends.

In the above table, 63.09% users get user education in context with IT application to library services of C.C.S University Library. In M.J.P. University Library

Table 13: The Important source types

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	Electronic reference sources	90	53 .57%	92	52.27%
b.	Print reference sources	78	46.42%	84	47.72%

only 1.13% users show that they get user education in context with IT application to library services.

In C.C.S University Library as shown in the above table 17.85% users use e-reference sources, 11.90% users use the bibliographical e-sources and 34.52% users search for specific information. Databases are used by 20.23% and 15.47% users use e-journals. The above table shows that 23.86% users use e-reference sources in M.J.P. University Library. 23.86% users use the bibliographical e-sources and 30.68% users search for specific information. Use of databases is 13.63% in M.J.P. University Library and 7.95% users use e-journals.

Table 14: Proper arrangement of Library resources (books, journals, etc.)

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	Yes	115	68.45%	158	89.77%
b.	No	53	31.54%	18	10.22%

Table 15: Level of satisfaction for reference Services

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	Fully satisfied	82	48.80%	96	54.54%
b.	Partially satisfied	54	32.14%	52	29.54%
c.	Not satisfied	32	19.04%	28	15.90%

In the above table, according to the data, 53.57% users accept electronic reference sources are important and 46.42% users give importance to print reference sources in C.C.S University Library. In M.J.P. University Library 52.27% users give importance to electronic reference sources and 47.72% users give importance to print reference sources.

As reflected in the concerned table, 68.45% users find the proper arrangement of Library resources (books, journals, etc.) and 31.54% users are not agree with this in C.C.S University Library. In the above table of M.J.P. University Library 89.77% users find the proper arrangement of Library resources (books, journals, etc.) and 10.22% users are not satisfy with the arrangement of Library resources (books, journals, etc.).

According to the above table, 48.80% users are fully satisfied for reference services provided by the library

Table 16: User guidance/orientation

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	Yes	114	67.85%	96	54.54%
b.	No	54	32.14%	80	45.45%

Table 17: News Paper Clippings

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	Yes	136	80.95%	92	52.27%
b.	No	32	19.04%	84	47.72%

and 32.14% users are partially satisfied. 19.04% users are not satisfied with the providing reference services in C.C.S University Library. In the above table of M.J.P. University Library 54.54% users are fully satisfied. 29.54% users are partially satisfied and 15.90% users are not satisfied for reference services provided by library.

In C.C.S University Library, 67.85% users said yes for user guidance/orientation and 32.14% users said no for this. 54.54% users said yes and 45.45% users said no for user guidance/orientation in M.J.P. University Library.

Table 18: Frequency of using electronic reference services

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Per centage
a.	Daily	60	35.71%	75	42.61%
b.	Monthly	22	13.09%	06	3.40%
c.	Weekly	36	21.42%	59	33.52%
d.	Several times in a year	14	8.33%	16	9.09%
e.	Occasionally	36	21.42%	20	11.36%

According to the data, in C.C.S University Library 80.95% users take advantage of News Paper Clippings and 19.04% users said no for this facility. In M.J.P. University Library 52.27% users answered in yes and 47.72% users answered no for News Paper Clippings facility provided by the library.

In the above table 35.71% users daily use electronic reference services, 13.09% users use monthly and 21.42% users use weekly. In C.C.S University Library 8.33% users use electronic reference services several times in a year and 21.42% users occasionally use this service. According to the above table 42.61% users

Table 19: Mostly used internet services

	C.C.S University Library		M.J.P. University Library	
	Response	Percentage	Response	Percentage
E-mail	60	35.71%	52	29.54%
FAQ	02	1.19%	00	00%
Search engine	72	42.85%	52	29.54%
Bulletin Board service	10	5.95%	02	1.13%
Ecommerce	06	3.57%	04	2.27%
Chatting	18	10.71%	66	37.5%

use daily electronic reference services in M.J.P. University Library. 3.40% users use this service monthly and 33.52% users use weekly. 9.09% users use electronic reference services several times in a year and 11.36% users use occasionally.

In the above table 35.71% users use E-mail service and only 1.19% users use FAQ service in C.C.S University Library. 42.85% users use search engine and 5.95% users use Bulletin Board service. 3.57% users use Ecommerce and 10.71% users use Chatting

Table 20: Availability of internet computers

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	Excellent	48	28.57%	27	15.34%
b.	Good	56	33.33%	30	17.04%
c.	Just OK	38	22.61%	55	31.25%
d.	Poor	16	9.52%	49	27.84%
e.	Don't use	10	5.95%	15	8.52%

Table 21: Referral Services (guiding to other library/inf. centers)

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	Yes	111	66.07%	108	61.36%
b.	No	57	33.92%	68	38.63%

Table 22: Technology improvement wanted for better management and reference services

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	More computers to access the collection	76	45.23%	42	23.86%
b.	More Internet access	76	45.23%	106	60.22%
c.	More CD ROM workstations	16	9.52%	28	15.90%

facility in C.C.S University Library. According to the above table 29.54% users use E-mail service in M.J.P. University Library. 29.54% users use search engine and 1.13% users use Bulletin Board service. 2.27% users use E-commerce and 37.5% users use Chatting service.

The table shows 28.57% users said excellent for the availability of internet computers in the library. And 33.33% users accept it as Good availability of internet computers. The data reflect, in M.J.P. University Library 15.34% users said excellent for the

availability of internet computers in the library. And 17.04% users accept it as Good availability of internet computers.

According to the above table 66.07% users of C.C.S University Library get Referral Services and 33.92% users are not agreed with getting the Referral Services.

Table 23: Frequency of using/visiting to the electronic reference sources/website

| | | C.C.S University Library | | M.J.P. University Library | |
		Response	Percentage	Response	Percentage
a.	Daily	54	32.14%	70	39.77%
b.	Several times a week	66	39.28%	76	43.18%
c.	Several times a month	34	20.23%	12	6.81%
d.	About once a month	14	8.33%	18	10.22%

In the above table of M.J.P. University Library 61.36% users get Referral Services.

According to the data, in C.C.S University Library 45.23% users want more computers to access the collection, 45.23% users want more Internet access

and 9.52% users want more CD-ROM workstations in the library. 23.86% users want more computers to access the collection, 60.22% users want more Internet access and 15.90% users want more CD-ROM workstations in M.J.P. University Library.

Table 24: Library Catalogue/OPAC helpful in accessing

| | | C.C.S University Library | | M.J.P. University Library | |
		Response	Percentage	Response	Percentage
a.	Print reference sources				
	i) Yes	84	50%	120	68.18%
b.	Electronic reference sources				
	i) Yes	84	50%	56	31.81%

In the above table, 32.14% users daily visit to the electronic reference sources/website and 39.28% users visit several times a week. In C.C.S University Library 20.23% users visit several times a month and only 8.33% users visit to the electronic reference

sources/website about once a month. In M.J.P. University Library 39.77% users visit daily and 43.18% users visit several times a week to the electronic reference sources/website. 6.81% users visit several times a month to the electronic reference

Table 25: Library manages to provide reference sources

| | | C.C.S University Library | | M.J.P. University Library | |
		Response	Percentage	Response	Percentage
a.	Updated	140	83.33%	98	55.68%
b.	Outdated	28	16.66%	78	44.31%

sources/website and 10.22% users visit about once a month.

The data reflect that 50% users accept that Library Catalogue/OPAC helpful in accessing to Print reference sources and 50% users accept that Library

Catalogue/OPAC helpful in accessing to Electronic reference sources in C.C.S University Library. In M.J.P. University Library 68.18% users accept that Library Catalogue/OPAC helpful in accessing to Print reference sources and 31.81% users accept that

Table 26: Facilities for inter-library networks

| | | C.C.S University Library | | M.J.P. University Library | |
		Response	Percentage	Response	Percentage
a.	Yes	130	77.38%	58	32.95%
b.	No	38	22.61%	118	67.04%
Available facilities are					
a.	Union catalogue of books	16	12.30%	06	10.34%
b.	Union catalogue of periodicals	14	10.76%		
c.	Union list of current periodicals	28	21.53%	04	6.89%
d.	Access to national databases	08	6.15%	05	8.62%
e.	Access to internationa 1 atabases	16	12.30%	02	3.44%
f.	E-mail	28	21.53%	36	62.06%
g.	Fax	08	6.15%	05	8.62%
h.	Document delivery	12	9.23%		
i.	Any other				

Table 27: Satisfaction with the staff

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	Quality of work	110	65.47%	102	57.95%
b.	Charges	14	8.33%	08	4.54%
c.	Time taken	44	26.19%	66	37.5%

Library Catalogue/OPAC helpful in accessing to Electronic reference sources.

The above table shows that 83.33% users of C.C.S University Library accept that library manages to provide reference sources updated and 16.66% users find that library manage to provide reference sources outdated. According to the above table 55.68% users find library manage to provide reference sources updated and 44.31% users of M.J.P. University Library find that library manage to provide reference sources outdated.

The data reflect that various facilities are available in these libraries and users are availing the services too. This availability and usage show that the libraries are moving towards network based services as well as users are acquainted with these facilities.

Table 28: Attitude of the staff

		C.C.S University Library		M.J.P. University Library	
		Response	Percentage	Response	Percentage
a.	Most helpful	82	48.80%	60	34.09%
b.	Helpful	60	35.71%	86	48.86%
c.	Undecided	14	8.33%	22	12.5%
d.	Least helpful	12	7.14%	08	4.54%

In the above table 65.47%users are satisfied with the quality of work of the staff, 8.33% users are satisfied with the charges and 26.19% users are satisfied with the time taken in C.C.S University Library. In M.J.P. University Library 57.95% users are satisfied with the quality of work of the staff, 4.54% users are satisfied with the charges and 37.5% users are satisfied with the time taken as shows the table.

In the above table 48.80% users find the staff most helpful, 35.71% users find the staff helpful and 8.33% users are undecided about the attitude of the staff. 7.14% said that staff is least helpful in C.C.S University Library. The data shows that in M.J.P. University Library, 34.09% users find the staff most helpful, 48.86% users find the staff helpful and 12.5% users are undecided about the attitude of the staff. And only 4.54% users said that library staff is least helpful.

Conclusion

Whereas the traditional library management techniques are basic parameters in the day today scenario, the application of various technology based applications cannot be avoided. The libraries have welcomed and users have embraced the technologies in the library resources and services. It is evident that the provisions for inter-library networks, Union catalogue of books, Union list of current periodicals and Access to national databases are facilitating the users. Access to international databases and document delivery facility has been very supportive in order to serve the users. The findings of this study may provide useful insight for the management to take necessary steps to strengthen the existing facilities and services to maximize the use.

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Resource Sharing and Networking: Issues and Challenges

V. Sheela*, N. Mamatha**

Abstract

The idea of resource sharing is a requirement based, founded on the principle of give and take. At the time of information era, shared the proliferation of publications and the phenomenon has transformed the collection development policies had to be introduced in order to select the most important and core documents, and share the remaining with other librarians or networks. It is because of rising costs of publications and their phenomenal growth in each subjects. To make resource sharing more fruitful among libraries at different geographical locations and to cover all types of document's for that various library networks are came in to existence. In general networking can be categorized as library network, computer network, and communication network. Among the above three networking library network is very pioneer in nature. The concept of library network evolved in the form of resource sharing over the years. The world resource sharing has been in need with different terminology called; Inter library loan, Library cooperation, Library network, Library Consortia.

Resource sharing is a kind of contract among the participating libraries wherein each participant is ready to share the resources among themselves. According to Allen Kent , "Resource sharing is a mode of operation whereby functions are shared in common by a number of libraries".

Here we are going to give more emphasis on impact of computer network and library network in resource sharing. One of the great library networking in the resource sharing at the university level is INFLIBNET. In this paper a brief description of INFLIBNET on resource sharing and networking in the university libraries.

Keywords: Microcomputers; Networking; Information Technology.

Introduction

Libraries are facing increasing demands for services. While struggling with Information explosion, intense expectations of users, development of great microcomputers, decrease in library budget, secluded location of libraries and quick changes in telecommunication systems are forcing the modern libraries to establish and participate in information networking and resource sharing. It is neither economically nor physically possible for any library to acquire all the required documents particularly expensive journals needed for its users.

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Collaboration among institutions for sharing their library resources has been adopted. In recent times the form of collaboration has been transformed with the mix of new information technology.

Resource sharing is implied as contract among member libraries wherein each member is willing to share its resource to other members and in turn is fortunate to share the resources of its associates as and when the need arises. Currently, because of the use of Information Technology, it became possible to create co-operative practical resource sharing library-network which is very significant condition at this point in time where the economic concern, information sudden increase and focused users needs are forcing the libraries to participate in to the co-operative tricks.

Resource sharing is nothing but sharing of resources by certain participating libraries among themselves on the basis of the principle of cooperation. It denotes a mode of a number of libraries.

The term resource applies to anything, person or action to which one turns for aid in time of need. The word 'Sharing' connotes apportioning, allotting or contributing something that is owned, to benefit others. Resource sharing in its most positive aspects entails reciprocity, implying a partnership in which each member has something useful to contribute to others and which, each is willing and able to make available when needed.

According to Miller, "It's a cooperative system established by libraries and information centers which are brought together by common subject, geographic proximity to share informational resources, human resources and all other elements essential for providing effective information service".

According to Allen Kent, 'Resource sharing is a mode of operations whereby functions are shared in common by a number of Libraries'.

Need for Resource Sharing

There is a tremendous source are available around the world, so it is not possible for the library to acquire or store all credentials that its users demand. Today no library can meet the expense of to acquire even half of all published material, both in expenditure and investment in space and human resources, time required to process and provides access to a rapidly increasing amount of information.

An interdisciplinary literary search necessitates dependence on other libraries. The restrictions of finances and space besides the lack of proper distribution channels for publications and lack of proper book selection tools handicap the procurement of published materials in the libraries. It is also noticed that most libraries have been duplicating the efforts and materials, which has led to adequate utilization of the overall resource materials and finances. There has been a great increase in the number of users as also their demands. The information being sought has become extremely diverse in the circumstances; the libraries are left grouping for ways of providing a wider range of services and collections.

Forms of Resource Sharing

Resource sharing can be found in the form of Inter Library Loan (ILL), Cooperative Acquisition, Cooperative storage, Cooperative Processing , Union catalogue, Exchange of personnel and training facilities, Technical processing and web based sharing etc.,

Inter Library Loan: It is a procedure by which, one library lends its resources to any user through another library. At present ILL is made easier with the help of technologies like computer technologies, facsimile equipment, networks, photo copying etc.

Cooperative Acquisition: Libraries spend their valuable time, money and efforts on acquisition of materials. The procurement procedures are similar among all the libraries. When a cooperative acquisition is applied, libraries can be avoided.

Cooperative Storage: Would result in economy of space and money, avoids duplication.

Cooperative processing: In the cooperative processing of materials which includes classification and cataloguing, the manpower and the financial constraints can be shared.

Union catalogues: It is a collective catalogue of materials available in all the participating in a resource sharing programme. It is a useful location tool in an ILL programme. It serves as a major bibliography.

Cooperative Delivery of services: In this the user directly goes to the library actually having the volume required by him and borrows the material.

Exchange of Personnel and training facilities: Even the services of an expert from another library can be borrowed and training of in-house staff can be organized.

Technical process: with the advent of the computers and copying machine now it is feasible to have a centralized cataloguing and processing work.

Web based Resource sharing: Sharing of resources hosted in the net, which in turn reduces the communication gap, fastens the delivery services.

Advantages of Resource Sharing

- ☛ Improve services offered to the Users
- ☛ Enhance the library collections
- ☛ Overcome budgetary problems
- ☛ Shared catalogue service
- ☛ Increased user satisfaction
- ☛ Shared circulation and inter library loan services
- ☛ Optimum utilization of existing records.
- ☛ Save efforts and time by preventing duplication
- ☛ Enhance the image of the Library

Barriers of Resource Sharing

- ☛ Lack of technological sophistication
- ☛ Physical and economic barriers

- ✏ Politically acceptable efforts
- ✏ Sociological/ cultural / educational impact
- ✏ Information policies and plans
- ✏ Legal consideration
- ✏ Financial Implication's can hamper resource sharing
- ✏ Lack of awareness among users about the usefulness of resource sharing
- ✏ Language barriers.

Library Consortium

Library consortia are a model that facilitates the libraries to get the advantage of wider access to electronic resources at reasonable price and at the best terms of license. It is a group of two or more information agencies, which have properly agreed to organize, oblige or merge certain functions, to attain shared objectives. In the beginning consortia focused on Inter Library Loan and document delivery service based on union catalogues. Today emphasis is on buying scholarly publications patterns, research and development to improve content delivery and expanding access to specialized resources. Subscriptions of some journals and databases doesn't justify as it may not be utilized by users to the maximum, at this time its better to opt for the consortiums. Several library consortia around the country have been formed viz., FORSA, CSIR, HELINET, INDEST, UGC-INFONET e journals consortia etc.

Library Networks

Library network is the network of participating libraries, where all the members will be benefited from all the member libraries. It's an agreement among the libraries to provide the information and the services to the users of the participating libraries, which may be situated in different geographical area, but serves one another on the requirement of the users. In 1986 CALIBNET in Calcutta , 1988 DELNET in Delhi , 1992 PUNENET in Pune, 1993 ADINET in Ahmedabad, 1994 BONET in Mumbai, 1993 MALIBNET in Chennai, 1997 BALNET in Bangalore.

Susan Martin defines "The library network as a group of individuals / organizations that are interconnected, to achieve better sharing of resources. Resource consists of bibliographic information and of collections- better service to users".

Inflibnet

INFLIBNET is an autonomous Inter – University centre of the UGC located at Gujarat University campus, Ahmedabad. It is a national network of libraries and information centers in universities, institutions of higher education /learning and Research and development Institutions in India, to support intellectual communication among academicians and researchers in India.

Objectives of Inflibnet

The key objective of INFLIBNET is to encourage resource sharing among libraries. This is done by developing a network of libraries and information centers in universities, colleges, and research and development institutions. The services can be offered by storing and disseminating information, offering computerized information services to users, and by coordinating efforts for suitable collection growth and sinking unnecessary repetition wherever possible. This in turn improves the Scholarship, learning, research and academic pursuits. Further a database of projects, institutions and specialists is created and online information will be provided. Standards and uniform guidelines in techniques, procedures, hardware, software and services will be evolved and it will be promoted for adoption.

Activities of Inflibnet

- ❖ Automation of university libraries: INFLIBNET through UGC has provided grants to the universities identified, provided grants to purchase computers, modem, printer, telephone, software's etc. It has created an IT conscious environment in the university library.

- ❖ SOUL software: This software has been developed to facilitate the automation functions of participating libraries. INFLIBNET is maintaining the service centers to support the services as well as to promote the SOUL software.

- ❖ Human resource development and consultancy: Special Training and workshop on information technology, network management, website designing, E resource management, etc will be conducted frequently to manpower working in the universities and colleges.

- ❖ Development of union databases: Databases will be developed and updated on regular basis viz., Books database, Thesis database, Serials holdings database, Current serials database, Experts database, Research projects.

- ❖ Bibliographic standards: The Document "INFLIBNET standards and guidelines for data capturing" is made available to all the libraries while developing the databases. Anglo American

cataloguing Rules 2 (AACR 2) and Library of congress subject headings are recommended to use.

Inflibnet Services

❖ Catalogue based services

❖ Database services

❖ Document supply services

❖ Collection development

❖ Communication based services

Inflibnet Major Projects

University Grants commission has initiated an ambitious project called UGC-INFONET for the University campuses with latest technology. INFLIBNET is managing and taking care of the entire project.

UGC-INFONET e-journals consortium is a programme for higher education, setting up a nation wide communication network. Under this programme the Information and communication Technology (ICT) and internet is used to transform the e-resources in multi dimensional form. Through this consortium, education material and journals will reach to the farthest areas users. Up to date information will be provided to the researchers and scholars. UGC-INFONET will establish a channel for globalization of education and facilitate the universities in marketing their services and developments also.

This programme will offer the best current and archival periodical literature, from all over the world, to the university community. UGC-INFONET forms a medium for collaboration among teachers and students, not only in the country but also all over the world. The e-journal consortium aims at covering all fields of learning of relevance to various universities including Arts and humanities, Social sciences, Physical and Chemical Sciences, Life Sciences, Computer Science, Mathematics, Statistics.

Ugc N-List Programme

The scheme "National Library and information services Infrastructure for scholarly Content (N-LIST)", being equally executed by the UGC-INFONET, INFLIBNET Centre and the INDEST-AICTE Consortium. The UGC N-LIST project consists of group of colleges that are recognized by UGC and it is funded by Ministry of Human Resources Development (MHRD), provides access to e-resources

to students, researchers and faculty from colleges through the server installed at the INFLIBNET centre. Currently approved users access e-resources and if needed can download articles required directly from the publisher's website once they register for this program.

The college education system is text book oriented and it is one of the main reasons for most of the college libraries are not using the N-LIST service. The library and information professionals must take responsibility to popularize electronic resources and importance of the N-LIST service. The college libraries in India need to educate their users in accessing the electronic resources provided by N-LIST. In India as majority of the college libraries are facing financial crunch, they can register with N-LIST service for accessing quality electronic resources to get over the resource hunger and financial crunch. This N-LIST helps the students and faculty in acquiring e-resources to get the desired and relevant information. Since most of the students and faculty acquired the skills necessary to exploit the electronic resources via trail and error or through guidance from others, raising the question of the effectiveness of these skills is more needed through the service like N-LIST will help in improve their academics and research capabilities. As colleges impart textbook oriented education, the N-LIST can be integrated with e-textbooks.

College performs an important function in the educational process. College Libraries should actively participate in the consortium. So that the users will be provided with quality service updating the latest available information world wide. Consortium concept is very useful in the present knowledge based society. In the present context people are not strain to get information in any field. Beneficiary colleges, registered for the N-LIST programme, can access more than 3,717 electronic journals, 74,138 electronic books.

Conclusion

Nowadays users demand for the right information at the right time, in this era of rapid growth of information. The information professionals should adopt all the technologies and tools available to provide better service. The inter library loan undergoes improvements in this era of information and communication technology world. The information professionals should have all the skills to meet the requirements of the talented research scholars, faculty, graduates and undergraduate

students. If the professionals plan properly resource sharing will play a major role in transforming the libraries in to a world class information centers.

The concept of resource sharing is a need based, founded on sound principle of give and take. At the time of information era ushered the proliferation of publications and the phenomenon has transformed the collection development policies had to be introduced in order to select the most important and core documents and share the remaining with other librarians or networks because of rising costs of publications and their phenomenal growth in each subjects. To make resource sharing more fruitful among libraries at different geographical locations and to cover all types of document's for that various library networks are came in to existence. In general networking can be categorized as library network, computer network, and communication network. Among the above three networking library network is very pioneer in nature. The concept of library network evolved in the form of resource sharing over the years. The world resource sharing has been in need with different terminology called:

- ❖ Inter library loan
- ❖ Library cooperation
- ❖ Library network

- ❖ Consortia.

Resource sharing is a sort of implied agreement among the participating libraries wherein each participant is willing to share the resources among themselves. According to Allen kent, "Resource sharing is a mode of operation whereby functions are shared in common by a number of libraries".

Here we are going to give more emphasis on impact of computer network and library network in resource sharing. One of the great library networking in the resource sharing at the university level I INFLIBNET. In this paper a brief description of INFLIBNET on resource sharing and networking in the university libraries.

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Copyright in India: What Library Professionals and Users' Needs to Know

Unnikrishnan G.*, Chandrashekara M.**

Abstract

Copyright is a type of Intellectual property right protection that helps to protect the intellect of human creation. This series of articles provide a rather advanced clarification on the need for greater awareness around technical and practical aspects of copyright in India. In the digital environment, copyright becomes an issue of fundamental significance in the library. The advance of digital technology results in Copyright Act being more easily violated. This becomes a consideration at every point in the process of selecting, acquiring, using, delivering, sharing, storing, and preserving information. The Copyright Act is intended to sort out a balance between the intellectual property interests of authors, publishers, and copyright owners. Librarians have a central role in this arena and cannot be passive bystanders. Current technology does not strike a good balance between protecting of intellectual property and giving access to those who need the information. At one extreme is the open source on the internet, where everything is free, even though libraries are cautious because of the danger of unauthorised access.

Keywords: Copyright; Intellectual Property Rights; IPR.

What is copyright

Copyright is a form of intellectual property protection granted under Copyright Act to the creators of original works of authorship. It is a right in creative works such as literary works, artistic works, music, computer programs, sound recordings and films. The rights are granted exclusively to the copyright owner to reproduce the material, and for some material, the right to perform or show the work to the public.

Subject to the provisions of the Act, copyright shall subsist throughout India in the following classes of works. They are;

- *Literary work*: Computer programmes, books, articles, poems, tables and databases.

  Computer programmes and software are covered under literary works and are protected in India under copyrights

- *Artistic work:* Paintings, a sculpture, a drawing (including a diagram, map, chart or plan), an engraving or a photograph, whether or not any such work possesses artistic quality; a work of architecture; and any other work of artistic craftsmanship

- *Musical work:* means a work consisting of music and includes any graphical notation of such work but does not include any words or any action intended to be sung, spoken or performed with the music. A musical work need not be written down to enjoy Copyright protection. Example: Written work of lyricist, composer and rights of the singer

- *Sound recording:* means a recording from which sounds may be produced regardless of the medium on which such recording is made or the method by which the sounds are produced. Example: Sound recordings fixed in a CD-ROM, DVD-ROM, USB drive

- *Cinematograph film:* means any work of visual recording on any medium, produced through a process from which a moving image may be produced by any means and includes a sound recording accompanying such visual recording and "cinematograph" shall be construed as including any work produced by any process analogous to cinematography including video films. e.g., Movies [1]

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Copyright owners can prevent others from reproducing or communicating their work without their permission or may sell these rights to someone else. Copyright does not protect ideas, concepts, styles or techniques.

Copyright is a protection that covers published and unpublished literary, scientific and artistic works, whatever the form of expression, provided such work is fixed in a tangible or material form. That is if one can see it, hear it and/or touch it that may be protected. if it is an essay, play, song, dance move, photograph, programming code, computer graphic that can be set on paper, recorded on tape or save to a hard drive, it may be protected [1].

Copyright is an exclusive right given by law for a certain terms of years to an author, composer etc to print, publish and sell copies of his original work [3].

Copyright holders have the privilege to deal with their creation and works of authorship in whatever way they find appropriate. It offers a bundle of rights that the owner may exercise in relation to a particular work. These rights are:

- ✓ Right to reproduce and replicate,
- ✓ Right to communicate the work to the public,
- ✓ Right to publish the work,
- ✓ Copy, multiply and replicate,
- ✓ Sell the work,
- ✓ Right to perform the work in public,
- ✓ Make an adaptation of the work.

The Copyright owner can assign his/her current work or proposed work to a third-party in return of onetime payment or royalty. For e.g. an author is writing a book and once fixed assigns the rights to sell the printed copies of this book to a publisher. However, for the proposed work, assignment will come into force only when the book is completed and fixed in a tangible format. The Copyright owner can completely or partially assign his/her right but this assignment is only valid if it is in written format signed by the Copyright owner or his/her legal representative. Term of assignment and extent of territory must also be specified as per the Copyright Act, otherwise by default the term of protection will be 5 years and will extend for whole of India.

The creator/author can license his or her work to one or more companies with certain fixed set of terms and condition in exchange for payment.

Independent of the author's copyright and even after the assignment either wholly or partially of the said copyright, the author of a work shall have the right:

- ✓ To claim the authorship of the work; and
- ✓ To restrain or claim damages in respect of any distortion, mutilation, modification or other act in relation to the said work, if such distortion, mutilation, modification would be prejudicial to his honour or reputation [3].

The Copyright Act, 1957

In ancient days creative persons like artists, musicians and writers made, composed or wrote their works for fame and recognition rather than to earn a living, thus, the question of copyright never arose. The importance of copyright was recognized only after the invention of printing press which enabled the reproduction of books in a large quantity practicable. In India the first legislation of its kind, the Indian Copyright Act, was passed in 1914 which was mainly based on the UK Copyright Act, 1911.

During the last four decades modern and advanced means of communication like broadcasting, litho-photography, television, Internet etc., have made inroads in the Indian economy with the result that it became essential to fulfill international obligations in the field of copyright. This necessitated that the comprehensive legislation may be introduced to completely revise the copyright law. To this effect a Copyright Bill, 1957 was introduced in the Parliament. The Copyright Bill having been passed by the both the Houses of Parliament received the assent of the President on 4th June, 1957. It came on the Statute Book as THE COPYRIGHT ACT, 1957 (14 of 1957) [4].

The Copyright Act, 1957 as amended in 1983, 1984, 1992, 1994, 1999 and 2012 governs the copyright protection in India. The details are:

1. The Copyright (Amendment) Act, 1983 (23 of 1983) (w.e.f. 9-8-1984);
2. The Copyright (Amendment) Act, 1984 (65 of 1984) (w.e.f. 8-10-1984);
3. The Copyright (Amendment) Act, 1992 (13 of 1992) (w.e.f. 28-12-1991);
4. The Copyright (Amendment) Act, 1994 (38 of 1994) (w.e.f. 10-5-1995);
5. The Copyright (Amendment) Act, 1999 (49 of 1999) (w.e.f. 15-1-2000);
6. The Copyright (Amendment) Act, 2012 (27 of 2012) (w.e.f. 21-6-2012) [2].

Term of Copyright

The total term of protection for literary work is the author's life plus sixty years. For cinematographic

films, records, photographs, posthumous publications, anonymous publication, works of government and international agencies the term is 60 years from the beginning of the calendar years

following the year in which the work was published. For broadcasting, the term is 25 years from the beginning of the calendar years following the year in which the broadcast was made.

Terms of Different Classes of Copyright

Sl. No.	Class of work	Terms of protection	Remarks
1.	Literary (including computer software), dramatic, musical photograph, and artistic	Life time + 60 years. The 60 year period is counted from the year following the death of the author	The period of counting 60 year for this process starts from next year following the year in which author dies. Example: if Author dies in say 2nd Nov, 1979. So, duration of protection of 60 years period will be from 1st Jan, 1980 to 31st Dec, 2040. Also, in case of joint author, year count for this process will depend upon the author who dies last. Example: Author X and Y are co-author of a work. Author X dies on 4th April 1988 and Y dies on 26th August 1991. So duration of protection of sixty years period will start from 1st Jan, 1992.
2.	Cinematograph films, Sound recordings, Posthumous Publications, Works of Government, Work in Public undertakings and Works of international organizations	60 years period is counted from the date of publication	Date of publication is always the first publication of the work.

Period starts from the beginning of next year, following the year in which film was first published. |
| 3. | Anonymous and pseudonymous publications | In case of a literary, dramatic, musical or artistic work, which is published anonymously or pseudonymously, copyright subsist until 60 years from the beginning of the calendar year next following year in which the w or k is first published. Provided that where the identity of the author is disclosed before the expiry of the said period, copyright shall subsist until 60 years from the beginning of the calendar year next following the year in which author dies [5]. | |

Copyright Registration in India

The Indian Copyright Act provides measures for maintaining a register for recording the names and titles of the works that are registered along with the names and addresses of authors, publishers and owners of the copyrights and such other particulars as may be prescribed. The author or publisher or the owner, interested in the copyright, in any work, may make an application in the prescribed form accompanied by the prescribed fees to the Registrar of Copyrights for entering particulars of the work in the Register of Copyrights.

The Copyright is a statutory right. However, to claim a right under this Act, registration of the work is not necessary. The Act provides the legal provisions with regard to the register of the copyrights in which

the names or titles of the works along with the names and addresses of the authors, publishers and owners of copyrights are mentioned. The Act does not stipulate that registration is mandatory to claim protection under the Copyright Act. The registration only raises a presumption that the person shown is the actual author of the work. The presumption is not conclusive and where contract evidence is forwarded, the registration may be cancelled.

In case the author or the owner decides not to register, the work should be properly dated and signed. This may be useful in case of engineering drawings. In case of registered or unregistered work, the symbol "c" with circle "©" is used along with the name of author, year of first publication on the work, to signify that work is under Copyright

protection for a specific duration. If this sign is associated with any work, it means the work is Copyrighted.

The copyright office in Indian is located at New Delhi.Copyright registration process consists of the following steps:

- ✓ Application to be made in form XIV.
- ✓ One application to be made for each category of work.
- ✓ Every application should be signed by the author or owner of right.
- ✓ Application for registration of a computer programme should be accompanied by source code/object code.
- ✓ Application should be accompanied with the official fees.
- ✓ The person applying for registration shall give notice of his application to every person who claims or has any interest in the subject matter of the copyright.
- ✓ If no objection is received within 30 days by the Registrar, the particulars given in the application will be entered in the Register of Copyrights.

There are exclusive license and non-exclusive license in copyright. Exclusive license means a specific right is granted to a single owner. Licensee (individual or companies) solely has the right to use copy or distribute such work in the specific way as per the license. Example: Exclusive Right to publish a book in English is specifically given to a publisher say X in India for 10 years. However, the Publisher does not have the exclusive right to publish such book in any other language and in any other country for 10 years. Whereas non-exclusive license means specific rights to use copy or distribute more than one license (individual or companies). Example: non–exclusive right to sell a software CD is specifically given to two publishers say for example X and Y in India for 10 years tenure [5].

What is not protected by Copyright?

Many categories of material are not eligible for copyright protection.

1. Works that have not been fixed in a tangible form of expression. (for example, choreographic works that have not been notated or recorded, or improvisational speeches or performances that have not been written or recorded).

2. Titles, names, short phrases, and slogans; familiar symbols or designs; mere variations of typographic ornamentation, lettering, or colouring; mere listings of ingredients or contents.

3. Ideas, procedures, methods, systems, processes, concepts, principles, discoveries, or devices, as distinguished from a description, explanation, or illustration.

4. Works consisting entirely of information that is common property and containing no original authorship (for example – standard calendars, height and weight charts, tape measures and rules, and lists or tables taken from public documents or other common sources) [5].

What is copyleft

Copyleft is like a license or an agreement for a user using the copyleft work, specifically for software. As per the terms of copyleft, any person has right to freely use, distribute, modify software code but at the same time the user must donate the modified version of the software code under similar terms and condition to freely use, distribute and modify the modified version. This kind of software is called copyleft software. The author (developer) cannot stop others from using, modifying and redistributing as per the conditions disclosed in the GPL license. Thus, copyleft ensures:

- ✓ Software available is royalty free,
- ✓ Source codes must be disclosed,
- ✓ Freedom to modify the software,

Anybody redistributing the modified version will provide similar independence to others for freely using, redistributing, and making alteration in that software so that the whole community is benefited (Example: GNU GPL license) [5].

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Gastroenterology International	2	5500	550
Indian Journal of Agriculture Business	2	5000	500
Indian Journal of Anatomy	3	8000	800
Indian Journal of Ancient Medicine and Yoga	4	7500	750
Indian Journal of Anesthesia and Analgesia	2	7000	700
Indian Journal of Anthropology	2	12000	1200
Indian Journal of Biology	2	4000	400
Indian Journal of Cancer Education and Research	2	8500	850
Indian Journal of Communicable Diseases	2	8000	800
Indian Journal of Dental Education	4	4500	450
Indian Journal of Forensic Medicine and Pathology	4	15500	1550
Indian Journal of Forensic Odontology	2	4500	450
Indian Journal of Genetics and Molecular Research	2	6500	650
Indian Journal of Law and Human Behavior	2	5500	550
Indian Journal of Library and Information Science	3	9000	900
Indian Journal of Maternal-Fetal & Neonatal Medicine	2	9000	900
Indian Journal of Medical & Health Sciences	2	6500	650
Indian Journal of Obstetrics and Gynecology	2	7000	700
Indian Journal of Pathology: Research and Practice	2	11500	1150
Indian Journal of Plant and Soil	2	5500	550
Indian Journal of Preventive Medicine	2	6500	650
International Journal of Food, Nutrition & Dietetics	2	5000	500
International Journal of History	2	6500	650
International Journal of Neurology and Neurosurgery	2	10000	1000
International Journal of Political Science	2	5500	550
International Journal of Practical Nursing	3	5000	500
International Physiology	2	7000	700
Journal of Animal Feed Science and Technology	2	4100	410
Journal of Cardiovascular Medicine and Surgery	2	9100	910
Journal of Forensic Chemistry and Toxicology	2	9000	900
Journal of Microbiology and Related Research	2	8000	800
Journal of Orthopaedic Education	2	5000	500
Journal of Pharmaceutical and Medicinal Chemistry	2	16000	1600
Journal of Practical Biochemistry and Biophysics	2	5500	550
Journal of Social Welfare and Management	4	7500	750
New Indian Journal of Surgery	2	7100	710
Ophthalmology and Allied Sciences	2	5500	550
Otolaryngology International	2	5000	500
Pediatric Education and Research	4	7000	700
Physiotherapy and Occupational Therapy Journal	4	8500	850
Urology, Nephrology and Andrology International	2	7000	700

SUPER SPECIALITY JOURNALS

Indian Journal of Emergency Medicine	2	12000	1200
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Indian Journal of Trauma & Emergency Pediatrics	2	9000	900
International Journal of Pediatric Nursing	2	5000	500
Journal of Community and Public Health Nurisng	2	5000	500
Journal of Geriatric Nursing	2	5000	500
Journal of Medical Images and Case Reports	2	5000	500
Journal of Nurse Midwifery and Maternal Health	2	5000	500
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E-Resources: Milestone in the History of Library

Narender Kumar

Abstract

Library is the repository of sources, resources and services for its users. Earlier, library was known as the store house of the dead tree media documents viz. books, manuscripts and manuals and their retrieval system was manual. Retrieval of the collection hailed into catalogues as catalogues were prepared to unveil the collection of the concerned library. Ensuring the effective access to quality study material for the readers in the minimum possible time was a time consuming tedious process and big challenge in front of the library professionals. However, emerging technologies have changed the concept of the library and the accessibility of the material become easier. The library reached at the door step of the end user, in fact reached at their finger tips. Many new concepts viz. Hybrid Library, Digital Library, Virtual Library, Electronic Library and Mobile Library have been emerged and proved milestone in transforming the shape of the traditional library into digital library. E-resources are capable enough to sustain the thrust of information of the modern users. The present study tries to elicit the facts in respect to e-resources which are responsible for change the Library and its services along with the academic pursuit.

Keywords: E-Resources; Milestone; Library; Technology.

Introduction

Library professionals play a fundamental and significant role in the successful organization, administration, utilization and exploring its sources, resources and services for the complete satisfaction of its users. Untrained library professionals cannot offer the ultra modern services whether the library is housed in the luxurious and big building or having extensive manual and digital collection. In the olden days the library collection and retrieval tools were manual. Libraries were opened as per scheduled time which was scheduled by the library authorities and in some sections of the library, the entry was restricted. To retrieve the information from the manual system was a very tedious and studios job and sometime it had been taken 2-3 working days or one week and to cope up with this situation, the library defined two types services viz. long range reference service and short range reference service. In addition, borrowing facility was also for limited period. However, in the age of information and communication technology the library got paradigm shift from manual to online. It won't be an exaggeration to say that emerged technologies unveil the collection and started services 24*7*365 at the desktop of the end user. E-resources resolved the budget problem along with space problem up to a limit as virtual library, digital library and mobile library got privileged due to demand of the users. Easy access, circulation and information retrieval and dissemination have become easier. Global access of information has become possible. Latest and nascent technologies have been proved milestone for library services which are being offered by the library to the modern users. Information and its requirement are increasing day by day. Each and every sector whether business, society, family matter and academic industry are required the right information at the right time to resolve every type matter. Information plays a significant role in taking the right and factual decisions. The advancement of information retrieval and dissemination tools and technologies changed the entire arena of conventional information retrieval system of the library.

Definition of E-resources [1]

This is very hearting to know that the e-resources have become the essential part of modern academic

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community. In the last decade, the e-resources have made considerable progress. Some of the important definitions of the e-resources are as under:

An electronic resource is any information source that the library provides access to in an electronic format. The library has purchased subscriptions to many electronic information resources in order to provide you with access to them free of charge.

E-resources is the short form of electronic information sources and resources. These are the collection of information in electronic or digital format and accessible through LAN, MAN, WAN and CWN etc.

Literature Review

To justify the present study, it is very important to cite the studies which have been conducted earlier in the same field. In this series, some studies have been considered and the brief inferential observations of these studies are as given below.

Hatua [2] in the paper discusses that electronic journals are widely accepted by a large number of libraries. They prefer more and more journals with its print version. This paper is basically concentrating on basic characteristics, benefits and a comparative study of facilities given by some popular aggregators.

Jogelkar and Sen [3] in their article discuss the evaluation aspects of e-journals in library and information science. Mentions the criteria used in the selection of e-journals for the study.

Joshi and Singh [4] states in their study electronic journals in economics subscribed by DULS made available to affiliated colleges through LAN. More

and more journals are now being made available in electronic form by their publishers. College faculty members have been demanding more and more scholarly journals by every passing financial year. With such a small college library budget, consortium based electronic journals subscribed by affiliating university are a great boon.

Kaushik and *Relan [5]* describes in their study the recent advances in computer applications during the past few decades have brought radical changes in the way information is generated, stored, organized, accessed, retrieved and consumed.

Kumar [6] states in his paper what an e-journal is, its advantages like speed, multiple accesses, shelving space, availability, delivery, downloading and publishing costs. Also explains the disadvantages of e-journals. He also explains e-journals and libraries.

Nishtha Anilkumar [7] in her paper describes the ongoing shift towards electronic publishing and access is expected to continue in spite of the fact that print media is still preferred for ease of reading and portability and because of the fact that the authors still consider it authoritative medium and format for the publication of peer-reviewed research.

Types of E-resources

It is curiosity among the academic community to know the types of e-resources as number of electronic, digital and virtual contents are available in the market. Hence, things confuse which shall be considered as types of e-resources. For the clarification of the purpose the categories of the e-resources are as under:
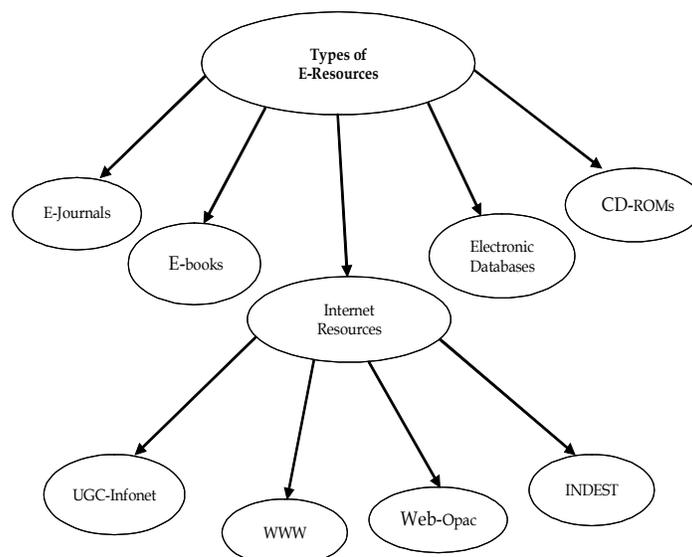
Fig. 1: Types of E-Resources

E-resources through Consortium: A Government Initiative

Government of India has taken initiative to provide the e-resources to users and academic institutions on nominal price or shared basis thereby; the concept of Consortium came into existence viz. INFONET and AICTE-Consortium and work under the aegis of Government of India. The list of the journals being offered under UGC-INFONET and AICTE-Consortium is as under:

E-Resources @ UGC-Infonet [8]

List of Journals including Title, URLs are as under.

E-Resources (Full Text)

American Chemical Society	http://www.pubs.acs.org/
American Institute of Physics	http://scitation.aip.org/publications/myBrowsePub.jsp#AIP
American Physical Society	http://scitation.aip.org/publications/myBrowsePub.jsp#APS
Annual Reviews	http://arjournals.annualreviews.org/
Blackwell Publishing	http://www3.interscience.wiley.com/
Cambridge University Press	http://journals.cambridge.org/
Elsevier Science	http://www.sciencedirect.com/
Emerald	http://www.emeraldinsight.com
Institute of Physics	http://www.iop.org/EJ/
J-STOR	http://www.jstor.org/
Nature	http://www.nature.com/
Oxford Uni versity Press	http://www.oxfordjournals.org
Portland Press	http://www.portlandpress.com/pp/journals/default.htm
Project Euclid	http://projecteuclid.org/
Project Muse	http://muse.jhu.edu/
Royal Society of Chemistry	http://www.rsc.org/Publishing/Journals/
SIAM	http://epubs.siam.org/
Springer Link	http://www.springerlink.com/
Taylor and Francis	http://www.informaworld.com/
SciFinder Scholar	http://www.cas.org/SCIFINDER/SCHOLAR/index.html
MathSciNet	http://www.ams.org/mathscinet/
ISID	http://isid.org.in/
JCCC	http://jccc -ugcinfonet.in or www.jccc -ugcinfonet.in
About Open Access	oaeresources.html
Open Access E -Journals	oaeresources.html#ejournals
Open Access Directories	oaeresources.html#directories
IRs@member Institutions	oaeresources.html#IRs

E-Resources @ INDEST [9]

List of Journals including Title, URLs are as under.

E-Resources (Full-Text)

ABI / Inform Complete	http://search.proquest.com
ACM Digital Library	http://dl.acm.org/
Annual Reviews (Through NME-ICT Project)	http://www.annualreviews.org
ASCE Journals	http://scitation.aip.org/publications/myBrowsePub.jsp
ASME Journals (+ A M R)	http://scitation .aip.org/publications/myBrowsePub.jsp
ASTM Standards & Digital Library	**Standards:** http://enterprise.astm.org **Journals:** http://journalsip.astm.or g/
Capita line	http://www.capitaline.com/intranet/INDEST_consortium.htm
CRIS INFAC Ind. Information	http://www.crisil.com/
EBSCO Databases	http://search.epnet.com/
Elsevier's Science Direct	http://www.sciencedirect.com/
Emerald E-books (Business Mgmt & Economics Collection)	http://www.emeraldinsight.com/
Emerald Full-Test	http://www.emeraldinsight.com/
Emerald Management Xtra	http://www.emeraldinsight.com/
Euromonitor (GMID)	http://www.portal.euromonitor.com/portal/server.pt
IEC Standards	http://www.igpublish.com/iec-ebooks/main.nsp
IEEE / IEE Electronic Library Online (IEL)	http://ieeexplore.ieee.org/
INFORMS Pub Suit	http://journals.informs.org/
INSIGHT	http://www.insight.asiancerc.com/
McGraw-Hill's AccessEngineering (FKA DEL)	http://www.accessengineeringlibrary.com/

Nature (27 titles Through NME-ICT Project)	http://www.nature.com/
Optical Society of America(Optics Infobase)	http://www.opticinfobase.org
Project Muse (Through NME-ICT Project)	http://muse.jhu.edu
Springer Link	http://www.springerlink.com/
Taylor & Francis (Through NME-ICT Project)	http://www.tandfonline.com/
INSPEC	http://www.engineeringvillage2.org
MathSciNet	http://www.ams.org/mathscinet
SciFinder Scholar	http://www.cas.org/SCIFINDER/SCHOLAR/index.html (access through a Z39.50 Client to be installed on each PC)
SCOPUS Database	http://www.scopus.com
Web of Science	http://isiknowledge.com
About Open Access	oaeresources.html
IRs@member Institutions	oaeresources.html#IRs
Open Access Directories	oaeresources.html#directories
Open Access E-Journals	oaeresources.html#ejournals

Leading Dogmas [10]

The leading dogmas should be identified as availability, accessibility and accountability and many more. The following leading dogmas may be used as a template:

➢ *Availability, Accessibility and Accountability:* To ensure the availability, accessibility and accountability of the e-contents and e-resources for each and every user is the major objective of the e-resources as e-resources shall ensure the trinity of 'A'.

➢ *Economy*: E-resources give the solution of budget as e-resources reduced the operational and infrastructural costs and enhance the usability along with improve the learning, teaching and research quality.

➢ *Dexterity and Effectiveness*: Usages of e-resources ensure the dexterity and effectiveness in the delivery of services and expected results.

➢ *Pertinence:* Improve pertinence of reading materials and available contents among the users community is also the basic and fundamental objective of the e-resources.

➢ *Transparency:* The great evil of any system is the lack of transparency; however e-resources improve the transparency in delivering the services to the end users and academic community.

➢ *Privacy:* The very significant aspect of the e-resources is that it provides the privacy of usages. E-resources are licensed based and access only through the username, password, LAN and Campus Wide Network. Username and password may be private one, public domain and institutional based.

Capacity Building

Academic community based on the information resources through which latest updates may be accessed on a single platform and make them capable enough to cope up with the latest changes and updates in their concerned discipline. E-resources designed with the purpose that to provide the help of stakeholders to improve their capacity to make use of the e-resources optimally. It is pertinent to mention here that e-resources play an important role to aware with the updates to students, researchers and academicians about new updates around emerging nascent technology use for teaching, learning and research. In the age of information and communication technology, it is easy to copy and paste the required material from here and there in their assignment work which is being assigned by the concerned institution. For the same, the whole responsibility of the concerned institution to trained their students and teachers about the proper use of e-contents being offered by the institution. In this connection the library consortium have gained significant value that consortium pay attention on legal issues for usage concerns of the e-resources and contents. E-resources users need up gradation from time to time and therefore capacity building for e-resources is an important aspect.

Inferential Observations

Undoubtedly, e-resources are the significant part of the modern day academic community; in fact e-resources provide researchers unlimited power, strength and access to relevant study material to find the success in their research area. Numerous institutes, colleges, deemed universities, private universities and government universities etc. are available in India, but to ensure the availability and accessibility of e-resources for underprivileged are not up to the satisfactory level reason being the drastic cut in the budgetary allocations. Sometimes it has been observed that the e-resources are available but the concerned person does not know how to use the same for better outcomes. In this connection,

government of India is doing every possible effort to enhance the usability of e-resources among the academic community. For the same, many projects have been started like UGC-INFLIBNET, N-LIST, Shodhganga Repository and Shodhgangotri etc. These copious efforts have been proving milestones among the users community. Through Shodhganga repository the member libraries can send the soft copies of the same and make them accessible in public domain. This is the value addition in the academic and research community. However, this is not bountiful and cognizable; the communities and sectors (public and private one) have to think beyond this and try to strive for the establishment of the paperless society.

Suggestions

It won't be an exaggeration to say that e-resources proved mile stone in the history of library. Generation 'Z' users believe in getting the information whether the same is being offered by legal or illegal way. They do not bother these issues. However, some agencies like INFLIBNET, AICTE-INDEST Consortium, ICICI Knowledge Park, and IIM Consortium are taking pain and the service offered by them with full proof of legal issues. Even library consortium gave the right solution of the budget. Things are available on the recommendation of the mutual agreement and on a single platform. The author feels that the following points should be considered to enhance the usability and awareness of e-resources among the users community.

➢ Nearly more than half the academic and research institutes are head in-charge library and information centers. It is strongly recommended that the competent authority should take in knowledge and initiative to appoint the qualified library professionals; thereby the e-resources may groom amongst the users community and researchers especially.

➢ Government agencies those who are offering the access of e-resources to government and government aided institutions (free of cost), they must prepare some modules of e-resources and their access to private one also on nominal price/ charges so that it may be public and private success together. In addition, private institutions can also participate in the rapidly changing world with the public sector and can be the witness of public-private success along with nation development.

➢ Although the present academic society requisite that it's a information and communication

technology era and even communication agencies also putting their claim that they are offering 3G/4G network environment, however they are far from the reality as the downloading speed is not sufficient and users face problem regarding continuous connectivity of INTERNET. Hence, library and information centers have to create the strong network area for their users where users can get the accurate and uninterrupted connectivity.

➢ Likewise, the library and information centers networking of their e-resources at zonal level. It shall give the rid of from budget constraints. In addition, it would minimize the cost of resources and maximum the user satisfaction and prove mile stone.

➢ Institutions must try to develop their institutional e-repository and digital library so that the uploaded material shall be available for its users.

➢ Regular orientation programs should be organized by the library and information centers to explore their collection among the academic community even centers must take initiative to publish newsletter of their routine activities time to time so that users shall take attention in order to know the activities being done by the library and information centers.

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Assessment of the Development of Libraries of Technical Universities of Haryana during last five Years

S.S. Joshi

Abstract

The paper is concerned with the assessment of the development of libraries of technical universities of Haryana during last five years. Presently there are three technical universities in Haryana i.e., Guru Jambheshwar University of Science and Technology, Hisar, YMCA University of Science and Technology, Faridabad and DCRUS&T, Murthal. The assessment of the expansion was done on the basis of collection development, growth of members,subscription of journals, online resources, staff position and availability of software and hardware in the concerned universityduring last five years.

Keywords: Science and Technology; Periodical; Database.

Introduction

Haryana is very rich state in India in terms of agriculture, education, culture, science and technology etc. Universities play an important role in the development of research in science and technology. To promote research following three science and technology universities have been established in the state.

1. Guru Jambheshwar University of Science and Technology, Hisar.

2. YMCA University of Science and Technology, Faridabad.

3. DCRUS&T, Murthal.

Out of the above universities, Guru Jambheshwar University of Science and Technology, Hisar came into existence in the year 1995. The university is named after Guru JambheshwarMaharaj, a saint of 15th century. All the courses in the university are concerned with science and technology. This is why it is known as the science and technology university. The university library of Guru Jambheshwar University of Science and Technology, Hisar is well equipped with printed and electronic resources. It came into existence in the year 1996. This was the

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first university library in Haryana which automatized its in-house operations in the year 2003. The university library building has a total area of 4875 sq. meter. The seating capacity of the library is 400 seats. Periodical section with a capacity of 50 seats has been established in the library where all printed journals magazines and newspapers are displayed. The other reading hall with a capacity of 80 seats is available for study from 8.00 A.M. to 12.00 midnight. During examination days this hall remains open round the clock. In addition, two computer labs have been established in the library. One lab has been established exclusively for the faculty members and research scholars of the university and the other lab for the SC/ST students of the university. These labs are equipped with the latest electronic resources and databased [1].

YMCA University of Science and Technology, Faridabad was established vide act no. 21 of 2009 of Haryana state. Previously it was known as the YMCA institute of engineering. It was the combined venture of Central agency for development aid Germany and national council of YMCA of India. The main objective of this project was to provide technical education in India on German pattern.

The University Library of YMCA University of Science and Technology is situated in the heart of the university, having easy access from every corner. This is a fully air-conditioned single story building. The total area of the library is 7200 sq. feet. The total seating capacity of the library is 120 seats.The seating capacity of the periodical section is 60 seats, where students can access the journals, magazines and

newspapers. One separate reading hall has been provided for the students to study their own books/ study material [2].

DCRUS&T, Murthal is situated near by the capital of India, Delhi. Earlier it was known as the Chhotu Ram state college of engineering. Most of the subjects in the university are related to science and technology. The university library of DCRUS&T, Murthal is situated in the four story building surrounded by the lush green environment. The seating capacity of this library is 500 seats. Which is highest among the prevailing technical universities in the state of Haryana? Generally library remains open from 7.00 A.M. to 7.00 P.M. on working days. During Saturdays, Sundays and gazetted holidays it remains open from 9.00 A.M to 5.00 P.M [3].

Collection Development

The table below shows the budget allocation on books, expenditure and Development of collection since last five years among three universities. It shows that in the year 2009-10 maximum expenditure of Rs 3926109/- was made by GJUS&T, Hisar and 2872 books were added in its collection. DCRUS&T, Murthal made an expenditure of Rs2048496/-on purchase of 2986 books and lowest expenditure was made by YMCAUS&T, Faridabad. It has been seen from the table that during last five years, every year GJUS&T is step forward among other technical universities of Haryana in context of expenditure on purchase of books. During the five years total expenditure of Rs23336580/-was made on purchase of 21871books. Books amounting to 12560875 were purchased in the university library of DCRUS&T, Murthal. Expenditure of Rs 48,50,000/- was made on purchase of 13515 books in YMCAUS &T Faridabad which is the lowest among the other technical universities of Haryana [4].

Table 1:

DCRUS&T, Murthal			GJUS&T, Hisar			YMCAUS&T, Faridabad		
Expenditure	No. of Books Added	Budget Allocated	Expenditure	No. of Books Added	Budget Allocated	Expenditure	No. of Books Added
2048496	2986	6346742	3926109	2872	700000	700000	1704
2990300	6570	5846896	5425004	6743	700000	700000	1884
2054757	1562	7390103	6849657	6264	700000	450000	1025
3256306	3826	7843685	4744088	3812	1500000	1500000	5532
2211016	1573	4770000	2391722	2180	1500000	1500000	3370
12560875	**16517**	**32197426**	**23336580**	**21871**	**5100000**	**4850000**	**13515**

Growth of Members

The below table represents the status of members in all the technical universities of Haryana. It shows that the membership is steadily increasing in all the technical universities since last five years. In 2009-10 the membership of DCRUS&T, Murthal was 2301 as compared to 4218 of GJUS&T and 2628 of YMCAUS&T, Faridabad. It has been perceived that the strength of membership in GJUS&T, Hisar is very high every year in comparison to other technical universities of Haryana. The reason may be that the strength of the courses in GJUS&T, Hisar is higher as compared to DCRUS&T, Murthal and YMCAUS&T, Faridabad. As experiences, the other reason may be that access of print and online resources in GJUS&T, Hisar is higher than the other two technical universities of Haryana and it becomes the necessity of the students and faculty members of the university to get the membership of the university library.

Table 2:

Year	DCRUS&T, Murthal	GJUS&T, Hisar	YMCAUS&T, Faridabad
2009-10	2301	4218	2628
2010-11	2872	4913	2700
2011-12	2933	5018	2792
2012-13	3735	5202	2839
2013-14	4386	5592	2874

Subscription of Journals

The table given below depicts the growth of the journals in the university libraries of all the technical universities of Haryana. It has been observed that university library of GJUS&T, Hisarhas processed highest no. of journals every year in comparison to

DCRUS&T, Murthal and YMCAUS&T, Faridabad. In the year 2010-11, DCRUS&T, Murthalwas subscribing only 50 journals in comparison to 197 journals of GJUS&T, Hisar and 35 journals of YMCAUS&T, Faridabad. It has also been observed from the table that increasing trend of journal is lowest in YMCAUS&T, Faridabad in comparison to other technical universities of Haryana. It has also been observed that in the year 2013-14 GJUS&T, Hisar has processed only 151 Indian journals for subscription as compared to 197 journals of preceding year. The reason behind this was that university library started moving towards online resources instead of print resources.

Table 3:

Year	DCRUS&T, Murthal No. of Journals	GJUS&T, Hisar No. of Journals	YMCAUS&T, Faridabad No. of Journals
2009-10	----------	----------	22
2010-11	50	197	35
2011-12	75	198	63
2012-13	100	197	----
2013-14	155	151	100

Online Resources

Online resources are considered as the backbone of any university library. These resources play vital role in research. One cannot think of research without the use of online resources. Since the pattern of subjects in technical universities is science and technology oriented hence online resources play an important role in academic activities. Universities are subscribing online resources to satisfy the informational requirements of the users. UGC through INFLIBNET is also providing facility of access of online journals to universities and colleges. Since the study is concerned with the technical universities, hence tables given below show the status of availability of online resources in the technical universities of Haryana i.e., DCRUS&T, Murthal, GJUS&T, Hisar and YMCAUS&T, Faridabad.

DCRUS &T, Murthal

The table given below demonstrates the status of online resources in the university library of DCRUS&T, Murthal. The following online resources have been subscribed by the library on payment basis or through INFLIBNET.

Table 4:

Sr No.	Name of online resource	Number of journals
1	Emerald	150
2	J-Gate	6936
3	EBSCO	239
4	Springer (Through INFLIBNET)	1389
5	American chemical society (Through INFLIBNET)	37
6	American physical society (Through INFLIBNET)	10
7	Taylor and Francis (Through INFLIBNET)	2918

Other than the above stated electronic resources the university has the access to the ISID and JCCC databases through INFONET programme of UGC.

YMCAUS&T, Faridabad

YMCAUS&T, Faridabad is subscribing following online resources through INFLIBNET. The library is also a member of DELNET, INDEST and UGC INFONET consortium:

Table 5:

Sr. No.	Name of online resource
1.	Springer Link
2.	Taylor and Francis)
3.	Nature
4.	OUP
5.	J-Store
6.	J-Gate

GJUS&T, Hisar

The following online resources are subscribed in the university library of GJUS &T, Hisar. The university library is a member of UGC INFONET consortium. Under which access to more than 7000 journals have been provided. Other than the online journals through INFLIBNET, university library of

Table 6:

Sr. No.	Name
1	ACS
2	AIP
3	American physical society
4	Blackwell
5	Annual Reviews
6	Emerald Management 175
7	IEEE (ASPP+POP)
8	CUP
9	Institute of physics publishing
10	JSTORE digital collection
11	JCCC
12	T&F
13	Royal societyof chemistry
14	OUP
15	Project Muse
16	ISID
17	Springer
18	Web of Sciences
19	Economic and Political weekly

GJUS &T,Hisar is subscribing IEEE (ASPP& POP), Emerald management, J-Gate and Prowess databasesout of its own funds. The university library is subscribing more than the double of the online resources as compared to the university libraries of the DCRUS &T, Murthal and YMCAUS &T, Faridabad.

The following online resources are subscribed by the university library of GJUS &T, Hisar.

Staff Position

The status of the library staff has direct relation with the efficiency of the library services. Two factors play prominent role in delivering the library service i.e. Strength of the staff and skill of the staff. If the library staffs are less in proportion to the library members, collection and infrastructure, this will definitely has the negative impact on library services. On the other hand if the staffs are sufficient this will improve the library services as a whole.

Skill of the staff also matters in the library. If the staff is well qualified and technically skill in delivering library services this will raise the satisfaction level of the users. On the other hand in the absence of the qualified and skilled staff, the efficiency shall be reduced. The status of the staff in the technical universities of Haryana is detailed as under:

Table 7:

Sr. No.	Name	Designation	Qualification	Pay scale
1.	Sh.P.NBajpai	Librarian	M.Sc;MLISc.,M.Phil	15600 -39100 G.P 7000
2.	Mrs.Hema Singh(Tenure)	Asstt. Lib Professional	M.Sc;ADIS; UGC NET	9300 -34,800 G.P 3200
3.	Mrs.S adhna	LCC	B.Sc;M.A,MLISc,M.Phil	5200 -20,200 G.P 1900
4.	Sh.Jitendra(Tenure)	LCC	10+2	5200 -20,200 G.P 1900
5.	Sh.Sanjay(Tenure)	LCC	B.A	5200 -20,200 G.P 1900
6.	Mrs.Seema(Tenure)	LCC	M.A;MLISc.	5200 -20,200 G.P 1900

YMCAUS &T, Faridabad

YMCAUS &Tpresently the staff position is as under:

Table 8:

Sr. No.	Name	Designation	Qualification
1	Mehar Singh	Deputy Librarian	M.Lib.Sc,M.Phil
2	Kamal Singh	Asstt. Librarian	M.Lib.Sc,M.Phil
3	Daljinder Kaur	Professional Asstt.	M.L ib.Sc
4	Anuradha	Library Asstt.	Diploma in library Science
5	Babita	Library Asstt.	M.Lib.Sc
6	Santosh	Library Asstt.	Diploma in library Science
7	Sarita	Library counter clerk	M.Lib.Sc,M.Phil
8	Dharmender	Library counter clerk	M.A., Blib Sc.

DCRUS &T, Murthal

There are only 8 staff members in the university library of DCRUS&T,Murthal. The detail is as under:

GJUS&T,Hisar

The university library of GJUS&T, Hisar has 19 regular employees and 13 contractual employees. It

Table 9:

Sr NO.	Name	Designation
1.	Dr. S. S. Joshi	Deputy Librarian
		(Having charge of Librarian)
2.	Dr. Vinod Kumar	Deputy Librarian
3.	Mr. SomDutt	Assistant Librarian
4.	Mr. Narender Kumar	Assistant Librarian
5.	Mrs. NishaKundu	Programmer
6.	Mrs. Promila Devi	Deputy Superintendent
7.	Mrs. MeeraBhola	Assistant-cum-DEO
8.	Mrs. Vishan Devi	Library Assistant
9.	Mrs. Kiran Sharma	Library Assistant
10.	Mr. Jai Singh	Library Attendant-Cum-Restorer
11.	Mrs. Suman Saini	Clerk-cum-JDEO
12.	Mr. Ram Prasad	Clerk-cum-JDEO
13.	Mr. BalrajHooda	Clerk-cum-JDEO
14.	Mr. Deepak Chhabra	Laboratory Attendant
15.	Mr. Raj Singh	Library Attendant-Cum-Restorer
16.	Mr. Surender	Library Attendant-Cum-Restorer
17.	Mr. Deepak	Library Attendant-Cum-Restorer
18.	Mr. ChanderBhan	Libra ry Attendant-Cum-Restorer
19.	Mrs. ParwatiThappa	Peon

has been observed that the strength of the staff members is highest in GJUS&T, Hisar among the rest of the technical universities of Haryana. It has also been observed that there are two deputy librarians and two assistant librarians in the university library. This strength of professional staff is again highest among all the technical universities of Haryana. The following is the detail of the regular staff members working in GJUST&T, Hisar.

Hardware and Software

This is the age of knowledge explosion. Daily, abundance of documents is published in print and digital format. Need of the researchers are also changing accordingly. They want instant and speedy information from the libraries. To cope up with the knowledge explosion and changing requirements of the users' presence of the sufficient

Name of the item	DCRUS&T, Murthal	GJUS&T, Hisar	YMCAUS&T, Faridabad
Computers	40	49	20
Servers	-------	03	1
Printers	5	12	3
Others	--------	25 Laptops , 09 CD Carousels, 1 Scanner	

Sr No.	DCRUS&T, Murthal	GJUS&T, Hisar	YMCAUS&T, Faridabad
1	Libsys	Libsys	Libsys

hardware and software is the need of the hour. In present scenario most of the libraries are using computers and software to satisfy the informational thrust of the users. The status of hardware and software in the technical universities of Haryana is detailed as under:

Hardware

Software

From the above stated tables it has been observed that the university library of GJUS&T, Hisar is rich in the area of the hardware as compared to

DCRUS&T, Murthal and YMCAUS&T, Faridabad. Instead of computers and printers in the library GJUS&T, Hisar has 09 CD carousels and 01 scanner. The storage capacity of these CD carousels is 150 CDs per carousel. The beauty of these CD carousels is that CD contained in these carousels can be retrieved on a single click. It has been observed that all the technical universities of Haryana are using Libsys for their in-house operations.

Conclusion

It has been observed from the study that University library of GJUS&T, Hisar is richer than the university libraries of DCRUS&T, Murthal and YMCAUS&T, Faridabad on account of prevailing budget provision, online resources, print resources, journals, collection development, members, and staff etc. It has also been seen that university library of GJUS&T, Hisar is receiving more online journals through INFONET programme of UGC as compared to DCRUS&T, Murthal and YMCAUS&T, Faridabad. The access to online journals can be enhanced in DCRUS&T, Murthal and YMCAUS&T, Faridabad only by encouraging its researchers and teachers to use the maximum online journals provided by the UGC through INFLIBNET. On the basis of the use, INFLIBNET enhances the access of online journals to various universities. It has also been observed that budget allocated to university library of GJUS&T Hisar during last five years on account of purchase of books is higher than the university libraries of technical universities of Haryana. Other than that addition of books, strength of the staff, electronic resources, databases, hardware and software are also on higher side in GJUS&T, Hisar. Attention of the Government and university authorities is required towards the development of libraries of these technical universities. In present scenario allocation of more budgets and recruitment of professional and supportive staff is the immediate requirement of theses technical university libraries.

Reference

1.   http://www.GJUST&T.ac.in/facility/library.html

2.   http://www.ymcaust.ac.in/index.php/en/profile

3.   http://www.DCRUS&Tm.ac.in/content/library

4.   Rest of the Information obtained through RTI, annual report and questionnaires.

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Standard journal article

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Corporate (collective) author

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[9] National Statistics Online — Trends in suicide by method in England and Wales, 1979-2001. www.statistics.gov.uk/downloads/theme_health/ HSQ 20.pdf (accessed Jan 24, 2005): 7-18. Only verified references against the original documents should be cited. Authors are responsible for the accuracy and completeness of their references and for correct text citation. The number of reference should be kept limited to 20 in case of major communications and 10 for short communications.

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