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Delhi University College Library System: A Study of Women Colleges of North Campus

Anil Kumar Dhiman[1], Surendra Singh[2]

Abstract

Academic libraries, particularly the university libraries are doing well in the era of information and communication technology. They are making use of it not only for in-house services comprising of issue – return of the documents, controlling over the serials and providing current awareness services etc. but also providing 24x7 access of electronic resources. However, college libraries are lagging behind in this regard though various initiatives have been made to automate their library services and for providing access to electronic resources but the efforts are not quite satisfactory. Thus, keeping in view the use of ICTs in college libraries, this study was conducted for women colleges of north campus of Delhi University College Library System. This provides an insight for the status library automation activities and also about the ICT use in providing internet access and access to the e-resources.

Keywords: ICT; Library Automation; Delhi University College Libraries and Electronic Journal Listing Service (EJLS).

Introduction

Libraries are supposed to be existed in the world since ancient times but at that time they were considered only as the repositories of knowledge but they formed an integral part of education. However, with the advent of computers [1] and easy and frequent availability of the ICT that is the combination of information and communication technologies [2,3] have completely changed the scenario and nowadays, the computers are used to store, retrieve and disseminate the information.

Further, the advent of World Wide Web (WWW) has led to the access of information 24x7x365 where anyone with the internet connection, can have the remote access of documents at his desktop. It is rightly mentions in this regard, "today, libraries are surrounded by networked data that is connected to vast ocean of internet-based services. Moreover, electronic resources relevant to the professions are developing at an unprecedented pace" [1]. However, the primary objective of libraries remains same that is to organize and provide access to information although the format and methods have changed drastically. But the use of ICT in library field and provision of ICT based services cannot be denied at any basis.

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State of Art of the Colleges Surveyed

Aditi Mahavidyalaya was established in 1994 and since two decades it has been a pioneering institution bringing higher education to women students. This college plays a dynamic role in bringing in women empowerment to the marginalized women population of Delhi rural outskirts. *Daulat Ram College* that was established in the year 1853 is one of the oldest and leading colleges of University of Delhi, which imparts education towards degree at the Bachelor's level in Arts, Science and Commerce. It has seven departments, which enroll students at the Masters level and hold M.A. tutorials that supplement the classes. *Indraprastha College for Women* was founded in 1924 and it is the oldest women's college of the University

of Delhi. Degree courses in the college were introduced in 1930s and in 1938 the University recognized Indraprastha College as a degree college. *Miranda House College* is a residential college for women that was founded in 1948 by Sir Maurice Gwyer, the then Vice Chancellor of Delhi University. This college is one of the premier women's institutions of Delhi University which offers liberal education in humanities and science to more than 2500 students. *Mata Sundri College for Women* is a constituent college of the University of Delhi that was established by Delhi Sikhs Gurudwara Management Committee in the year 1967. It imparts higher education in the traditional fields of Arts & Commerce and also acting as a centre for the promotion of Punjabi Language and Culture.

Review of Literature

Bansal [4] has conducted a study on the library services of F.C. College for Women, Hissar using questionnaire method. The study aims to analyze use pattern, adequacy of library collection, users' opinion on information sources and services. The study notes that maximum users are found satisfied with the physical facilities and collection as well as arrangement of the library reading material.

Meeramani and Krishnamurthy [5] are of the opinion that library is the first and foremost tool, which is able to help the college library users, students and staff. However, the changes are inevitable in every field and library is not exception from other. They add that new techniques were apprehensive in the beginning of the 20th century in libraries. Thus, the libraries are functioning in a dynamic and complex environment and the importance of librarians has been considerably strengthened both at national and international level.

Patel [6] has studied effective library services using ICT in India. He is of the opinion that information and communication technology is changing the work of libraries and information centers and further the library automation activities are gaining momentum in college libraries. But the librarians should be prepared to meet the challenges. They need to acquire adequate knowledge about the hardware and software options available.

Singh and Rana [7] have studied the impact of ICT on library user and services. They mention that today computers are related to technologies. It has brought revolutionary changes in the whole world of information. Perhaps, this is the most exciting period in the history of human race, when world's most population is shifting from techno-illiterate to techno-literate.

Geetha et al [8] have conducted a comparative study on the use of library resources and services by the students of PESITM and JNN College of Engineering in Shivamogga district of Karnataka. The findings of the study reveal that the difficulties in locating the needed materials by the students and lack of latest collection are true for both college libraries, and are the major causes amongst other problems. However, the difference between PESITM and JNNCE in this comparative study is significant and the services being offered in both libraries differ in various cases such as, digital library, virtual library and e-resources.

Veena and Kothari [9] have studied the user satisfaction with library resources, services and facilities in SDM College Library, Ujire using questionnaire method. The findings of the study shows that 177 (59.0%) of respondents have the habit to visit to the library daily, majority 260 (86.7%) of respondents are highly satisfied with the collection of general books, majority 210 (70.0%) are highly satisfied with collection of text books and 160 (53.3%) respondents considered the circulation services of library as excellent. The study has also suggested that college library should carry out user studies at regular intervals, in order to identify user's information needs and their information gathering behaviors.

Research Methods

There are available various methods of conducting a research, such as the survey method, experimental method, historical method and Delphi method etc [10]. But for conducting present research questionnaire technique was used. A standard questionnaire was prepared for collecting data from the respective libraries on various points as discussed and analyzed under heading 5.

Data Collection and Analysis

The data pertaining to the present survey were collected using questionnaire method. These were circulated to the Librarians/ Library In charge in the respective libraries and collected back personally. These are analyzed from various points under following headings.

- *Library building related information*

Table 1 shows the detailed account of library related information of different colleges studied. It is very

clear that out of 5 libraries, 03 have its own building except the Daulatram College and Mata Sundari College. However, Daulatram College is oldest one that was established in 1853 and Mata Sundari College is among one of the oldest colleges in Delhi University Library System that was established in the year 1967. Area wise, Miranda House College library is on the top amongst the college libraries surveyed with 1241.00 sq meter area followed by 445.9346 sq meter area of Indaperastha College. Aditi Mahavidyalaya is at the last with 222.96 sq meter area.

• *Library working hours*

Library working hours are shown in table 2. It is seen from the table that Miranda House College library remain open for a long time that is 11.5 hours from 8.00 AM to 7.30.

While two other libraries namely of Aditi Mahavidyalaya and Mata Sundari College open for 8 hours from 9.00 AM to 5.00 PM and 8.30 AM to 4.30 PM respectively. Rest other two libraries namely of Daulatram College and Inderprastha College open for 8.5 hours.

However, Inderprastha College library and Miranda House College library remain open during holidays too for 7 and 9 hours respectively.

• *Physical facilities available in libraries*

Table 3 detailed out about the physical facilities available in the college libraries surveyed. It is very clear that all libraries except that of Aditi Mahavidyalaya have separate reading room for faculty members. However, the reading room facilities are adequate in all the libraries.

Maximum number of seating capacity is available in Inderprastha College where 305 readers can sit together at a time, followed by 210 readers' capacity in Miranda House College. Least sitting capacity is available in Aditi Mahavidyalaya library.

• *Details of library staff*

The details of library staff is presented in table 4. It may be noted that out of 05 colleges, 02 have librarians and in rest 03 colleges, the post of librarian is lying vacant. Other posts include professional assistants, semi-professional assistants and clerical staff along with fourth class employee.

Table 1: Library Building Related Information

S. N.	Name of College	Year of Establishment	Library Building		Area in Sq mt.
			Attached	Seprate	
1	Aditi Mahavidyalya (For Women)	1994	No	Yes	222.96
2	Daulat Ram College (For Women)	1853	Yes	No	325.1606
3	Inderprastha College (For Women)	1924	No	Yes	445.9346
4	Miranda House College (For Women)	1948	No	Yes	1241.00
5	Mata Sundri College (For Women)	1967	Yes	No	353.0316

Table 2: Library Working Hours

S. N.	Name of College	Library Working Hours		
		Week Days	Holidays	Vacations Days
1	Aditi Mahavidyalya (For Women)	9 to 5 (8 hours)	No	9.00 to 5.00 (8 hours)
2	Daulat Ram College (For Women)	8.30 to 5 (8.5 hours)	No	8.30 to 5.00 (8.5 hours)
3	Inderprastha College (For Women)	8.30 to 5.30 (9 hours)	9.00 to 4.00 (7 hours)	9.00 to 5.30 (8.5 hours)
4	Miranda House College (For Women)	8 to 7.30 (11.5 hours)	8.00 to 5.00 (9 hours)	8.00 to 7.30 (11.5 hours)
5	Mata Sundri College (For Women)	8.30 to 4.30 (8 hours)	No	8.30 to 4.30 (8 hours)

Table 3: Physical Facilities Available in Libraries

S. N.	Name of College	Physical Facilities				
		Reading Room Adequacy		Seprate Reading Room for Users	Seprate Reading Room for Faculty	Numbe3r of Seats Available in Reading Room
		Yes	No			
1	Aditi Mahavidyalya (For Women)	Yes	-	Yes	No	90
2	Daulat Ram College (For Women)	Yes	-	Yes	Yes	100
3	Inderprastha College (For Women)	Yes	-	Yes	Yes	305
4	Miranda House College (For Women)	Yes	-	Yes	Yes	210
5	Mata Sundri College (For Women)	Yes	-	Yes	Yes	180

Table 4: Details of Library Staff

Name of College	Library Staff											
	Librarian		Professional Assistant		Semi-Professional		Clerical Staff (JLIA)		Fourth Class (Library Attendants)		Other(S), If	
	Post Sanctioned	Post Vacant	Post Sanctioned	Post Vacant	Post Sanctioned	Post Vacant	Post Sanctioned	Post Vacant	Post Sanctioned	Post Vacant	Post Sanctioned	Post Vacant
Aditi Mahavidyalya (For Women)	01	01	02	01	02	01	02	00	02	02	00	00
Daulat Ram College (For Women)	01	01	02	01	03	01	02	02	10	07	00	00
Inderprastha College (For Women)	01	00	02	00	03	01	03	00	12	01	00	00
Miranda House College (For Women)	01	00	02	01	03	03	02	01	12	02	00	00
Mata Sundri College (For Women)	01	00	02	00	02	00	02	01	06	00	00	00

Table 5: Sources of Finance in Libraries

S. N.	Name of College	Sources of Finance in Library				
		UGC Grant	Special Grant	Library Fee	Library Fines	Others If Any
1	Aditi Mahavidyalya (For Women)	Yes	-	Yes	No	No
2	Daulat Ram College (For Women)	Yes	Yes	Yes	No	No
3	Inderprastha College (For Women)	Yes	Yes	Yes	Yes	No
4	Miranda House College (For Women)	Yes	-	Yes	No	No
5	Mata Sundri College (For Women)	Yes	Yes	Yes	No	No

Table 6: Budget Expenditure on Library Materials

S. N.	Name of College	Items						
		Books	Journals	Non-Print Materials	Binding	Equipments & Furniture	Others	Total Budget
1	Aditi Mahavidyalya (For Women)	105000(70%)	15000 (10%)	No	7500(5%)	7500(5%)	15000(10%)	1.5 LACS100%
2	Daulat Ram College (For Women)	1226400(80%)	30660 (2%)	153300 (10%)	61320(4%)	61320(4%)	00(00)	15 .33 LACS100%
3	Inderprastha College (For Women)	1200000(80%)	292500 (19.5%)	-	7500(0.5%)	-	00(00)	15LACS100%
4	Miranda House College (For Women)	1155000(70%)	12375 (0.75%)	-	165000(10%)	247500(15%)	70125(4.25%)	16.5 LACS100%
5	Mata Sundri College (For Women)	920000(80%)	103500 (9%)	11500 (1%)	57500(5%)	57500(5%)	00(00)	11.5 LACS

It is seen that there are 02 posts of professional assitatns each in all colleges surveyed, but there is no professional assistant in Inderprastha and Mata Sundari College libraries. Further, 01 post in rest of the colleges are lying vacant. As far as semi-professionals are concerned, there are 02 posts of them in Aditi Mahavidyalya and Mata Sundari College libraries and 03 in rest of the colleges. Mata Sundari College has all post of Semi-professional assistants filled but 01 post each in Aditi Mahavidyalaya, Daulatram College, and Inderprestha College libraries are lying vacant. But Miranda House College Library has all three posts of semi-professional assistants vacant.

Further, there are 02 clerical staff in Aditi Mahavidyala against 02 sanctioned posts, but there is no clerical staff in Daulatram College against 02 sanctioned posts. In inderprastha College, all 03 posts are filled and in Miranda House and Mata Sundari College libraires, 01 post of them vacant against 02 sanctioned posts.

While, all 02 posts of fourth class employee are vacant in Aditi Mahavidyalaya, out of 10, 07 are vacant in Daulatram College, out of 11, 01 in Inderprastha College, and 02 out of 12 in Miranda are vacant. But all 06 posts are filled in Mata Sundari College libraries.

• *Sources of finance in libraries*

The major source of finance for the libraries is UGC grant that is being received by all 05 college libraries. But a special grant is also being received by 03 college libraries, namely in Daulatram College, Inderprastha College and Mata Sundari College libraries.

However, all the libraries also charge library fee and fines is collected by only one library that is in Inderprastha College library. But library fee and fines are meager contribution towards the source of finance which cannot be treated as regular income. Thus, all surveyed libraries are dependent on UGC grants mainly.

• *Budget Expenditure on Library Materials*

Budgetary details of the college libraries surveyed are depicted in table 6. It is seen that the highest budget is of Miranada House College that is 16.5 lacs, followed by 15.33 lacs of Inderprastha College. But least budget is in Aditi Mahavidyalaya that is only 1.5 lacs per annum. Budget of Mata Sundari College library is also sufficient.

It is noted that 80% of the total budget is spent on purchasing of books in Daulatram College, Inderprastha College and Mata Sundari College; while 70% each in the library of Miranda House College and Aditi Mahavidyalaya libraries respectively.

Further, it is also seen that 0.75% of the budget is spent for journals in Miranda House College, 2% in Daulatram College and 9% Mata Sundari College followed by 10% in Aditi Mahavidyala and 19.5% in Inderprastha College for journals.

However, the provision for purchasing non-print material is only there in Daulatram College and Mata Sundari College libraries but no provision is there in Aditi Mahavidyalaya library. Though, rest 02 colleges, namely Inderprastha and Miranda House College did not reply on this point. Other provisions are shown in table.

• *Total collection of the library*

Total strength of collection of each library surveyed is shown in table 7. It can be noted very well that maximum collection comprising of 112565 books and 63 current journals and 22 magazines is in the library of Inderprastha College Library. This library is also getting e-books etc. through DULS, N-LIST and DELNET programme. It is followed by the collection in Daulatram College Library that is having 110000 books, 2000 e-books and 42 current journals.

Book Collection is quite satisfactory in Miranda House and Mata Sundari College libraries. But Aditi Mahavidyalya is very much behnd with 23000 book collection in its library.

• *Mode of acquiring the books / periodicals*

Table 8 shows that all libraries purchase books on the recommendations of Head of Departments (HODs) only. Thus, this is the major mode of acquiring books in the library.

However, sometimes on approval books are also purchased in Inderprastha College and Mata Sundari College libraries.

• *Periodical and Newspapers being subscribed in Library*

How many periodical and newspapers are being subscribed in the libraries surveyed are shown in table 9. It is seen that Inderprastha College Library subscribes 63 periodicals, 22 newspapers and 22 magazines followed by the library of Miranda House library that is subscribing 50 periodicals and 16 newspapers respectively.

Table 7: Total Collection of the Library

S. N.	Name of College	Total Number of Collection							
		Books	E-Books	Journals	Magazines	Audio Cassettes	Video Cassettes	Cd-Rom Databases	Other, If Any
1	Aditi Mahavidyalya (For Women)	23000	-	02	00	00	00	00	00
2	Daulat Ram College (For Women)	110000	2000	42	00	00	00	00	00
3	Inderprastha College (For Women)	112565	Duls N-List Delnet	63	22	00	00	00	00
4	Miranda House College (For Women)	100270	-	50	00	00	00	00	00
5	Mata Sundri College (For Women)	103000	Duls	26	36	Cd+Dvd 67	00	00	00

Table 8: Mode of acquiring the Books / Periodicals

S. N.	Name of College	Acquiring Of Documents				
		Standing Order	Approval	Based on Book Review	Hod Recommen-Dation	Other If Any
1	Aditi Mahavidyalya (For Women)	-	-	-	Yes	-
2	Daulat Ram College (For Women)	-	-	-	Yes	-
3	Inderprastha College (For Women)	Yes	Yes	Yes	Yes	-
4	Miranda House College (For Women)	-	-	-	Yes	-
5	Mata Sundri College (For Women)	-	Yes	-	Yes	-

Table 9: Periodical and Newspapers being subscribed in Library

S. N.	Name of College	Subscribed Number of Periodicals & Newspapers			
		Periodicals	Newspapers	Magazines	Others, If Any
1	Aditi Mahavidyalya (For Women)	02	09	00	-
2	Daulat Ram College (For Women)	42	12	00	-
3	Inderprastha College (For Women)	63	22	22	-
4	Miranda House College (For Women)	50	16	00	-
5	Mata Sundri College (For Women)	26	16	36	-

• *Periodical and newspapers being subscribed in library*

But there are only 02 periodicals and 09 newspapers being subscribed in Aditi Mahavidyalaya library.

•*Total number of membership*

Statistics about the membership of the libraries are presented in table 10. It is very clear from the data presented in the table that maximum strength of the students and faculty members comprising of 4350 students and 250 faculty members are in Miranda House College that is followed by 4000 students and 220 faculty members are in Daulatram College.

Least number of memberships comprising of 2000 students and 150 faculty members is in Aditi Mahavidyalaya that may be because of the fact that it is comparatively new college among all the colleges surveyed in Delhi College Library System.

• *Status of library services*

Circulation, reference and book bank services are the most important services of any library. Table 11 reveals that all these three services are being provided by all the college libraries under survey. However, today libraries are migrating into digital era where the information is available 24x7 if internet connection is there.

Thus, a question was also asked in the questionnaire whether internet services are available or not? It is quite happy to see that except that Aditi Mahavidyalaya, rest 04 colleges are providing internet access to their users. However, inter-library loan service is available only in Inderprastha College.

• *Status of library automation*

Further, table 12 shows the status of library automaton in the college surveyed. It is quite happy

situation that except Aditi Mahavidyalaya, all other libraries are automated.

LibSys that is considered as good software among all existing software is being used by Miranda House College Library. Troodon is being used in Daulatram College, SOUL in Interprastha College and Libware version 03.3 is used in Mata Sundari College library.

• *ICT Use and the purpose of Using ICT resources*

Nowadays, ICT has become an established term that is being used everywhere in the every walk of life. Libraries are also using ICT for providing different kinds of services to their users. Table 13 shows that almost all colleges except that of Aditi Mahavidyalaya are using ICT for acquiring information and to retrieve them.

However, some of them, namely Inderprastha College, Miranda Hosue College and Mata Sundari College opined that ICT is also a medium for storing and disseminating the information and they are making use of ICT for this purposes.

• *Barriers in ICT Adoption*

Various types of barriers exist in adoption of ICT by the college libraries. Information was sought from the Librarian/ Library Incharge about the types of barriers they face in adoption of ICT in their libraries, but it is seen that out of 05 colleges surveyed, there is no ICT use in Aditi Mahavidyalyaya. However, out of rest 04 colleges, 02 namely Daulatram College and Inderprastha College replied on the points and they opined that there is lack of qualified and tradied staff in both of them. Whle, finance is also the problem in Inderprastha College library.

Thus, these two types of the barriers exit in proper adoption of ICT among them.

Table 10: Total Number of Membership

S. N.	Name of College	Number Of Membership			
		Faculity Member	Student's Number	Non-Teaching Staff	Others, If Any
1	Aditi Mahavidyalya (For Women)	150	2000	150	-
2	Daulat Ram College (For Women)	220	4000	100	-
3	Inderprastha College (For Women)	150	2500+	56+	-
4	Miranda House College (For Women)	250	4350	100	-
5	Mata Sundri College (For Women)	160	3000	60	-

Table 11: Status of Library Services

Name of College	Circulation Service	Reference Service	Photostat Service	Inter-Library Loan Service	Internet Service	Online Search Service	Book Bank Service	Other(S), If Any
Aditi Mahavidyalya (For Women)	Yes	Yes	-	-	-	-	Yes	-
Daulat Ram College (For Women)	Yes	Yes	-	-	Yes	Yes	Yes	-
Inderprastha College (For Women)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Miranda House College (For Women)	Yes	Yes	Yes	-	Yes	Yes	Yes	-
Mata Sundri College (For Women)	Yes	Yes	-	-	Yes	Yes	Yes	-

Table 12: Status of Library Automation

S. N.	Name of College	Status of Automation Of Library		If Yes, Please Write The Name Of Software Used	If Not, Please Give The Reason
		Yes	No		
1	Aditi Mahavidyalya (For Women)	-	No	-	-
2	Daulat Ram College (For Women)	Yes	-	Troodon	-
3	Inderprastha College (For Women)	Yes	-	Soul	-
4	Miranda House College (For Women)	Yes	-	Libsys	-
5	Mata Sundri College (For Women)	Yes	-	Libware Verson 3.0.3	-

Table 13: ICT Use and the Purpose of Using ICT Resources

S. N.	Name of College	Purpose of Use of ICT Resources				
		To Acquire Information	To Retrieve Information	To Process Information	To Store Information	To Disseminate Information
1	Aditi Mahavidyalya (For Women)	No	No	No	No	No
2	Daulat Ram College (For Women)	Yes	Yes	Yes	No	No
3	Inderprastha College (For Women)	Yes	Yes	Yes	No	Yes
4	Miranda House College (For Women)	Yes	Yes	Yes	Yes	Yes
5	Mata Sundri College (For Women)	Yes	Yes	Yes	Yes	No

Table 14: Barriers in ICT Adoption

S. N.	Name of College	Barries in ICT Adoption		If No, Give Reasons			
		Yes	No	Shortage of Staff	Lack of ICT Trained Staff	Finance	Other, If Any
1	Aditi Mahavidyalya (For Women)	-	-	-	-	-	No ICT
2	Daulat Ram College (For Women)	Yes	-	-	Yes	-	-
3	Inderprastha College (For Women)	Yes	-	-	Yes	Yes	-
4	Miranda House College (For Women)	-	NO	-	-	-	-
5	Mata Sundri College (For Women)	-	NO	-	-	-	-

Table 15: Membership of Library Consortium

S. N.	Name of College	Membership of Consortium			
		Yes	No	If Yes, Please Mention the Name of Consortium	If Not Please Give the Reason
1	Aditi Mahavidyalya (For Women)	-	No	-	-
2	Daulat Ram College (For Women)	Yes	-	N-List of Inflibnet, Duls	-
3	Inderprastha College (For Women)	Yes	-	Delnet, N-List of Inflibnet	-
4	Miranda House College (For Women)	-	No	DULS	-
5	Mata Sundri College (For Women)	-	No	DULS	-

It is seen that because of electronic journals and the e-books various kinds of library consortia, such as E-Shodhsindhu (formed by merging INDEST – AICTE and UGC-INFONET Digital Library Consortia), have emerged for acquiring electronic resources in libraries. Thus, the last question was asked from the Librarian / Library Incharge – whether their library is having membership of any library consortia for accessing e-journals and the e-books etc.

Their reply is tabulated and analyzed in Table 15. It is seen only 02 colleges – Daulatram College and Inderprastha College are getting access of e-resources through N-LIST programme of Inflibnet and Miranda House College and Mata Sundari College acquire them through DULS system. DULS has started Electronic Journal Listing Service (EJLS) project through which a large number of e-journals databases are accessible through DU campus network. User can search for the journal online by its title, publisher or subject. The searched result can be filtered till the article level in any of the journals. But a user needs to be on the DU network in order to access the searched article. Only authorized users are allowed to use this service as the authentication is done at IP level. The journals can be accessed anywhere on the DU network. All the colleges (on campus and off-campus) are using this service since they are the part of NKN [11]. However, there is no access of them in Aditi Mahavidyalaya library.

Major findings of the study

The major findings of the study are:

- Miranda House College library seems to be at number one because it remains open during holidays too and its working hours are longer than others. It is also having a good collection of books and other documents.
- UGC Grant is the major source of finance in all college libraries.
- Mata Sundari College Library has sufficient staff, as librarian is there and all the post of professional assistant and semi-professional assistant are filled. Further, out of 03 clerical staff, 02 posts are filled. 10 fourth class employee are also there against 12 sanctioned posts.

- Maximum collection comprising of 112565 books and 63 current journals and 22 magazines is in the library of Inderprastha College Library. This library is also getting e-books etc. However, Mata Sundar College also possesses a collection of non-book material consisting of 67 CD/DVDs.
- Head of the Departments (HODs) recommendation is the major mode of acquiring books in the library.
- Maximum strength of the students and faculty members comprising of 4350 students and 250 faculty members are in Miranda House College that is followed by 4000 students and 220 faculty members are in Daulatram College.
- Internet service is being provided by 04 colleges except than the Aditi Mahavidyalaya However, inter-library loan service is available only in Inderprastha College.
- As far as the status of library automation is concerned, all libraries except that of Aditi Mahavidyalaya are automated but they are using different library software. Miranda House library is using LibSys software that is considered as one of the best library software.
- All colleges except that of Aditi Mahavidyalaya are using ICT for acquiring information and to retrieve them for the benefits of their users.
- Daulatram and Inderprastha Colleges are the member of N-LIST programme of Inflibnet and Miranda House College and Mata Sundari College are acquiring e-resources through DULS system. But there is no access of them in Aditi Mahavidyalaya library.

Conclusion

On the basis of the data analysis and major findings of the survey it can be concluded that all libraries are doing well. However, the library of Miranda House seems to be on the top with good facilities and infrastructure and also good library software. But some lacunas exist in the college library of Aditi Mahavidyalaya which may be because of the facts that it is comparatively new establishment among all other existing libraries surveyed. Thus, this library needs improvements, especially in the field of library automation.

Further, inter-library loan facility is not there in the colleges other than Inderprastha College, while it should be there to share the resources among each library and to overcome the problem of financial crunch to subscribe the resources. Aditi Mahavidyalaya library needs to take the membership of consortium or DULS access to make its users enable to get access of e-resources.

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Citation Analysis of Doctoral Theses in the Field of International Studies Submitted to Jawaharlal Nehru University, New Delhi (2000-2011)

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Abstract

The citation represents a relationship between the cited and citing documents. The paper discusses the citation analysis of Ph.D. theses in International Studies submitted to JNU, New Delhi. Study the principle form of literature used by the researchers, distribution of citations according to time period and identify the leading journals in citations. Also prepare a list of core journals in International studies and study the authorship pattern of cited references.

Keywords: Citation Analysis; Bibliometrics; International Studies; Authorship Pattern.

Introduction

Analysis of citations is common in the sociology of science. Approaches to citations - citation patterns or citation behavior- allows to derive maps of the structure of scientific specialties or disciplines and helps to construct typologies of different varieties of references and citations by content analysis (Gilbert 1977). In the process of citation analysis citations explore the structure of science. The primary idea goes back to Derek de Solla Price, who documented the growth of scientific literature in his book Little Science, Big Science (1963). This book became a classic, suggesting that science is not a unified whole, but a mosaic of specialty areas. This new understanding fostered an effort to map the intellectual structure of science. The techniques for this analysis were taken from bibliometrics.

The citation represents a relationship between the cited and citing documents. The nature of this relationship is although difficult to characterize but Smith (1981) stated that Garfield (1965) identified some fifteen reasons of why authors cite. These are:

1. Paying homage to pioneers.
2. Giving credit for related work (homage to peers).
3. Identifying methodology, equipment etc.
4. Providing background reading.
5. Correcting one's own work.
6. Correcting the work of others.
7. Criticizing previous work.
8. Substantiating claims.
9. Altering forthcoming work.
10. Providing leads to poorly disseminate poorly indexed or uncited work.
11. Authenticating data and classes of fact-physical constants etc.
12. Identifying original publications in which an idea or concept was discussed
13. Identifying original publications or other work describing an eponymic concept or term…
14. Disclaiming work or ideas of others (negative claims).
15. Disputing priority claims others (negative homage).

According to Fulton (1945), and Pastell (1945), bibliographic citation serve two basic function i.e.

1. Identify the source of a given statement, and
2. Describe the nature and scope of the printed document in which the statement is found.

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Brittain and Line (1972) discussed importance of citation as for:

1. Identification of key documents and creation of core lists of journals.
2. Study of coverage of primary journals and other materials in secondary sercice.
3. Clusturing of documents according to common references and citations.
4. Study of attributes of literature including growth rate, obsolescence, citation practices.
5. Study of structure of scientific literature according to language, country of origin, age subject, form, authorship or any combination of these attributes.

International Studies

Generally refers to the specific university degrees and courses which are concerned with the study of 'the major political, economic, social, and cultural issues that dominate the international agenda'. The term itself can be more specifically defined as 'the contemporary and historical understanding of global societies, cultures, languages and systems of government and of the complex relationships between them that shape the world we live in'. The terms and concepts of International Studies and international relations are strongly related; however, International relations focus more directly on the relationship between countries, whereas International Studies can encompass all phenomena which are globally oriented.

The history of the discipline of International Studies is strongly linked with the history of the study of international relations, as described in the International Relations entry. However, the study of International Studies as a separate entity to International Relations emerged throughout the 20th century, as an increasingly complex world began to be influenced by globalization, and a greater number of issues emerged (rather than only inter-country relations).

The discipline was greatly influenced by the establishment of the International Studies Association, which was established in 1959 by a 'group of academics and practitioners' with the aim of 'seeking to pursue mutual interests in world affairs through the organization of a professional association'. The establishment of the association reflected the increasing interest in global issues and reflected the need for international academic dialogue. Throughout the later stages of the 20th century and into the 21st century, many education institutions worldwide developed International Studies degrees (both undergraduate and postgraduate). The emergence and increasing popularity of these degrees reflect the general patterns of increasing global interconnectedness and globalization, in that education providers are becoming more aware that the discipline is becoming increasingly relevant and necessary in the context of the 21st century. The discipline has become increasingly popular in Australia as well as in East Asian countries.

About JNU

Young at forty two years, as universities go, what has lent strength and energy to Jawaharlal Nehru University is the vision that ideas are a field for adventure, experimentation and unceasing quest and diversity of opinions its chief premise. In the early 1970s, when JNU opened its doors to teachers and students, frontier disciplines and new perspectives on old disciplines were brought to the Indian university system. The excellent teacher-student ratio at 1:10, a mode of instruction which encouraged students to explore their own creativity instead of reproducing received knowledge, and an exclusively internal evaluation were a new experiment on the Indian academic landscape; these have stood the test of time. The very Nehruvian objectives embedded in the founding of the University, national integration, social justice, secularism, the democratic way of life, international understanding and scientific approach to the problems of society had built into it constant and energetic endeavour to renew knowledge through self-questioning.

The JNU campus is a microcosm of the Indian nation, drawing students from every nook and corner of the country and from every group and stratum of society. To make sure that this is so, annual admission tests are simultaneously held at 37 centres spread across the length and breadth of the country, and special care is taken to draw students from the underprivileged castes and ethic groups by reserving 22.5 per cent of seats for them. Overseas students form some 10 percent of the annual intake. Students' hostels and blocks of faculty residences are interspersed with one another, underlining the vision of a large Indian family.

Objective of the Study

The main purpose of the study is the citation analysis of Ph.D thesis in the discipline of international studies submitted to JNU Delhi during 2000-2011.

The Objectives of the Study are to:

- Study the principle form of literature used by the researchers
- Study the distribution of citations according to the time of period.
- Identify the leading journal in citations.
- Prepare a list of core journal in international Studies.
- Study the authorship pattern of cited references.

Methodology

Data for the present study Consists of theses submitted to Jawaharlal Nehru University, Delhi during 2000-2011. All the reference listed in this theses were noted down from each theses by the researchers on a specified data capturing sheet designed for this purpose. The collected references were thoroughly analyzed and segregated in to the different categories of documents such as books. Journals articles, conference paper, reports etc. Each reference made at one time has been counted as one citation. If the same reference was repeated it has been counted again. The information relating to each citation, i.e, number of authors, bibliographic form, name of the journal, Subject, Country of Origin, Language, name of the publisher, and the availability of references in the library concerned. A total of 2529 citations were found in all the Ph.D theses. The data was compiled and analyzed using MS-Excel software. Finally a list of core journals was compiled and prepared on the basis of highly cited articles of the journals in International Studies.

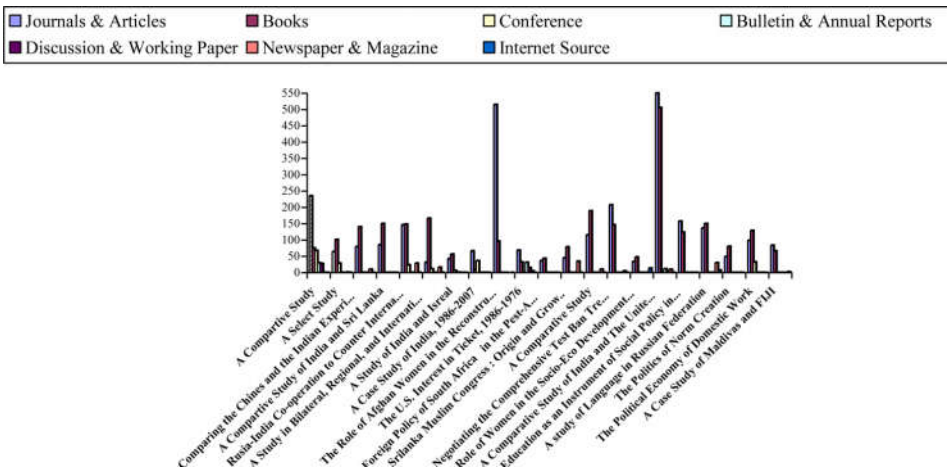
Data Analysis and Interpretation

The problem for the present study is *"Citation Analysis of Doctoral Thesis in the Field Of International Studies."* The collected data are organized and tabulated by using statistical method tables, graphs

Table 1:

S. No.	Topic	Journals & Articles	Books	Conference	Bulletin & Annual Reports	Discussion & Working Paper	Newspaper Magazine	Internet	Total
1	Credit Risk Management in the Banking Sectors of Russia and India : A Comparative Study	235	75	67	29	27	-	-	433
2	International Non-Governmental Organisation in Post-Conflict Peacebuilding : A Select Study	64	101	28	-	-	1	-	194
3	State and the Diasphora : Comparing the Chines and The Indian Expereinces	79	140	-	-	-	10	-	229
4	Food Security in South Asia : A Comparative Study of India and Sri Lanka	85	150	-	-	-	-	-	235
5	Russia-India Co-operation to Counter International Terrorism 1991-2006	146	148	23	-	-	28	-	345
6	Changing Contours of India-China Relationship, 1963-1991 : A Study in Bilateral, Regional and International Perspectives	31	166	11	-	-	16	-	224

7	Technology Transfer for Dry Land Forming A Study of India and Isreal	42	56	6	1	-	-	-	105
8	Foreign Investment in the Banking Sector : A Case Study of India, 1986-2007	66	8	36	-	-	-	-	110
9	The Role of Afghan Women in the Reconstruction Processes in Post-Taliban Afghanistan	515	96	-	-	-	-	-	611
10	The U.S. Interest in Ticket, 1989-1976	68	32	-	31	15	5	-	151
11	Foreign Policy of South Africa in the Post-Apartheid Period, 1994-2005	36	43	-	-	-	-	-	79
12	Srilanka Muslim Congress : Origin and Growth of a Minority Ethic Party, 1981-2001	45	78	-	-	-	34	-	157
13	Parliamentary Commetties in Britain and India : A Comparative Study	115	189	-	-	-	10	-	314
14	Negotiating the Comprehensive Test Ban Treaty, 1994-1996	207	146	-	-	-	5	-	358
15	Role of Women in the socio-Economic Development of Uzbekistan, 1991-2006	33	47	-	-	-	-	13	113
16	Legislature and Foreign Policy - Making : A Compartive Study of India and the United States of America in the 1990's	601	506	-	11	-	9	-	1127
17	Education as an Instrument of Social Policy in Isreal	157	123	-	-	-	-	-	280
18	A Study of Language in Russian Federation	136	150	-	-	-	30	7	323
19	Nuclear Weapon and the World Court : The Politics of Norm Creation	49	80	-	-	-	-	-	129
20	Globalisation, Gender and Migration: The Political Economy of Domestic Work	98	129	32	-	-	-	-	259
21	Ecotourism and Sustainable Development of Island Economics : A Case Study of Maldivas and FIJI	83	66	-	-	-	-	2	151
		2891 (48.78%)	2529 (42.67%)	160 (2.69%)	115 (1.94%)	42 (0.70%)	150 (2.53%)	40 (0.67%)	5927


Journals & Articles
Books
Conference
Bulletin & Annual Reports
Discussion & Working Paper
Newspaper & Magazine
Internet Source
550
500
450
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350
300
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100
50
0
A Comparitive Study
A Select Study
Comparing the Chines and the Indian Experi...
A Comparitive Study of India and Sri Lanka
Russia-India Co-operation to Counter Interna...
A Study in Bilateral, Regional, and Internati...
A Study of India and Isreal
A Case Study of India, 1986-2007
The Role of Afghan Women in the Reconstru...
The U.S. Interest in Ticket, 1986-1976
Foreign Policy of South Africa in the Post-A...
Srilanka Muslim Congress : Origin and Grow...
A Comparative Study
Negotiating the Comprehensive Test Ban Tre...
Role of Women in the Socio-Eco Development...
A Comparative Study of India and The Unite...
Education as an Instrument of Social Policy in...
A study of Language in Russian Federation
The Politics of Norm Creation
The Political Economy of Domestic Work
A Case Study of Maldivas and FIJI

Fig. 1:

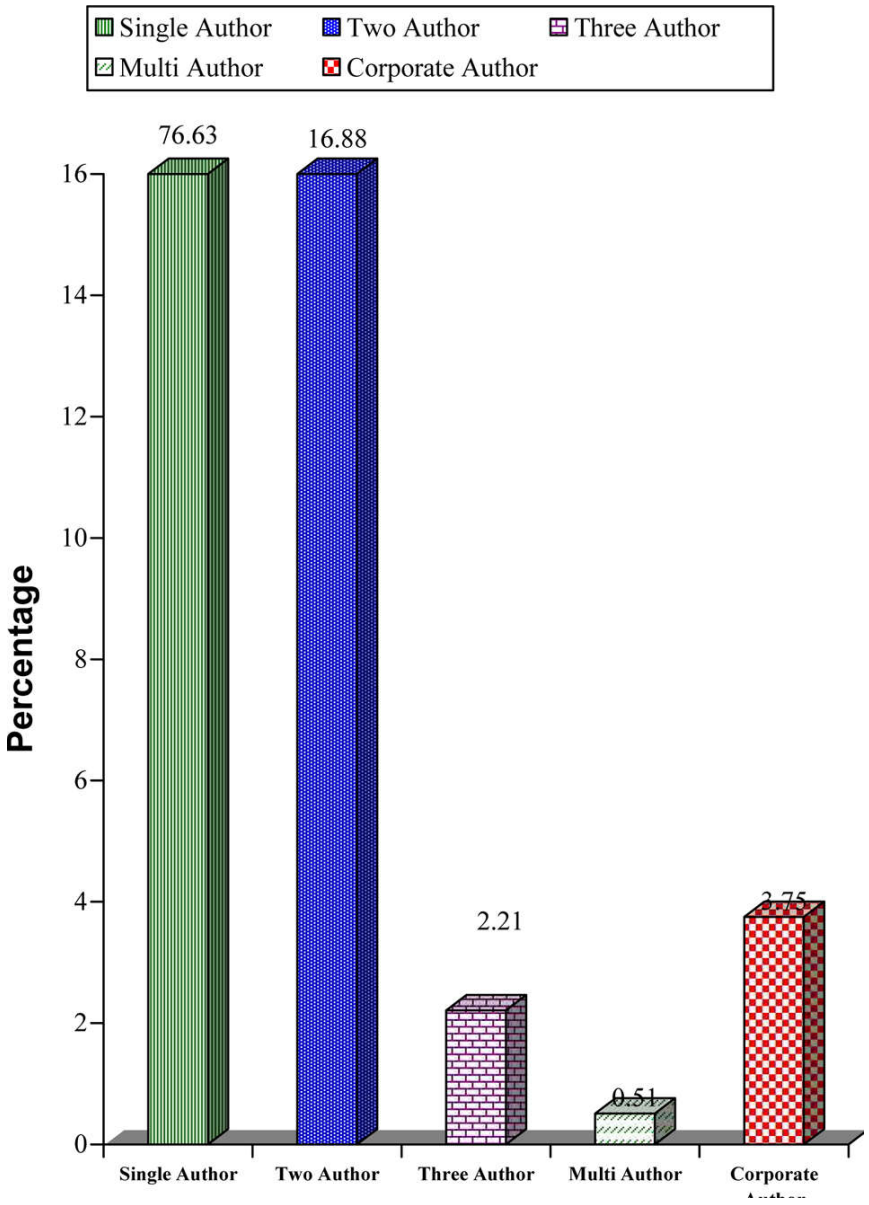
Single Author
Two Author
Three Author
Multi Author
Corporate Author
Percentage
16
14
12
10
8
6
4
2
0
76.63
16.88
2.21
0.51
2.75
Single Author
Two Author
Three Author
Multi Author
Corporate

Fig. 2:

Table 2:

S. No.	Author	No. of Citation	Percentage
1	Single Author	1938	76.63%
2	Two Author	427	16.88%
3	Three Author	56	2.21%
4	Multi Author	13	0.51%
5	Corporate Author	95	3.75%
	Total	**2529**	**100%**

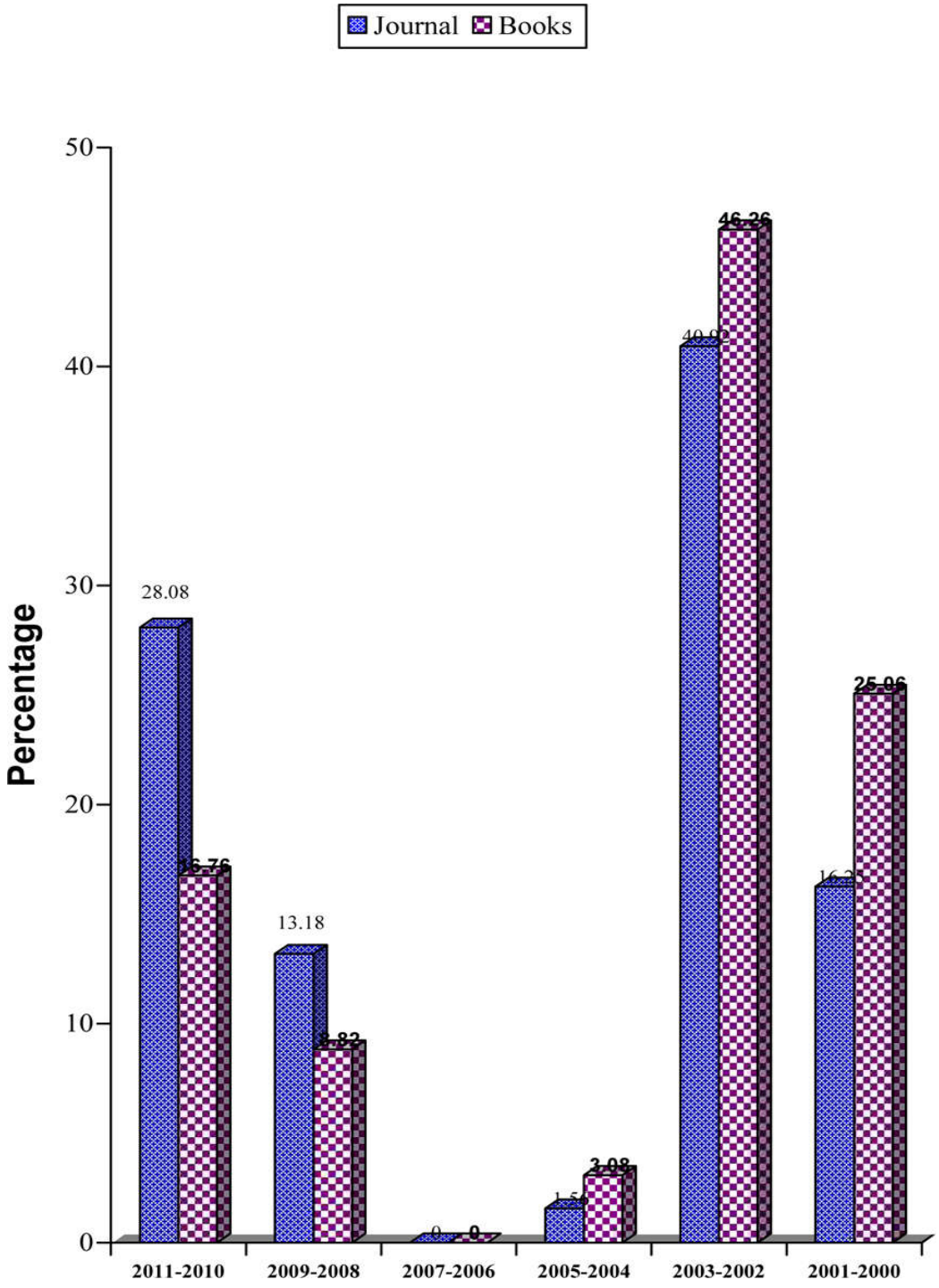

Fig. 3:

Table 4:

S. No.	Journal Name	Citations
1	Foreign Affairs	219
2	Strategies Analysis	74
3	Economic and Political Weekly	72
4	Asian Survey	71
5	The Yale Law Journal	54
6	The Washington Quarterly	53
7	Arms Control Today	37
8	Orbit	37
9	The Bulletin of the Atomic Scientists	37
10	Current History	36
11	International Organization	34
12	Disarmament and Arms Control	32
13	International Security	32
14	Policy Studies Journal	32
15	International Studies	30
16	World Policy Journal	30
17	Central Asian Review	29
18	Tibetan Review	29
19	India Quarterly	28
20	Journal of Financial Economics	26
21	China Report	24
22	Journal of Banking and Finance	24
23	Journal of International Business Studies	24
24	International Affairs	23
25	Indian Journal of Agricultural Economics	22
26	Journal of Parliamentary Information	22
27	Journal of Financial Stability	22
28	Journal of Institute of Public Enterprise	22
29	Journal of International Banking Regulation	21
30	World Focus	21
31	CQ Weekly	20
32	Journal of Hydrology	20
33	Journal of International Economic Law	20
34	Journal of Financial Services Research	20
35	Policy Review	20
36	Journal of Linguistics	19
37	Foreign Policy	18
38	Journal of Latin American Studies	18
39	Journal of IDSA, V	18
40	International Studies Quarterly	17
41	Journal of Emerging Market Finance	17
42	Journal of Finance and Quantitative Analysis	17
43	Journals of International Affairs	17
44	Journal of Constitutional and Parliamentary Studies	16
45	Journal of Conflict Resolution	16
46	Journal of Educational Thought	16
47	Journal of International Relations and Development	16
48	International Migration Review	15
49	Journal of Financial Intermediation	15
50	Journal of Drug Issues	15
51	McGill Law Journal	15
52	Pacific affairs	15
53	Research Journal	15
54	RUSI Journal	15
55	Sri Lanka Economic Journal	15
56	Journal of Democracy	14
57	Journal of Indian Ocean Studies	14
58	Third World Quarterly	14
59	World Development	14
60	International Journal	13
61	Journal of Economic Perspective	13
62	Journal of Educational Studies	13
63	Journal of Financial Management and Analysis	13

64	Journal of Form Economics	13
65	Journal of Intellectual Property Rights	13
66	Journal of International Development	13
67	New England Journal of Medicine	13
68	World Affairs	13
69	Agni	12
70	Asian Affairs	12
71	Indian Journal of International Law	12
72	Journal of Developing Societies	12
73	Journal of Economic Theory	12
74	Journal of Educational Psychology	12
75	Journal of Finance and Development	12
76	Journal of Risk	12
77	Journal of Development and Social Transformation	12
78	Journal of Economic Literature	12
79	Journal of International Money and Finance	12
80	Review of International Studies	12
81	Small War Journal	12
82	Swiss Journal of Economics and Statistics	12
83	The ICFAI University Journal of Bank Management	12
84	American Political Science Review	11
85	Foreign Service Journal	11
86	International Journal of Drug Policy	11
87	Journal of Social Issue	11
88	Journal of Economic Survey	11
89	Journal of Finance	11
90	China Quarterly	10
91	Eurasian studies Indian Journal of Applied Linguistics	10
92	Human Rights Quarterly	10
93	Indian Journal of Public Administration	10
94	International Studies Review, Special Issue	10
95	Journal of Pragmatics	10
96	Journal of Financial Markets	10
97	Journal of Political Research	10
98	Journal of Sothern Africa	10
99	Journal of Geography	10
100	Journal of Institutional of and Theoretical Economics	10
101	Journalism Quarterly	10
102	Michigan Journal of International Law	10
103	Midwest Journal of Political Science	10
104	Nomura Research Institute Quarterly	10
105	Political Science and Politics	10
106	Social Science Quarterly	10
107	South Asia, Special Issue	10
108	The China Quarterly	10
109	The Ceylon Journal of Historical and Social Studies	10
110	The Indian Journal of Public Administration	10
111	The Iranian Journal of International Affairs	10
112	Economic Journal	9
113	Fro Cast Economic Review	9
114	International Review of the Red Cross	9
115	North Caucasus Weekly	9
116	The Journal of Central Asian Studies	9
117	The Journal of Parliamentary Information	9
118	U.S.I. Journal	9
119	Vocational Guidance Quarterly	9
120	World Politics	9
121	American Economic Review	8
122	Amnesty International Report	8
123	Jewish Journal of Sociology	8
124	Muslim World Journal of Human Right	8
125	Pakistan Quarterly	8
126	The Journal of Asian Studies	8
127	The Journal of Contemporary China	8
128	The Quarterly Journal of Economics	8
129	Wall Street Journal	8
130	American Journal of International Low	7

131	Jane's Intelligence Review	7
132	Journal of Political Economy	7
133	Legislative Studies Quarterly	7
134	Political Science Quarterly	7
135	The Alberta Journal of Educational Research	7
136	The British Journal of Politics and International Relation	7
137	The Journal of Commercial Lending	7
138	The Journal of Political Economy	7
139	The Journal of Political Philosophy	7
140	The Political Quarterly	7
141	The RUSI Journal	7
142	Turkish Journal of International Relations	7
143	U K Common Journal	7
144	Annals of Tourism Research	6
145	BIISS Journal	6
146	European Journal of International Studies	6
147	The Journal of Developing Area	6
148	The Journal of Institute of Pubic Enterprises	6
149	The Journal of Strategies Studies	6
150	The Middle East Journal	6
151	Africa Quarterly	5
152	An American Review	5
153	European Journal of International Relations	5
154	IDSA Journal	5
155	International Journal of Middle East Studies	5
156	Journal of Money, Credit and Banking	5
157	Political Quarterly	5
158	South African Journal of International Affairs	5
159	Soviet Sociology : A Journal of Translation	5
160	The American Economic Review	5
161	The Journal of Pure Christi Australia	5
162	Youth and Society	5
163	Annals of the American Academy of Political and Social Science	4
164	Anthropology and Education Quarterly	4
165	Australian Journal of International Affairs	4
166	Ceylon Journal of History and Social Studies	4
167	Denver Journal of International Law & Policy	4
168	Elsevier Journal	4
169	European Journal of Education	4
170	International Studies	4
171	Journal of Peace Studies	4
172	Journal of Asian and African Affairs	4
173	The Journal of Finance	4
174	The Journal of Tourism Studies	4
175	A Survey of the Afghanistan Electrostatic	3
176	Afghanistan and the Taliban	3
177	American Foreign Policy Interest	3
178	American Sociologist Review	3
179	Asian Defense Journal	3
180	Asian Migrant	3
181	Australian Journal of Public Administration	3
182	Cornell International Law Journal	3
183	European Journal of Women's Studies	3
184	Indian Journal of Agricultural Economics	3
185	Indian Quarterly	3
186	International Feminist Journal of Politics	3
187	International Journal of Business and Globalization	3
188	International Journal of Intercultural Relations	3
189	International Journal of Voluntary and Non Profit Organization	3
190	Jane's Defense Weekly	3
191	Journal of Refuge Studies	3
192	Journal of Modern African Studies	3
193	Journal of Monetary Economic	3
194	Journal of Social Psychology	3
195	Journal of Social Studies	3
196	Journal of Soviet Nationalizes	3
197	Journal of Tourism Studies	3

198	Journal of Women's History	3
199	Journal of Agrarian Change	3
200	Journal of Commonwealth and Comparative Politics	3
201	The Administration Avertedly	3
202	The Journal of the Royal Asiatic Society	3
203	A Focus an Afghanistan and Iraq	2
204	Afghanistan Journal	2
205	Africa Today	2
206	African Affairs	2
207	African Journal on Conflict Resolution	2
208	Agricultural Situations in India	2
209	American Educational Research Journal	2
210	American Journal of Education	2
211	American Journal of Political Science	2
212	An Oxford Journal	2
213	Arab Law Quarterly	2
214	British Journal of Middle Eastern Studies	2
215	Canadian Army Journal	2
216	European Journal of International Law	2
217	Indian Journal of Politics	2
218	International and Comparative Law Quarterly	2
219	International Journal of Political Education	2
220	International Journal of Social Psychiatry	2
221	International Journal of Transitional Justice	2
222	International Social Science Journal	2
223	Journal of Peace Research	2
224	Journal of South Asian and Middle East Studies	2
225	Journal of Military and Strategies Studies	2
226	Journal of Social Science Research Network	2
227	Journal of Agricultural Economics	2
228	Journal of Comparative Economics	2
229	Journal of Contemporary History	2
230	Journal of Crime Law and Social Change	2
231	Journal of Development Economic	2
232	Journal of Development Studies	2
233	Quarterly Journal of Economics	2
234	Stanford Journal of International Law	2
235	The Jewish Journal of Sociology	2
236	The Korean Journal of International Studies	2
237	The welfare State and Its Aftermath	2
238	A Contemporary Chorine	1
239	A Decaying Nations	1
240	A Dictionary of Religious Education	1
241	A Frame work for Policy Formulation	1
242	A History of the Soviet and Post Soviet Europe	1
243	A Journal of Translations	1
244	A Political Argument, China Report	1
245	A Review of Minority and Ethnic Studies	1
246	A Russian Journal of World Politics	1
247	A Triangular Interaction Journal	1
248	Aakoroash	1
249	Africa Research Bulletin	1
250	American Journal of Alternative Agriculture	1
251	American Journal of Finance and Accounting	1
252	American Journal of Sociology	1
253	American Psychologist	1
254	British Educational Research Journal	1
255	British Journal of Educational Psychology	1
256	British Journal of Political Science	1
257	Canadian Journal of Economics	1
258	Cato Journal Spring	1
259	Combat Journal	1
260	Economic Bulletin	1
261	European Journal of Operational Research	1
262	European Security Frank Cass Journal	1
263	Indian Journal of Agricultural Economics	1
264	Indian Journal of Agricultural Marketing	1

265	Indian Journal of American Studies	1
266	Indian Journal of Economics	1
267	Indian Journal of Gender Studies	1
268	Indian Journal of Political Science	1
269	Indian Journal of Social Science	1
270	International Journal of Central Banking	1
271	International Journal of Economics and Finance	1
272	International Journal of Health Planning and Management	1
273	International Journal of Industrial Organization	1
274	International Journal of Peace Studies	1
275	International Journal of Refuge	1
276	International Journal of Refugee Law	1
277	International Journal of the Sociology of Language	1
278	Japan Quarterly	1
279	Journal of Multilingual and Multilingual Development	1
280	Journal of Moral Education	1
281	Journal of Political Studies	1
282	Journal of Post Keynesian Economic	1
283	Journal of Slavic Militancy Studies	1
284	Journal of Soil and Water Conservation	1
285	Journal of the Muslim Majlis	1
286	Journal of the Royal Statistical Society	1
287	Journal of the Society of Clerks at the Table in Commonwealth Parliament	1
288	Journal of the United Service Institution of India	1
289	Journal of Travel Research	1
290	Journal of World Politics Diplomacy and International Relations	1
291	Journal of American Studies	1
292	Journal of Arms Control	1
293	Journal of Communist Economy and Economic Transformation	1
294	Journal of Constitutional and Parliamentary Studies	1
295	Journal of Economic Dynamics and Control	1
296	Journal of International Business Studies	1
297	Journal of Research in Mathematical Education	1
298	McKinsey's Quarterly	1
299	Parliamentary Affairs	1
300	Some Theoretical Implication, China Report	1

and observation method.

It is noticed that the research scholars at JNU cited the Journal articles maximum i.e. 2891 (48.78%), followed by books which are recorded as 2529 (42.67%). It is also revealed that internet sources were least used by the RS which is only 40 (0.67%). Apart from these documents the researchers also cited some other documents as well which include conference proceedings 160 (2.69%), Bulletin and Annual Reports 115 (1.94%) and Newspapers and Magazines 150 (2.53%) etc. Date on the Pattern of authorship of the cited documents is given in Table 2. It indicates that the researchers at J.N.U. cited single authored documents 1938 which are (76.63%) more as compared to two authors 427 (16.88%) or multi authored 13 (0.51%) and corporate authored 95 (13.75%) cited paper is more than two third of the total cited paper.

The Period of 2000-2011 for which the citations were made has been divided into 3 columns. The data shows that research scholars have used maximum journals citations during 2002-2003 which is 1183 (40.92%) however the number of Ph.D is also maximum during this period which is 7. The least number of Journals cited during 2004-2005 which is only 45 (1.56%). Similarly during 2002-2003 the maximum number of books are cited by the research scholars i.e. 1170 (46.26%). Whereas research scholars have cited minimum number of books during 2004-2005 which is only 78(3.08%).

Table 4 rank Journal that have been cited by the researchers. These journals have been arranged in descending order of the number of citations. There are 300 Journals which are cited by the researchers. These journals are published from India and abroad. The study shows that journal of Foreign affairs is cited by the maximum number of researchers i.e. 219 (7.57%) Economic and Political weekly comes to next in citation by the researchers which are 72 (2.49%) followed by Asian survey, the Yale Law Journal and the Washington quarterly at third, fourth and fifth position. The Least number of the Journal which are cited only once by the researcher include Journal of Moral education, Parliamentary affairs, Journal of Political studies, Journal of post Keynesion economic, Journal of Slavic Militancy studies, Journal of soil and

water conservation, Journal of Muslim Majlis, Journal of travel research, Journal of International Business studies, Journal of economic dynamics and control etc.

Findings and Conclusion

In the present study 2891 citation were analyzed from 21 Ph.D theses in the field of international studies. On the basis of the above study the following conclusion are drawn:

- Highest numbers of citations (7.57%) were recorded from journals, articles followed by books, book chapters, encyclopedias, reports, etc.
- The analysis of citations indicated that most cited authors in the thesis are foreign authors.
- In the ranked list of journals, foreign affair occupies the first rank accounting of total journal.

During the study it was found that citations are not in standard format. Researchers have not used any uniform pattern/sequence while citing the research materials. It is observed that somewhere year is missing, Somewhere Publisher's name and place. This kind of study will definitely help the libraries in selection of useful sources as there is explosion of information and documents in the form of books and journals. The ranking of journals can be used by librarians and researchers to select the journals of greater importance in a particular subject area.

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Author Rights Awareness among Researchers and Role of Librarians

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Abstract

Copyright is that form of Intellectual Property Right (IPR) that impacts researchers/scholars. Researchers struggle to get expert guidance on questions of ownership of intellectual property in all forms of electronic and print media. In the era of digital publishing, the issue of copyright has gained prominence. The present study aims at finding out the awareness of the concept of 'author rights' among the researchers. It also tries to find the methods used by researchers to retain their rights to scholarly works. The study also intended to know the factors that prevent researchers from modifying the standard publication contracts of the authors. A survey of faculty members and researchers at research institutes in Mumbai was conducted. A structured questionnaire with closed-ended and open-ended questions was used for the study. A stratified random sample was selected from the sampling frame of twenty-seven research institutes in Mumbai. Further, librarians of the institutes were also asked about their involvement in copyright issues. Descriptive Analysis was carried out using SPSS 20.0. The study revealed that the awareness of researchers in the area of author rights is low. The researchers were less concerned about transferring copyright and the ability to do certain actions with their scholarly work. The need to publish was one of the most important factors that prevent the researchers from modifying standard copyright contract. Due to low awareness, the researchers sign the publishers' copyright contract as it is and lose all their rights to their own scholarly writing. This paper also highlights the role librarians play to assist researchers and faculty in understanding and retaining their rights to the scholarly work created.

Keywords: Author Rights; Copyright; Author Addendum; Scholarly Publishing.

Introduction

Intellectual Property Rights (IPR) is a blanket term for a variety of assets created by the mind otherwise classified as intangible property. It includes ways to protect the creative expressions of the intellect that carry commercial and moral value. There are several types of intellectual property including trademarks and patents. Copyright is a legal right created by the law of a country that grants the creator of an original work exclusive right to its use and distribution, usually for a limited time, with the intention of enabling the creator to receive compensation for their intellectual effort. Several efforts at the international level were initiated to look into the copyright laws and their enactment. For example, the Berne Convention in 1886, the Universal Copyright Convention (UCC) 1952 and the Berne and Paris conventions in 1971. Berne and Paris convention recognizes the copyright of authors of all countries who have signed the same and India is one the signatories.

Scholarly communication in the form of published works falls under copyright law. Oxford English Dictionary [1] defines copyright as the exclusive right given by law for a certain term of years to author, composer, designer etc. (or his assignee) to print, publish, and sell copies of his original work.

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Copyright originates with the author or creator with rare exceptions unless the author/creator decides to transfer the rights to someone else. Authors hold copyright under the various laws which apply to the country of their work. Broadly copyright allows the author to reproduce the work, to distribute the work, to publicly perform or display work or to prepare derivative works. It further depends on the author whether he/she assigns all of these rights, some of them or none of them to a publisher who then determines how the work is used by the author himself/herself. The author might want to retain rights so that it can be used to post work on the website, to distribute copies to colleagues, to reuse portions of the work or all of it in future publications, or to add to the institutional repository. Sometimes publishers want authors to assign the copyright to them in exchange for publishing the work. The decision to assign copyright is serious and has manifold implications for the academic researchers. Authors are typically asked to sign legally binding contracts such as a publication agreement or a copyright transfer agreement usually transferring ownership of the copyright to the publisher who then determines how one may use the same work.

With the options of various formats of digital publishing coupled with the pressures of the research community to be visible, researchers are becoming increasingly concerned about copyright issues, trying to retain author rights and negotiating copyright agreements with publishers. Scholars who sign away all rights have to request permission (often with a fee) to place their own articles on a personal website, in a course pack for a class they are teaching themselves, in a public online archive or an institutional repository, to distribute copies to class or to colleagues, include sections article in later works or include it in an anthology.

Morrison(2009)[2] states that it is not at all necessary to transfer the complete set of rights. Scholars can unbundle the rights within the copyright bundle and transfer only some of them to publishers. There are ways in which scholars can retain their rights if the publisher's standard agreement does not give the control. Some publishers follow a particular policy and accordingly allow the author to retain certain rights or takes over all the rights. The policies of these publisher can be found on the SHERPA/RoMEO website. It provides information about the copyright policies, open access, and self-archiving policies of publishers. It is useful for authors to know, before or after signing a copyright agreement, what rights he or she will be able to retain.

Many organizations, universities, and institutions have encouraged authors to manage their copyrights. Maintaining some rights may be to the benefit of the author and the institution. Until recently, the primary method that authors could use to retain some rights in their writings was to rewrite the contract with the publishers themselves. With the development of digital scholarship and awareness created worldwide by various research councils many organizations developed standardized 'Author Addenda'. An author's addendum is a standardized legal instrument that modifies the publisher's agreement and allows the author to keep key rights. Massachusetts Institute of Technology (MIT), Science Commons (through its Scholar's Copyright project), and Scholarly Publishing and Academic Resources Coalition (SPARC) – have worked with lawyers to develop self-sufficient addenda that address these issues. These addenda can be attached to the publishing contracts received by publishers and are likely to be legally binding. Awareness on author rights is created within the institution research cells and libraries. Faculty who have used author addenda and managed to retain their rights also advice other faculty and researchers Literature has highlighted that the awareness about the author right issue is low and hence various stakeholders in the research community and the institutions must gear up to create and spread the awareness.

Given the changes in the scholarly publishing arena and the need to create awareness and protect the scholarly work of the researchers, the libraries need to play a pivotal role in this area. It is necessary for librarians to gauge the awareness of their researchers and accordingly draw a plan to assist the researcher to retain their author rights.

Literature Review

Copyright is a complex issue. A lot of literature has been published about copyright and its interpretation and application in the academic settings. Several studies have been published in the academic library context. Copyright and related intellectual property laws are "woven into the fabric of academic culture" and thus have a substantial impact on the nature of services that academic libraries provide to their user communities (Horava, 2010, p. 4) [3].

(Aswath, 2012) [4] emphasized the significance of copyright laws in the academic environment.Most of the studies concentrate on University /campus-based copyright issues. Very few studies have dealt with

area of awareness of faculty on issues of copyright. A study of faculty on two academic health science campuses in the U.S. found that faculty had limited knowledge of copyright laws (Smith et al., 2006) [5].

Since the awareness of the faculty was generally found to be low in areas of copyright organization like the Association of College and Research Libraries (ACRL) has taken lead in this area. It provides context for accelerating the awareness of copyright and scholarly communication issues in the academic setting (Davis-Kahl & Hensley, 2013) [6]. Given the wide-ranging changes in scholarship, the report on 'Common ground for Nexus of Scholarly Communication and Information Literacy' states that academic librarians must add knowledge of copyright law and other intellectual property issues to their "current repertoire of literacies" in order to provide guidance to their users (Davis-Kahl & Hensley, 2013, p. viii).

Intellectual property and copyright have long been areas in which librarians are involved. At a local level, ensuring compliance with copyright law has been the traditional role and assisting authors with retaining their rights is the emerging role. (Morrison, Heather 2009)

Albitz (2013) [7] further states as the importance of copyright education grows, it is critical to ensure that "the people assigned this responsibility to have the resources and support to perform their responsibilities in the most effective and efficient way possible" (p. 435).

A study by Olaka and Adkins (2012) [8] found that academic librarians in Kenya were "only moderately knowledgeable about copyright issues" (p. 46). Olaka and Adkins (2012) concluded it was imperative to increase academic librarians' knowledge of copyright laws. Similar findings were reported in the United Kingdom in which respondents from academic libraries felt they needed more training in copyright matters (Oppenheim & Woodward, 2004) [9].

(Gasaway, 2003) [10] stated the Library associations have been involved in the issue of copyright and have suggested alternative scholarly communication models, that will provide greater control by faculty authors, while at the same time ease some of the strains on library budgets caused by rapidly escalating journal prices. Several research coalitions, academic libraries are creating awareness on the issue of author rights and are also helping librarians remain updated in these areas. Scholarly Publishing and Resources Coalition (SPARC) has released guidelines for authors and librarians in this area. It has also devised an Author Addendum which will help the researchers negotiate the standard publisher's norms and retain rights to scholarly work. Massachusetts Institute of Technology has developed Author Addenda Addenda for their faculty and researchers to protect their author rights.

Morrison (2009) pointed out that publishers' agreement was in a time of transition. A license to publish may leave the author with more rights than a standard copyright agreement, but there is no guarantee, so it is a good idea to read the fine print. Publishers are also in the time of transition with respect to self-archiving policies. There are many publishers who are willing to negotiate the publishing agreement. Librarians should help researchers determine what terms of the agreement are amenable to them and which are not and then negotiate for the terms which they will be able to abide by. Researchers should be made aware that rather than assigning copyright to the publisher, granting them an exclusive or non-exclusive license to publish is beneficial. An exclusive license is when the copyright holder grants to the publisher sole permission for using the work for a certain period of time. A non-exclusive license is when the copyright holder allows multiple people to use the work. Examples of non-exclusive licenses are the Creative Commons licenses. Librarians need to create awareness on various forms of Creative Commons licenses too.

Several organizations and universities like Scholarly Commons, MIT, Harvard etc are helping researchers retain their rights with the help of addendums.

In the Indian context, there are scanty studies on issues of copyright. Nikose [11] talks about the awareness of the copyright in western India's universities. The results of the study show a high level of awareness among faculty and researchers about the Indian Copyright Act 1957.

Specific studies on author rights in the Indian context were not found. As the landscape of information is getting complex the need for clarity on issues of author rights remains important in the evolving the scholarly communication process.

Objectives

The objective of the study is to know the awareness of the researchers and to emphasize the importance of this law that protects works of authorship. It does not delve into the intricacies of the copyright laws but concentrates on the Author rights and identifies

areas in which librarians can contribute to create awareness and assist faculty in retaining the rights.

Following objectives were formulated for the study.

1. To find out the awareness of the author rights and related issues amongst researchers of research institutes in Mumbai
2. To know what methods the researchers have adopted to retain author rights
3. To identify factors that prevent researchers from negotiating for retaining the author rights
4. To find out whether research libraries in Mumbai are playing active role in creating awareness about the copyright and IPR issues

Methodology

This study is a part of the larger study on scholarly communication and the role of libraries. The study surveyed researchers (faculty, scientists, and research scholars) of research institutes in Mumbai. The sampling frame consisted of twenty-seven research institutes of Mumbai covering different disciplines viz Arts and Humanities, Engineering Sciences Life science, Physical sciences and Social Sciences. Faculty members with a Ph.D Degree and research scholars who were into research for at least 3 years were considered for the study

Stratified random sampling was used get responses from the faculty/ researchers. 582 faculty and research scholars were contacted and 263(45%) responded. Librarians were also asked about their involvement and initiatives in creating awareness or advising researchers on copyright issues.

The survey method with a structured questionnaire was used to gather data. The questionnaire included both closed and open-ended questions. The questionnaire was also made available on Survey monkey platform. Participants were asked to voluntarily participate in the study by clicking on a web link included in the email message that directed participants to the web-based survey. A follow-up reminder about the survey was sent to the participants. Descriptive statistics were followed using SPSS 20.0

Table 1:

Designation	Total Contacted	No of Respondents	Percentage
Professors	88	41	46.5%
Associate Professors	115	56	48.6%
Assistant Professors	65	32	49%
Scientists	76	35	42%
Research Scholars	203	83	40%
Others	35	16	46%
Total	**582**	**263**	**45%**

Profile of the Respondents

Table 2: Respondents By Disciplinary Grouping

Subject Disciplines	Frequency	Percent
Arts and Humanities	12	4.6
Life Sciences	72	27.4
Engineering Sciences	57	20.9
Physical Sciences	45	16.0
Social Sciences	60	21.7
Any Other	17	9.5
Total	263	100%

Table 3: Institutional Publishing Policy

Answer Options	Response Count	Response Percent
Yes	95	37.5%
No	168	62.5%
Total Responses	263	100%

Data Analysis and Findings

A series of questions were posed to respondents to find the opinions and awareness on issues about author rights.

1. Researchers were asked if their institute had any publishing policy which guided their choice and method of publishing. Institutional publishing policy addresses issues like where to publish, what rights have to be retained, embargo periods so that the researchers have guidelines for publications.

   As seen from Table 3 most of the research institutes do not have a publishing policy. The details provided by the respondents about the publishing policy are summarized below

- Many researchers expressed unawareness.
- Some mentioned having an internal Publications unit, and mandatory clearance of the same.
- Some researchers reported that publication charges if any are borne by the Institute including Article Processing Charges of Open Access publications
- Procedures of parent bodies (ICAR, DAE) need to be followed.
- Discourages paid publications (IIT and TIFR)
- Publish after checking from anti-plagiarism software and considering impact factor of journals

2. Researchers were asked about their concerns over the transferring copyright and the ability to do certain actions with their scholarly work like putting on website/institutional repository, use in class and make course packs create derivative based the published work.(submit article to an anthology).

   Table 4 shows various dimensions of the author rights to which the researchers have shown moderate concern. On an average 73% of the researchers were 'somewhat concerned' and "not concerned' There was very less concern among the researchers regarding all the author rights on the whole.

Table 4: Concern over Transferring Copyright

Answer Options	Not concerned	Somewhat Concerned	Very Concerned	Response Count
1.Put the materials on a website or in an institutional repository	48	141	74	263
2.Use the materials in a class that you or others are teaching without asking for permission from the publisher	55	135	73	263
3.Make the materials available for course packs without asking for permission from the publisher	45	141	77	263
4.Use or submit the materials to an anthology	51	157	55	263
5.Create a derivative work based on the material	46	142	72	263
Total responses				**263**

Table 5: Reading the Copyright Policy before Signing

Answer Options	Response Count	Response Percent
Yes	188	73%
No	75	17%
Total Responses	263	100%

Table 6: Ways to Handle Copyright Contract

Answer Options	Response Count	Response Percent
1.Examine the copyright terms of the contract and usually sign it as is	162	86%
2.Get the copyright terms modified of the contract before signing	19	10%
Any Other (please specify)***	7	4%
Total Responses	188	100%

Table 7: Actions Taken By Researchers to Modify Copyright Policies

Answer Options	Response Count	Response Percent
1.Replaced publisher's contractual terms required terms	16	43.2%
2.Attached an addendum	19	56.8%

3. Researchers were asked if they read the copyright policy of the publishers before submitting the work to know how the terms mattered to them.

   Only a small proportion of researchers denied reading the copyright policy of the publisher before signing. Out of them most of the researchers (73%) answered that they read the copyright policies before signing them.

4. Researchers who confirmed that they had read the copyright policy were further asked the ways in which they handle the copyright contracts after reading them

   As seen Table 5 though most of the respondents read copyright terms (73%), the majority of them (86%) sign them as it is. (Table 6) Only a handful of respondents (n=19, 10%) get the copyright modified.

   Some researchers had selected option 'Any other'. Their responses are presented below:

- I choose only those publishers whose conditions are acceptable to me
- We mostly publish in standard reputed journals whose copyright terms are known. These terms are not changed so often. So there is no need to check these terms every time before we submit a paper to the same journal.
- I do not pay attention to such things.....we pay attention to science in the paper.....we trust each other I guess...!
- Depends on the audience and reach of the journal
- No idea about point modification of terms of publishers
- Awareness of this aspect is yet not known
- Some of the researchers expressed unawareness on this issue, while others said that they publish in reputed journals where there was no scope for modification

5. The respondents who had modified the copyright terms were asked what methods they had adapted to modify the copyright terms. Their answers are presented in Table 7.

   Researchers modified the terms of the contract by either replacing contractual terms or attached an addendum as and when required though attaching the addendum was common method used by the researchers

6. Researchers were also asked if they had refused to sign a publication contract because of the concern of existing laws and therefore had to forego their opportunity to publish in that journal.

Table 8: Instances of Refusal Due to Concerns of Copyright

Answer Options	Response Percent	Response Count
YES	5.4%	14
NO	71.2%	188
Not Applicable	23.5%	61
Please provide details, if possible:	-	9
Total responses	-	263

Table 9: Factors Important to get Copyright Contract modified

	N	Mean	Std. Deviation
1 Need Precise Instructions and examples of how to do it	263	2.37	.610
2 Awareness of the option refuse signing Standard Contract and still get benefit of Publishing	263	2.29	.823
3 Agency which can do it for me	263	1.29	.617

Table 10: Factors that Prevent from Modifying Standard Copyright Contract

Options	Frequency	Percent
1 Need to publish in the journal to get merit increase/promotion	120	46
2 No knowledge to negotiate	91	35
3. It is too much trouble to negotiate with the publisher	52	19
Total	263	100.0

Table 11: Libraries having IPR advice as service

Service	Yes	No	Going to Introduce Soon	Total
Intellectual Property Rights related Advice (Copyright and other matters)	8	11	2	21

Table 12: Libraries having staff specially trained in Copyright/IPR issues

Training to Staff on IPR/Copyright	Yes	No	Going to Introduce Soon	Total
Staff with Special Training on Copyright and IPR issues	2	18	1	21

Only fourteen respondents responded that they refused to sign the standard copyright contract with the publishers.

The details provided by some the researchers are given below:

- So far this situation has not arisen. Sometimes the publication becomes the need of the hour for personal or institutional requirements.
- When the changes after OA were not yet widely accepted by publishers, I retracted my paper and submitted to other Publisher .
- I send my papers only to those journals whose policies I am comfortable working with.
- There were instances wherein publisher will not give reprint & will change in case needed. It is a seminal work. I thought of foregoing with it.
- I do not want to pay the unnecessary huge amount to publish any of my work.
- Our research did not involve a case for retaining copyright terms or possible patent generations. · We could do so or withdraw publications from that journal and send it some other.

7. Researchers were asked to rank factors that they opined were important to get contract terms modified. They were asked to rank awareness, need of precise instructions and agency to it from 1-3.

   The Table 9 clearly indicates that faculty need help and precise instructions to help in retaining copyright, while many of them also agreed that there was unawareness about refusing to sign the standard copyright contract but still being able to get the benefit of publishing.

8. Researchers were asked about the issues which prevented them from negotiating with publishers in spite of preference they had about retaining the author rights.

   Researchers who did not modify the terms of the publishers reported that most important deterrents were the need to publish for promotions followed by lack of knowledge to negotiate. The researchers also found it troublesome to negotiate with the publishers.

   From the opinions given by researchers it was very clear that negotiating with the publishers for their rights over the scholarly content created by them was impeded by their lack knowledge in this area of negotiation.

9. To get better understanding on the issues of copyright awareness and the role of librarians, the librarians of research institutes were further asked about their involvement in the IPR and copyright issues.

   As seen from Table 11 only 40% of the Libraries have IPR related advice service. These are larger (with more than 100 researchers) research institutes/university in Mumbai.

10. Libraries were also asked if they had any specialized staff who had special training on copyright and IPR issues Only 2 libraries mentioned about having specialized staff trained on copyright or IPR issues.

Findings and Discussion

Copyright law is complex and ambiguous. It poses many challenges like licensing and Digital Rights Management for the researchers, but it is crucial that researchers have a basic understanding of the various provisions of the law in order to make informed decisions about the rights to their own work. This task is quite challenging and demanding for the researchers.

Following are the major findings of the study:

1. There is a lack of Institutional Publishing policy in the research institutes surveyed.
2. The researchers were less concerned about transferring copyright and the ability further use their scholarly work like putting on website/ institutional repository, use in class and make course packs create derivative based the published work.
3. Researchers read the copyright contracts and the majority of them sign it as it is due to lack of awareness of the issue.
4. Very few researchers modify the copyright contract and use methods like modifying the publisher's terms and attaching the addenda.

5. Lack of awareness is among researchers is the major reasons for not negotiating with the publishers.
6. Researchers also need precise instructions and examples to retain copyright.
7. The need to publish is one of the most important factor that prevents the researchers from modifying standard copyright contract.
8. 40% libraries provided advice on IPR issues.
9. Only two libraries had specialized staff trained for copyright and IPR .

Librarians need to step up in this area and create awareness among researchers enabling them with the concept of author rights, the implications of a complete copyright transfer, the benefits of retaining them and ways to do so and assist the faculty/ researchers to retain their rights as creators of scholarly work.

As seen from the above results, the researchers' awareness of author right issues is low hence librarians should create awareness among researchers and take a lead to facilitate the following actions like

- Promote thinking of the possible future use of scholarly work.
- Facilitate the understanding of limitations imposed by contract of the publishers.
- Help researchers find which publishers have the best agreements for their needs.
- Assist researchers to investigate which publishers policies match goals as a scholar using the SHERPA/ROMEO.
- Support to negotiate for author rights.
- Guide to using/writing an addendum to the publishers' contract.

Researchers need to know the whole cycle of scholarly communication, and issues such as copyright, author rights, use and reuse of digital information objects, etc., need to be more fully integrated. A primer on author rights can be made to facilitate the author rights awareness. Issues like author rights are areas of strategic realignment for librarians in order for libraries to be resilient in the face of tremendous change in the scholarly information environment.

Summary

The area of copyright is an area of intersection between scholarly communication and information literacy. Librarians need to take lead in this area and assist the faculty. It is essential that librarians of research organizations and universities are well equipped with adequate knowledge on these issues. Librarians can provide some guidance, but not legal advice. Librarians need to improve the awareness in their respective institutions. Researchers need to be aware "that is not all or nothing" implying that they had still held some rights to their work along with getting the benefit of publishing in reputed journals.

Librarians can remain relevant in the changing landscape by taking over specialized areas like copyright where the researchers struggle. This will help researchers navigate the changing scholarly communication and contribute to the knowledge domain.

Librarians should facilitate the researchers to protect the private right of the creators to stimulate the creation of new works and at the same time encourage a wide dissemination of creative works to advance the scholarly communication life cycle. Librarians should take leadership roles in the dynamic digital environment of contemporary scholarship and improve the current scholarly communication ecosystem.

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Gauging Usage of E-Journals Database of American Chemical Society at Guru Jambheshwar University of Science & Technology, Hisar

Vinod Kumar

Abstract

The research is one of the prime purpose of any university / Institute of higher learning. The journals are the primary source of information for any academic research and results thusreportedin journals become the ingredient for further research. These information resources have become more valuable with the emergence of electronic journals and quality research without electronic journals hardly has any existence. The INFLIBNET under its e-ShodhSindhu project has provided the access of electronic resources from 19 publishers to Guru Jambheshwar University of Science & Technology (GJUST) Hisar. The present study is carried out with the objective to know and compare the month-wise usage of American Chemical Society database during the period of 2011 to 2016. The study reports that the yearlyhighest and lowest use whereas month-wise highest and lowest use of database is also reported. Study reveals that ´ Journal of Medicinal Chemistry' is most used Journal of the database and its usage stands 1st in all the years except 2016. Study highlights all such journals out of which more than 100 articles have been retrieved annually. Some suggestions have been reported to enhance the use of electronic journals.

Keywords: Electronic Journals; eShodhSindhu; American Chemical Society.

Introduction

Guru Jambheshwar University of Science & Technology, Hisar is a State Technical University of Haryana came in to existence on October 20, 1995. The National Assessment and Accreditation Council (NAAC) has accredited the University 3rdtime with 'A' grade. The NAAC has also endorsed UGC-Human Resource Centre of the University as No. 1 in the Country. The National Institute Ranking Framework (NIRF) also accredited 24th rank among the Universities/Institutes in India. The faculty of the university has published more than 2000 papers in various peer reviewed journals of national and international repute since 2009-10. Out of these publications, 1637 publications are listed on Scopus with about 19000 citations. As per Scopus database, the H-Index of the faculty ismore than 60, while the Impact Factor of the papers is more than 34.

The American Chemical Society database of e-journals is actually used by the researchers of the departments of Chemistry, Bio and Nanotechnology, Food Engineering, Environmental Sciences & Engineering, Printing Technology, Pharmaceutical Sciences etc. and is considered very important database.

Review of Literature

Since last two decades, many studies have been made to gauge the usage level and usage pattern of electronic journals by the scholars in universities. Some of relevant studies have been discussed as under:

Log studies have been particularly helpful in understanding the searching and browsing behaviour of e-journals' users (Jamali, Nicholas, and Huntington, 2005).

The COUNTER Journal Report 1 has been used in a UK study of online usage ofjournals from several

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publishers by a number of university library customers.Shepherd (2006).

Shearer, Klatt and Nagy (2009) carried out a study of electronic journal usage data and analysed the journals used as 0-24 times, 25-49 times, 50 to 99 times, 100-199 times and 200+ times.

Suseela, V.J., (2011) remarked that the latest method to measure the usefulness of journals is the use of log files which are referred to as usage statistics or usage reports. These analysed usage statistics can support in the complex decision making activity of serials management in university libraries.

Chowdhury (2012) analyzed the usage trend of e-journals in Independent University, Bangladesh (IUB) and observed that use of Emerald database is more rational as compared to other three databases. He highlighted the list of 25 journals each of Oxford University Press, JSTOR, ABI/Inform and Emerald databases. It is further stressed that more consortia may be formed for exploring more electronic resources at an affordable price and higher education libraries, at least, will then find more users.

Moorthy and Pant (2012) observed that the download statistics and its usage analysis has shown that the scientists of DRDO is utilizing the resources in a positive way and in some cases, where usage of e-journals is low, training programmes are conducted from time to time. To analyze the usability of DRDO E-journals Consortium, the usage statistics for the period from 2009 to 2011 was collected for all the DRDO Labs from the websites of 8 publishers. They further stated that each library of DRDO labs has accessibility of DESIDOC resources through a well and dedicated intranet. DRDO e-journals Consortium has strengthened the resource sharing and provided information on 24X7 bases with improved quality and quantity.

Tripathi and Jeevan (2013) highlighted the importance of qualitative and quantitative analysis of the usage of e-resources in academic libraries.The decision for the subscription or cancellation for the already subscribed journals has to be taken very cautiously. To take the right decision, library authorities may consider usage statistics.The number of full-text downloads could be considered as the most useful statistic forassessing the use of electronic resources as it justifies the significance of a particular Journal.

Tripathi and Kumar (2014) have the views that the quantitative analysis of numbersof downloads of e-resources from databases at JNU reflects continuous increase innumber of downloads across all the databases during the period of the investigation.Use of databases has improved gradually with every passing year. This may beattributed to the training, orientation programme conducted by the library.

Objectives

This study is basically concerned to study the usage pattern of electronic journals published by American Chemical Society. The study may help the decision makers of the university to ponder the use and reputation of journals. The objectives of the study are:-

- To know and compare the month-wise usage of American Chemical Society database during the period of 2011 to 2016.
- To know the journals out of which more than 100 articles have been retrieved per annum.
- To find out the journals out of which more than 100 articles have been retrieved annually in all the six years.
- To give possible suggestions, if required.

Methodology

The present study is carried out by taking the month-wise downloaded data for the year 2016. The data has been obtained from the eShodhSindhu Consortium.The data has been sorted and presented in tabulated form and also presented graphically.

American Chemical Society

The period and number of journals in the database is observed as under:-

Year	American Chemical Society
2011	45
2012	46
2013	49
2014	50
2015	52
2016	54

The access of electronic journals from American Chemical Society is provided to Guru Jambheshwar University by the INFLIBNET Centre, Ahmedabad. The month-wise details of downloaded article during the sixyears i.e. 2011 to 2016 have been shown in Fig. 1 and Table 1.

Table 1: Month-wise Usage of ACS during Six Years

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Avg.	Total
2016	385	192	370	439	258	253	521	501	456	344	410	434	380	4563
2015	244	815	465	545	537	279	544	591	631	484	202	237	465	5574
2014	278	197	262	254	273	229	314	261	363	178	338	311	272	3258
2013	262	175	258	342	400	216	578	586	400	255	182	396	338	4050
2012	721	600	462	319	404	455	675	465	287	335	306	296	444	5325
2011	301	1249	423	420	691	258	984	845	622	214	254	671	578	6932
Total	2191	3228	2240	2319	2563	1690	3616	3249	2759	1810	1692	2345	2475	29702
Avg.	365	538	373	387	427	282	603	542	460	302	282	391	413	4950

Table 2: Month-wise retrieval more than 100 articles (2011)

Journal	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Journal of Medicinal Chemistry	22	233	28	32	111	15	466	353	169	37	76	208	1750
The Journal of Organic Chemistry	49	265	12	12	98	29	81	121	66	26	20	87	866
Journal of Agricultural and Food Chemistry	40	107	142	114	40	40	79	35	27	11	21	24	680
Journal of the American Chemical Society	28	121	26	39	84	28	42	120	70	12	22	47	639
Chemical Reviews	15	51	21	27	10	4	34	38	55	25	5	34	319
Organic Letters	20	60	7	5	47	2	43	14	21	7	6	35	267
The Journal of Physical Chemistry B	15	13	18	43	69	5	15	12	2	4	8	7	211
Analytical Chemistry	7	26	10	16	28	5	24	16	8	3	2	13	158
Biochemistry	3	77	1	3	9	0	20	10	4	1	6	5	139
The Journal of Physical Chemistry C	11	4	7	8	27	11	11	16	4	15	8	12	134
Macromolecules	5	13	16	3	4	15	2	3	34	12	1	15	123
Langmuir	14	6	18	15	12	13	6	3	7	3	5	14	116
Inorganic Chemistry	2	38	2	1	8	0	16	20	9	8	2	9	115
Chemistry of Materials	14	15	4	4	16	3	8	4	11	12	15	7	113
Environmental Science & Technology	2	0	13	2	19	26	15	3	19	0	4	9	112
ACS Combinatorial Science	4	34	3	1	7	0	12	11	5	3	1	26	107
Total	251	**1063**	328	325	589	196	874	779	511	***179***	202	552	5849

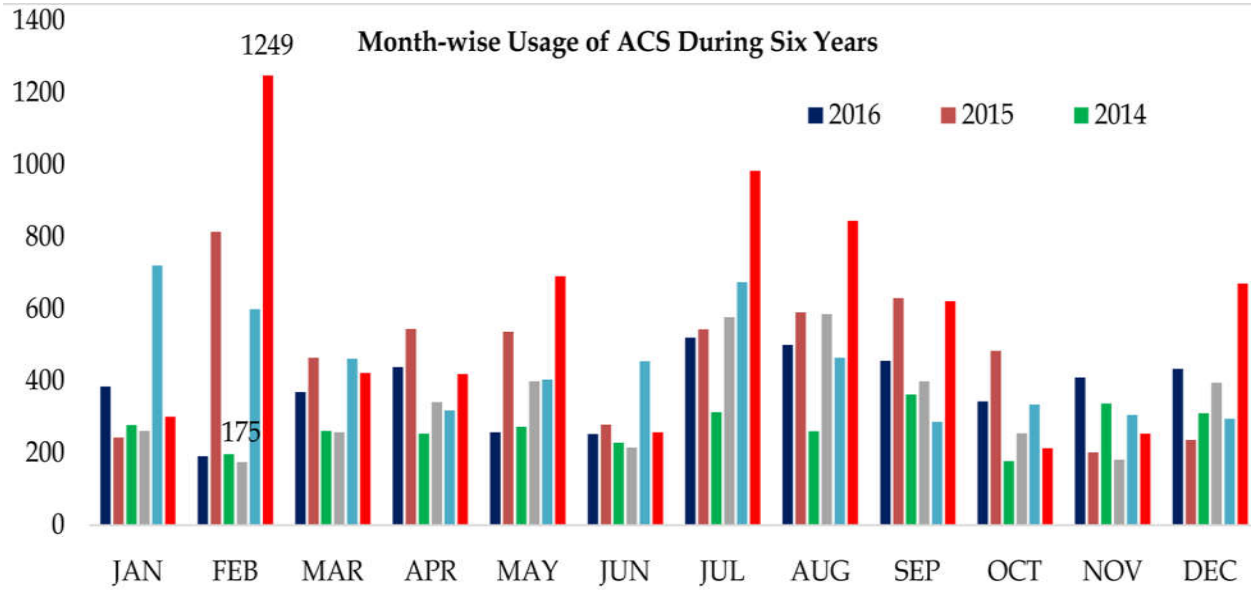


Fig. 1:

Fig. 2:

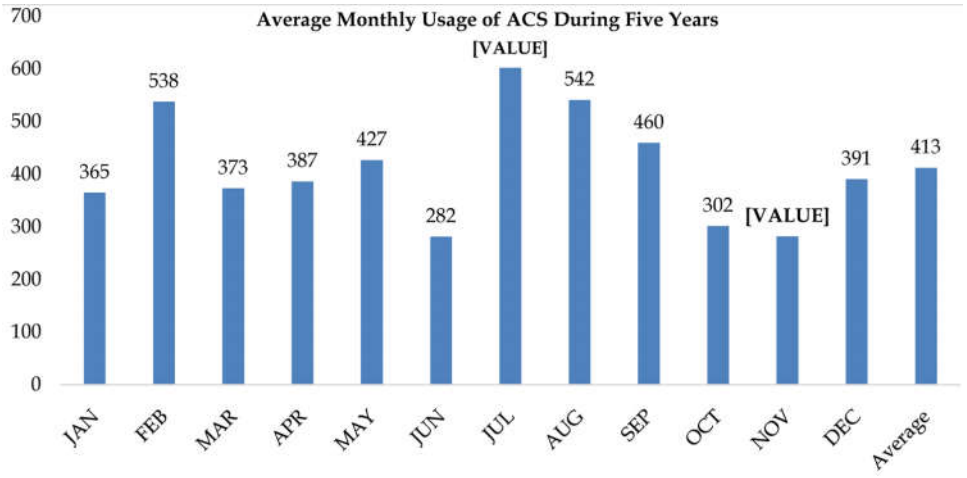
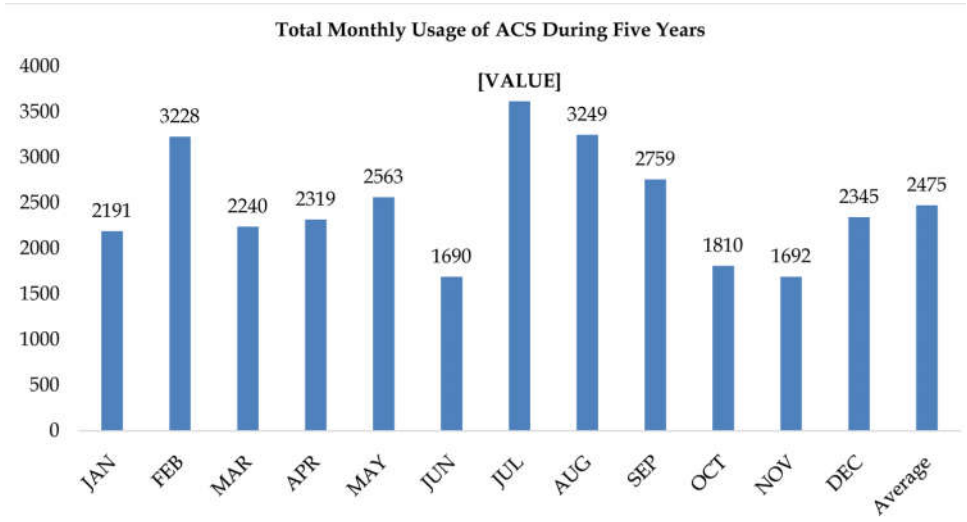


Fig. 3:



It has been shown in table 1 that total 29702 articles have been retrieved by the researchers of GJUST, Hisar from the database of American Chemical Society during the last 6 years. Highest number of 6932 and lowest number of 3258 articles have been observed in the years of 2011 and 2014 respectively against the average of 4950 articles per year. It is further observed that highest number of 3616 and lowest number of 1690 articles have been downloaded during the months of July and June respectively against the overall average of 2475 articles per month. In a particular month, highest 1249 and lowest 175 articles have been observed in the month of February 2011 and February 2013 respectively. The highest use of the database has been observed in the year 2011 whereas the lowest use in the year 2014.

Monthly average usage of ACS observed during the last six years have been shown in figure 2 where highest average of 603 and lowest average of 282 articles have been perceived in the month of July and June& November respectively against the overall monthly average of 413 articles. Monthly average has observed more than 600 articles only in the month of July and. 282 articles i.e. less than 300 in the months of June and November.

Figure 3 has presented the total monthly usage of ACS during the six years. The highest 3616 and lowest 1690 total monthly articles have been perceived in the months of July and June respectively against the overall monthly total average of 2475 articles. Monthly average of more than 3000 articles have been observed in three months namely July, August and February whereas less than total 2000 articles per month have been observed in three months i.e. June (1690), November (1692) and October (1810). Monthly average in rest of six months have been observed in the range of 2000 to 3000 articles.

It is shown in Table 2 that during the year 2011, there are 16 such journals where more than 100 articles have been retrieved and annual total retrievals

from these journals is 5849 articles.Highest number of 1750 articles have been retrieved from 'Journal of Medicinal Chemistry' followed by 'The Journal of Organic Chemistry' (866 articles) and 'Journal of Agricultural and Food Chemistry' (680articles) respectively. While observing the month-wise usage, it is found that highest (1063) and lowest (179) number of articles have been retrieved during the months of February and October respectively. It is further observed that from a particular journal, highest number of 466 articles have been retrieved from 'Journal of Medicinal Chemistry' in the month of July. During the year 2011, total 6932 articles have been retrieved out from 45 journals out of which 5849 articles have been retrieved only from 16 journals.

It has been observed from Table 3 that only 4192 articles have been retrieved from 12 such journals where more than 100 articles have been retrieved annually in the year 2012. Highest 551 articles have been observed in the month of January followed by 514 articles in the month of July. Less than 500 articles have been observed in the rest of the months and

Table 3: Month-wise retrieval more than 100 articles (2012)

Journal	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Journal of Medicinal Chemistry	178	70	42	35	53	77	215	111	54	25	32	58	950
The Journal of Organic Chemistry	84	42	66	67	60	37	67	57	63	70	63	62	738
Journal of Agricultural and Food Chemistry	101	162	48	44	38	34	52	33	19	43	4	36	614
Journal of the American Chemical Society	69	48	67	62	41	67	44	57	36	42	50	23	606
Analytical Chemistry	21	14	23	3	18	74	24	12	9	9	13	1	221
Organic Letters	20	10	13	20	8	9	19	20	10	8	45	8	190
Chemical Reviews	14	23	13	11	10	15	19	18	12	11	19	5	170
Chemistry of Materials	13	28	26	7	15	20	10	14	1	23	3	5	165
The Journal of Physical Chemistry C	9	35	25	4	11	25	12	7	8	12	2	11	161
The Journal of Physical Chemistry B	21	23	25	6	12	8	10	16	5	16	1	5	148
Langmuir	19	6	3	6	22	9	8	6	6	10	4	28	127
Bio-macromolecules	2	29	3	2	4		34	10	1	7	5	5	102
Total	551	490	354	267	292	375	514	361	***224***	276	241	247	4192

Table 4: Month-wise retrieval more than 100 articles (2013)

Journal	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Journal of Medicinal Chemistry	18	11	65	37	89	17	228	202	42	55	30	149	943
The Journal of Organic Chemistry	27	18	47	80	25	31	45	55	46	26	8	41	449
Journal of the American Chemical Society	39	21	18	59	40	18	36	67	51	31	14	22	416
Journal of Agricultural and Food Chemistry	39	25	38	14	24	23	52	35	42	23	57	30	402
Organic Letters	20	18	3	49	19	27	7	14	12	15	2	18	204
Langmuir	3	12	13	0	8	1	20	17	12	15	11	30	142
Inorganic Chemistry	4	4	9	18	44	10	11	10	11	10	3	6	140
Chemical Reviews	9	3	6	12	13	4	16	21	23	9	10	5	131
Total	159	***112***	199	269	262	131	**415**	421	239	184	135	301	2827

Table 5: Month-wise retrieval more than 100 articles (2014)

Journal	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Journal of Medicinal Chemistry	81	27	13	28	65	19	57	28	40	27	87	75	547
Journal of Agricultural and Food Chemistry	41	17	25	34	30	20	36	101	50	11	26	26	417
Journal of the American Chemical Society	29	35	30	20	32	18	6	12	37	4	40	27	290
The Journal of Organic Chemistry	17	32	23	23	10	31	28	20	22	14	26	34	280
Organic Letters	12	23	21	2	11	35	8	5	7	4	14	19	161
Chemical Reviews	15	5	16	24	16	6	6	5	12	2	30	13	150
Langmuir	4	1	47	3	13	6	5	1	23	4	6	7	120
Chemistry of Materials	7	0	3	11	5	3	6	11	34	6	7	18	111
Total	206	140	178	145	182	138	152	183	225	**72**	**236**	219	2076

Table 6: Month-wise retrieval more than 100 articles (2015)

Journal	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Journal of Medicinal Chemistry	32	**326**	127	71	51	23	125	119	34	20	6	10	944
Journal of Agricultural and Food Chemistry	47	51	50	80	45	36	42	54	54	44	12	17	532
The Journal of Organic Chemistry	23	75	33	86	87	21	55	38	29	25	20	14	506
Journal of the American Chemical Society	22	57	36	43	50	13	31	51	46	55	26	22	452
Chemical Reviews	6	19	39	27	91	23	25	54	38	81	6	20	429
Organic Letters	7	13	17	31	23	28	8	21	18	22	20	7	215
Analytical Chemistry	8	5	8	13	30	25	15	22	18	26	24	8	202
ACS Applied Materials & Interfaces	5	9	15	6	8	5	17	16	45	32	0	20	178
Langmuir	8	6	11	5	10	7	24	21	34	20	5	5	156
Industrial & Engineering Chemistry Research	5	9	6	6	7	7	13	8	47	17	10	8	143
Inorganic Chemistry	5	26	2	12	9	6	17	10	33	6	1	16	143
The Journal of Physical Chemistry C	3	12	14	2	17	5	5	6	28	15	10	13	130
Chemistry of Materials	5	15	4	16	4	10	14	15	14	13	4	8	122
Environmental Science & Technology	10	13	3	8	5	9	12	6	26	18	3	7	120
Total	186	**636**	365	406	437	218	403	441	464	394	***147***	175	4272

Table 7: Month-wise retrieval more than 100 articles (2016)

Journal	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Journal of Agricultural and Food Chemistry	28	31	51	48	64	48	50	54	60	30	18	16	498
Journal of the American Chemical Society	33	22	19	32	16	19	60	54	40	35	58	63	451
Journal of Medicinal Chemistry	20	2	15	80	9	10	35	73	18	16	28	41	347
Chemical Reviews	25	21	23	25	9	9	24	46	43	41	33	30	329
The Journal of Organic Chemistry	18	5	42	30	27	17	44	26	27	11	11	39	297
Organic Letters	19	0	34	20	7	3	39	20	32	3	19	31	227
ACS Applied Materials & Interfaces	25	5	22	21	6	15	17	18	25	26	22	21	223
Inorganic Chemistry	9	7	22	22	8	6	20	9	25	25	26	16	195
The Journal of Physical Chemistry C	33	9	8	6	9	15	16	7	13	6	27	30	179
Analytical Chemistry	5	6	12	10	10	9	14	22	13	11	29	9	150
Chemistry of Materials	14	10	10	15	9	8	18	12	8	15	13	18	150
Langmuir	16	7	9	12	9	9	12	25	12	9	8	9	137
Industrial & Engineering Chemistry Research	15	8	7	21	3	3	14	14	18	13	4	4	124
The Journal of Physical Chemistry B	12	8	21	9	6	5	17	6	4	7	9	3	107
Total	272	***141***	295	351	192	176	380	**386**	338	248	305	330	3414

lowest 224 articles in the month of September. It is observed that none of the 12 journals have more than 1000 retrievals. Maximum 950 articles have been downloaded from the "Journal of Medicinal Chemistry". Only four journals have the total downloads of more than 600 articles. Only one journal has total downloads of more than 200 articles and the rest of 7 journals have retrievals in the range from 100 to 200 articles. During the year 2012, total 5325 articles have been retrieved from 46 journals out of which 4192 articles have been retrieved only from 12 journals.

From the Table 4, it has been observed that none of the journals have more than 1000 retrievals. Maximum 943 articles have been retrieved from the "Journal of Medicinal Chemistry". Only four journals have total downloads of more than 200 but less than 500 articles and the rest of 3 journals have downloads in the range

Table 8: List of Journals Annual Retrieval Higher Than 100 Articles

Journal (2011)	Total	Journal (2012)	Total	Journal (2013)	Total	Journal (2014)	Total	Journal (2015)	Total	Journal (2016)	Total
Journal of Medicinal Chemistry	1750	Journal of Medicinal Chemistry	950	Journal of Medicinal Chemistry	943	Journal of Medicinal Chemistry	547	Journal of Medicinal Chemistry	944	Journal of Agricultural and Food Chemistry	498
The Journal of Organic Chemistry	866	The Journal of Organic Chemistry	738	The Journal of Organic Chemistry	449	Journal of Agricultural and Food Chemistry	417	Journal of Agricultural and Food Chemistry	532	ournal of the American Chemical Society	451
Journal of Agricultural and Food Chemistry	680	Journal of Agricultural and Food Chemistry	614	Journal of the American Chemical Society	416	Journal of the American Chemical Society	290	The Journal of Organic Chemistry	506	Journal of Medicinal Chemistry	347
Journal of the American Chemical Society	639	Journal of the American Chemical Society	606	Journal of Agricultural and Food Chemistry	402	The Journal of Organic Chemistry	280	Journal of the American Chemical Society	452	Chemical Reviews	329
Chemical Reviews	319	Analytical Chemistry	221	Organic Letters	204	Organic Letters	161	Chemical Reviews	429	The Journal of Organic Chemistry	297
Organic Letters	267	Organic Letters	190	Langmuir	142	Chemical Reviews	150	Organic Letters	215	Organic Letters	227
The Journal of Physical Chemistry B	211	Chemical Reviews	170	Inorganic Chemistry	140	Langmuir	120	Analytical Chemistry	202	ACS Applied Materials & Interfaces	223
Analytical Chemistry	158	Chemistry of Materials	165	Chemical Reviews	131	Chemistry of Materials	111	ACS Applied Materials & Interfaces	178	Inorganic Chemistry	195
Biochemistry	139	The Journal of Physical Chemistry C	161	Total	2827	Total	2076	Langmuir	156	The Journal of Physical Chemistry C	179
The Journal of Physical Chemistry C	134	The Journal of Physical Chemistry B	148	-	-	-	-	Industrial & Engineering Chemistry Research	143	Analytical Chemistry	150
Macromolecules	123	Langmuir	127	-	-	-	-	Inorganic Chemistry	143	Chemistry of Materials	150
Langmuir	116	Biomacromolecules	102	-	-	-	-	The Journal of Physical Chemistry C	130	Langmuir	137
Inorganic Chemistry	115	Total	4192	-	-	-	-	Chemistry of Materials	122	Industrial & Engineering Chemistry Research	124
Chemistry of Materials	113	-	-	-	-	-	-	Environmental Science & Technology	120	The Journal of Physical Chemistry B	107
Environmental Science & Technology	112	-	-	-	-	-	-	Total	4272	Total	3414
ACS Combinatori	107	-	-	-	-	-	-	-	-	-	-
Total	5849										

Table 9: List of Journals Annual Retrieval Higher Than 100 Articles in All Six Years

Journal	2011	2012	2013	2014	2015	2016	Total	Rank
Journal of Medicinal Chemistry	1750	950	943	544	947	347	5481	1.
Journal of Agricultural and Food Chemistry	680	614	402	417	532	498	3143	2.
The Journal of Organic Chemistry	866	738	449	280	506	297	3136	3.
Journal of the American Chemical Society	639	606	416	290	452	451	2854	4.
Chemical Reviews	319	170	131	150	429	329	1528	5.
Organic Letters	267	190	204	161	215	227	1264	6.
Langmuir	116	127	142	120	156	137	798	7.
Average	662	485	384	280	462	327	2601	
Total	4637	3395	2687	1962	3237	2286	18204	

of 100 to 200 articles. Out of the total 8 journals, that have total downloads of more than 100 articles during the year 2013, total 2827 articles have been downloaded with a maximum 415 and minimum 112 in the months of July and February respectively. During the year 2013, total 4050 articles have been retrieved out from 49 journals out of which 2827 articles have been retrieved only from 8 journals.

During the year 2014, as shown in the Table 5, all such 8 journals where more than 100 articles have been retrieved, decreased by one third of articles in the year 2011 and about half of the year 2012. Only 2076 downloads of articles have been observed from such 8 journals with maximum 236 and minimum 72 articles in the months of November and October respectively. Further, more than 500 articles have been retrieved from "Journal of Medicinal Chemistry" whereas more than 200 and less than 500 articles have been retrieved from 3 journals. Four journals are such that has total retrieved of more than 100 but less than 200 articles. During the year 2014, total 3258 articles have been retrieved out from 50 journals out of which 2076 articles have been retrieved only from 8 journals.

It is shown in Table 6 that during the year 2015, there are 14 such journals where more than 100 articles have been retrieved and annual total of downloads from these journals is 4272 articles. Highest number of 944 articles have been downloaded from 'Journal of Medicinal Chemistry' followed by'Journal of Agricultural and Food Chemistry' and 'The Journal of Organic Chemistry' having 532 and 506 articles respectively. No other journal has the total downloads of more than 500 articles. Total 7 journals have downloads in the range of 100 to 200 articles, 2 in 200 to 300 and 2 in 400 to 500.While observing the month-wise usage, it is found that highest (636) and lowest (147) number of articles have been retrieved during the months of February and November respectively. It is further observed that from a particular journal, highest number of 326 articles have been retrieved from the 'Journal of Medicinal Chemistry' in the month of February. During the year 2015, total 5574 articles have been retrieved from 52 journals out of which 4272 articles have been retrieved only from 14 journals.

It has been observed from Table 7 that during the year 2016, total 3414 articles downloaded from 14 such journals where more than 100 articles have been downloaded. Highest 386 articles have been observed in the month of August following by 380 articles in the month of July. Further, 351, 338, 330 and 305 articles have been observed in the months of April, September, December and November respectively. Lowest 141 articles have been witnessed in the month of February. It is observed that, in total, maximum 498 articles have been downloaded from "Journal of Agricultural and Food Chemistry" followed by 451 articles from "Journals of American Chemical Society". From none of the 14 journals, total retrieval is more than 500 articles. During the year 2016, total 4563 articles have been retrieved from 54 journals out of which 3414 articles have been retrieved only from 14 journals.

Table 8 represents year-wise all such journals out of which more than 100 articles have been retrieved whereas Table 9 has shown total and year-wise 7 journals out of which more than 100 articles have been retrieved in all the six years.

Out of these 7 journals total 18204 articles have been retrieved at an annual average of 2601 articles. Journal of Medicinal Chemistry is one out of which more than 5000 articles have been downloaded whereas out of 'Langmuir' less than 1000 articles have been retrieved. The remaining 5 journals ranges from 1000 to 4000 articles per year. Further maximum 4637 and minimum 1962 articles have been observed in the years 2011 and 2014 respectively.

Suggestions

The university has the access of more than 8000 e-journals to meet the informational requirement of the users. The faculty members of the university have been provided computer systems/laptopswith internet connection in their respective rooms in the teaching departments. University has more than 1000 nodes

with internet connections and 2 leased lines of IGBPS and 16 MBPS respectively and has Wi-Fi connectivity but there is need to give attention on some points such as:-

- It has been observed that even most of the research scholars do not turn towards library, because of any reason, for user education programmes being conducted by the library. Many research scholars passed out for their Ph. D. without consulting the library resources. Ali and Nisha (2011) suggested to start a course on the proper use of information resources in Delhi University as part of M.Phil. and Ph. D. programmes. The CCSHAU, Hisar has also introduced such course for the Ph.D. scholars. On the same pattern, a course should also be introduced in the Guru Jambheshwar University of Science & Technology, Hisar for the Master Degree and Ph. D. scholars.
- There is urgent need for conducting the user awareness program to train the users in searching and downloading the required article. Since good infrastructural facilities are available in the university, there is dire need to motivate the users to use these resources. Such user awareness programs shall be helpful in imparting training and motivating the scholars for using electronic resources.
- More access point should be made available for the research scholars equipped with latest facility in the respective departments.
- The Wi-Fi connectivity available in the campus need to be strengthened.
- Centralized internet labs need to be strengthened.
- More e-journals databases, including the Science Direct, should be provided in the university.

Conclusion

The usage level of American Chemical Society database is ordinary in Guru Jambheshwar University of Science & Technology and about 10 journals are used prudently. It is remarkably observed that total 29407 articles have been perceived out of about 50 journals during all the six years whereas total 18204 articles have been retrieved only from 7 such journals out of which annual retrieval is morethan 100 articles in all six years. Journal of Medicinal Chemistry, Journal of Agricultural and Food Chemistry and, The Journal of Organic Chemistry, are three highly used journals and 11760 articles have been retrieved out of these journals during the 6 years.

The university and library authorities need to initiate some operative steps in order to further enhance the usage level. Most important such steps include to strengthen the Wi-Fi facility, to conduct more user awareness programmes for the researchers, and to start a new course on use of information resources for Ph.D. and Master Degree scholars. The result of the study shall be forwarded to the departments using the database of American Chemical Society to review.

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Bibliometric Study of "The British Journal of Psychology (2012-2016)"

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Abstract

This study is based on the Bibliometric analysis of 189 research papers published in five volumes of 30 issues of The British Journal of Psychology published during 2012 to 2016. The paper discusses 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 has also been discussed. The study also covers the number of articles published in each issue during the period 2012 to 2016.

Keywords: Bibliometrics; British Journal of Psychology; Authorship Pattern; Geographical Distribution.

Introduction

Science and scientific communication are so interrelated that one influences the other for the generation of information. It is true that research makes an important contribution to the economic growth of a nation. It is interesting to note that during the last few years, bibliometric analysis has been increasingly used and being used to evaluate the research performance of the scientists and the growth of various disciplines of science.

Bibliometrics is relatively a new one and a subject of recent origin. It has been very closely related to both bibliography and information sources. Bibliometrics is that branch of information science that attempts to analyze quantitatively the properties and behavior of recorded knowledge. Thus, it is a quantitative study of various literature on a topic and to use to identify the pattern of publication, authorship citations, and secondary journal coverage with the objective of getting an insight into the dynamics of the leads to the better organization of information resources for its most effective and efficient use. Psychology is the scientific study of the mind and behavior. Psychology is a multifaceted discipline and includes many sub-field of study such areas as human development, sports, health, clinical, social behavior and cognitive processes. Psychology is the study of cognitions, emotions, and behavior.

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The British Journal of Psychology

The British Journal of Psychology, was founded in 1904 by James Ward and W.H.R. Rivers who wished to create a publication that reflected the enthusiasm towards psychology at the turn of the century. In 1914, it was acquired by the British Psychological Society and provided a basis on which new journals were launched into other more specific subject areas. Currently, there are 11 titles with the newest addition, Journal of Neuropsychology, launched in 2007. The British Journal of Psychology publishes original research on all aspects of general psychology including cognition; health and clinical psychology; developmental, social and occupational psychology.

Objectives of the Study

The following objectives are laid down for the present study:

- To determine the authorship pattern of the articles published during 2012-2016.

- To find out the year wise publication of articles during the period.
- To assess the state wise distribution of contributors.
- To examine the distribution of papers according to pages.
- To assess the credibility wise distribution of papers.

Methodology

The data collected from 20 issues of five years (2012-2016) comprises 189 articles published in British Journal of Psychology. All the articles are evaluated for number of authorship pattern, year wise distribution of articles. Geographical distribution and citation pattern of articles.

Review of Literature

There has been a number of studies conducted on bibliometric studies related to the topic "Bibliometric Study of The British Journal of Psychology". The investigator reviewed only those studies which are directly or indirectly related to the present study.

L, Padme Satish and Vaishali, Khaparde (2016), analysis the Indian Journal of Chemistry-Section A (IJC-A), for the period of five years (2010 to 2014). It is an attempt to analyze the year wise distribution of articles, find out the issue wise distribution of articles, authorship pattern of Journal articles, year wise degree of collaboration, institute-wise distribution of papers, geographical distribution of articles author also ranking of leading contributors in the articles.

Prasad and Vala (2016) the purpose of the study is to analyze the published articles in the peer reviewed and indexed Journal titled 'World Development' an International Journal published by Elsevier. The present study quantitatively analyzed 922 peer reviewed articles which were contributed by 2184 authors from more than 80 countries during the period 2010-2014. The findings of this study based on different variables like authorship pattern, number of references, prolific authors, geographic contribution, length of article, author self-citation and journal self-citation. The paper provides different bibliometric tools to strengthen the library collection.

Malathy, S and Kantha, P (2015) study the Journal of spacecraft and Technology, an in-house publication of ISRO Satellite Centre publishing the research activity of the centre. This paper presents bibliometric study of the journal published during 1991 to 2012, which includes 22 volumes with 330 papers and 2597 citations.

The analysis was made on different parameters like year-wise distribution of articles for the period of study (1991-2012), length of articles, authorship pattern of contributions, author productivity, degree of collaboration among co-authors and gender-wise distribution of papers. It also presents Institution-wise contribution, group-wise (only ISAC) contribution, ranked list of prolific/productive authors, number of citations appeared in papers and from-wise distribution of citations. This study provides the insight and development of the journal towards excellence.

Siddiqui, Jamal Ahmad and Mamta Kumari (2015) 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.

Devendra Kumar, Hussain, Akhtar and Chauhan, Neeraj Pal Singh (2014) the directory of open Access Journal (DOAJ) provides open access to scientific and scholarly journals, that meat high quality standard by exercising pear review and is free to all from the time of publication based on the Budapest open access initiative. Using 36 fully open access electronic journals published uninterruptedly since 1991-2013 in the field of Gender studies.

The present study author investigated the total 36 free full text with abstracts online journals were accessed through DOAJ and analyzed based on e-journals were analyzed based on country-wise distribution, Language-wise distribution, Year-wise starting pattern, Institutions-wise distribution of publishers, distributions of subjects headings their accessibility of archives of online journals in Gender Studies.

Kalra, H.P.S. (2014) this paper presents a basic bibliomatric study of electronic journal namely 'South African Journal of Information Management' (SAJIM) for the period 2004-2012. In the present paper attempt has been made to analyze the authorship, number of articles published, subject coverage, country-wise analysis and prolific authorship pattern of this electronic journals.

Data Analysis and Interpretation

Authorship Pattern

As per the formula given by K. Subramanyam to determine the degree of collaboration in qualitative terms,the present study followed the formula which is as follows:

$$C = \frac{NM}{NM+NS}$$

Where

C= Degree of Collaboration

NM= Number of Multi Authored papers

NS= Number of Single Author papers

In the present study

NM = 168

NS = 21

Hence

C = 168 / 168+21 = 168/189

Thus, the degree of collaboration in British Journal of Psychology is 0.88 which shows the dominance upon single authors.

Table 1 shows that a total of 189 contributions have been published during five years of period 2012-2016. The data shows that the distribution of 189 contribution published from 2012-2016. Maximum number of contribution 41 (22%) was published in 2016 followed by 38 (20%) in 2012 and 2015, 37 (20%) published in 2014. However, only 35 (19%) papers were published in 2013.

Table 2 gives the details about the authorship pattern. A total of 21 contributions (11%) out of 189 have been contributed by single author, 43 contributions (23%) by two authors and 47 contributions (25%) by three authors, 78 contributions (41%) have been contributed by more than three authors. It is observed that majority of the papers published during the period is contributed by more than three authors.

Table 3 gives authorship pattern of contribution volume wise. It indicates that out of the 21 contribution of single author volume wise 105 has the highest number (i.e.) 07 (33%) out of 43 contributions by two authors, volume 107, has the highest number i.e. 11 (26%) and volume 105 has the lowest number i.e. 06 (14%). Out of 47 contributions by three authors volume 106 and 107 have the highest number i.e. 11 (23%) and volume 103 and 105 have the lowest i.e. 08 (17%). Out of the 4 contribution by more than three author volume 106 has the highest number 18 (23%) volume 103 and 104 have the lowest number i.e. 14 (18%) contributions.

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

Volume	Year of Publication	No. of Articles	Article Percentage
103	2012	38	20%
104	2013	35	19%
105	2014	37	20%
106	2015	38	20%
107	2016	41	22%
	Total	189	100%

Table 2: Authorship pattern

No. of Author	Table of Contribution	Percentage
Single Author	21	11%
Two Author	43	23%
Three Author	47	25%
More than 3 Author	78	41%
Total	189	100%

Table 3: Authorship Pattern of Contribution (Volume Wise)

Volume	One Author		Two Author		Three Author		More than 3 Author	
103	08	38%	08	19%	08	17%	14	18%
104	03	14%	09	21%	09	19%	14	18%
105	07	33%	06	14%	08	17%	16	21%
106	00	00%	09	21%	11	23%	18	23%
107	03	14%	11	26%	11	23%	16	21%
Total	21	100%	43	100%	47	100%	78	100%

Table 4: State Wise Distribution

Name of State	No. of Distribution	Percentage
UK	242	37%
USA	64	10%
Netherlands	28	04%
Germany	45	07%
Ireland	04	01%
Canada	22	03%
Switzerland	05	01%
Taiwan	09	01%
Australia	37	06%
France	35	05%
Norway	04	01%
Japan	06	01%
Spain	20	03%
Israel	06	01%
Italy	49	07%
Portugal	05	01%
Egypt	01	0.15%
New Zealand	12	02%
Turkey	05	01%
China	10	02%
Finland	04	01%
Belgium	14	02%
Hungary	03	0.45%
Malaysia	01	0.15%
Lebanon	01	0.15%
Iran	01	0.15%
Sweden	04	01%
Poland	06	01%
Santiago Chile	01	0.15%
Greece	01	0.15%
Slovak Republic	02	0.30%
Ukraine	01	0.15%
Brazil	01	0.15%
Russia	01	0.15%
Singapore	07	01%
Denmark	01	0.15%
Total	658	100%

Table 5: Length of Article

No. of Pages	2012	2013	2014	2015	2016	Total	Percentage
00-05	07	-	03	-	04	14	7%
06-10	02	06	04	02	-	14	7%
11-15	15	13	11	07	11	57	30%
16-20	11	12	09	18	13	63	33%
21-25	03	04	10	11	11	39	21%
26-30	-	-	-	-	01	01	01%
31-35	-	-	-	-	-	-	00%
36-40	-	-	-	-	-	-	00%
14-45	-	-	-	-	01	01	01%
Total	38	35	37	38	41	189	100%

Table 4 gives the state wise distribution of contribution in the five volume of the journal. Out of the 658 contributions, the highest number of contributions i.e. 242 (37%) were published by the authors of UK, were published by the authors of UK, followed by 64 contributions (10%) by the USA. However, the least number of i.e. only 1 (0.15%) is contributed by the people of more than 2% countries including Denmark, Brazil, Russia, Ukraine and Greece etc.

The table shows that maximum numbers of articles i.e. 63 (33%) were published in 16-20 pages, whereas the articles which were published in 11-15 pages were 57 (30%). The study shows that none of the articles during the covered period of five years were published in more than 45 pages. The maximum

Table 6: No. of References

Volume	103	104	105	106	107	Total
Year	2012	2013	2014	2015	2016	
Journal	1582	1318	1524	1348	1774	7576
	21%	17%	20%	18%	24%	100%
Book	188	194	168	164	185	899
	21%	22%	19%	18%	21%	100%
WWW	13	14	18	25	37	107
	12%	13%	17%	23%	35%	100%
Handbook	28	30	15	30	35	138
	20%	22%	11%	22%	25%	100%
Yearbook	16	18	16	14	20	84
	19%	21%	19%	17%	24%	100%
Conference	47	18	24	10	22	121
	39%	15%	20%	08%	18%	100%
Manuscript	06	05	03	03	05	22
	27%	23%	14%	14%	23%	100%
Encyclopedia	03	01	01	01	03	09
	33%	11%	11%	11%	33%	100%

Fig. 1:

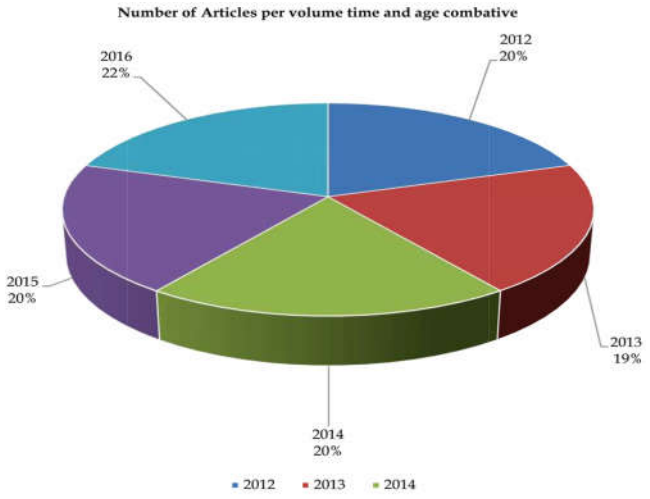
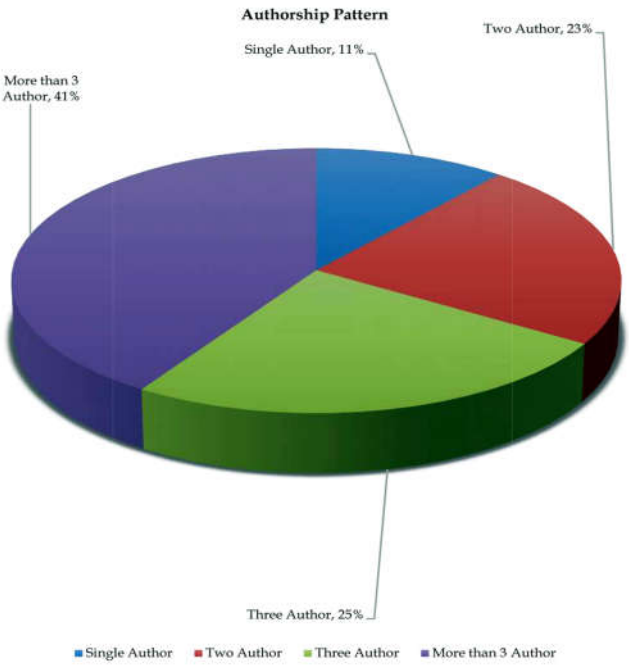
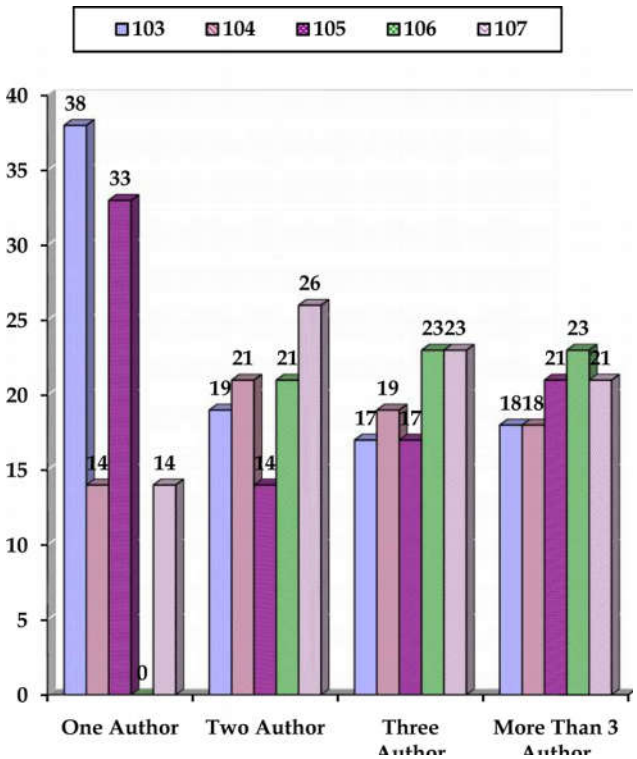


Fig. 2:

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More Than 3 Author

Fig. 3:

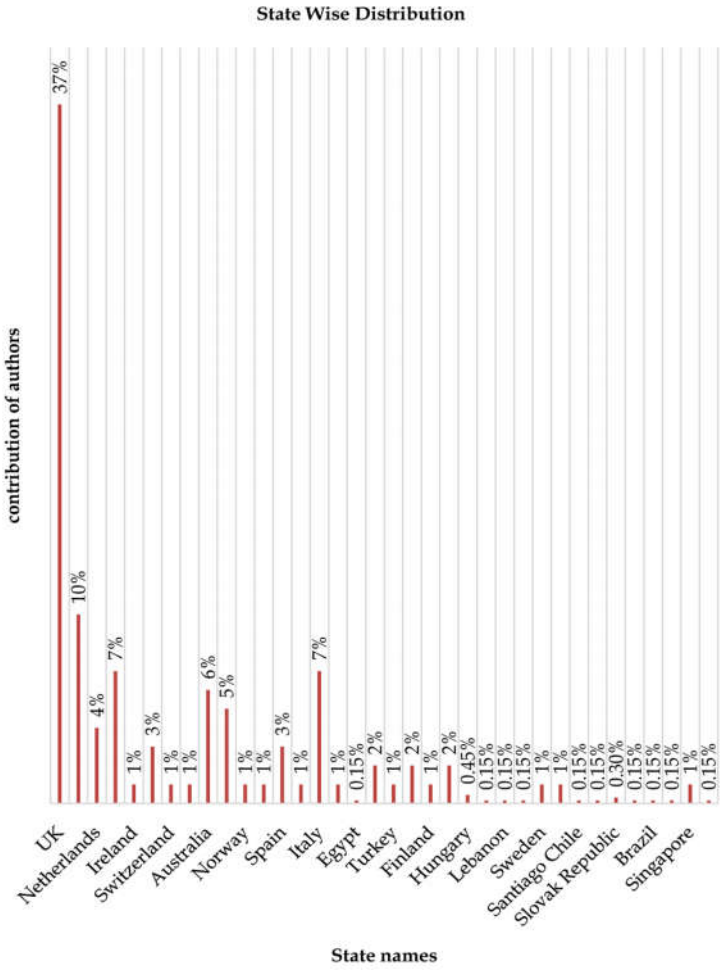
State Wise Distribution
contribution of authors
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Fig. 4:

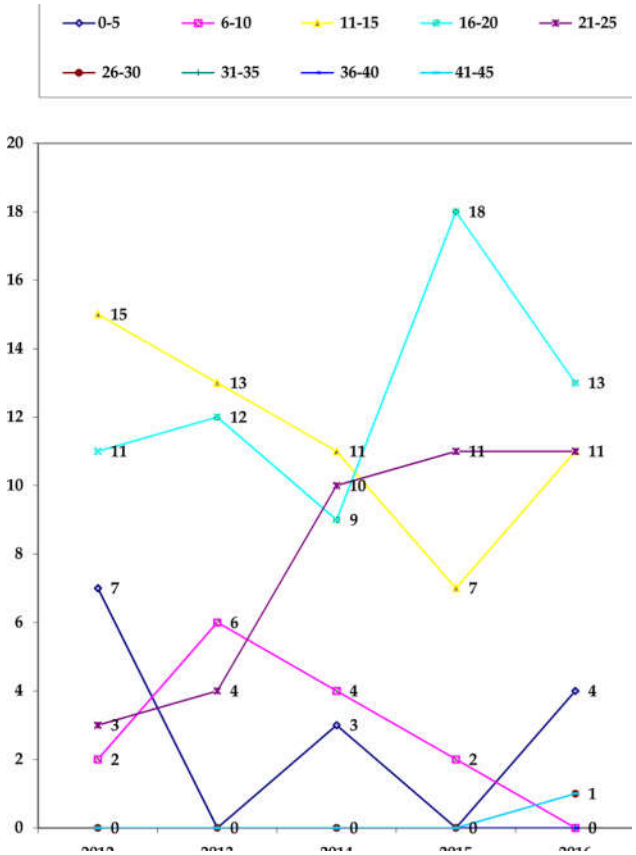
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Fig. 5:

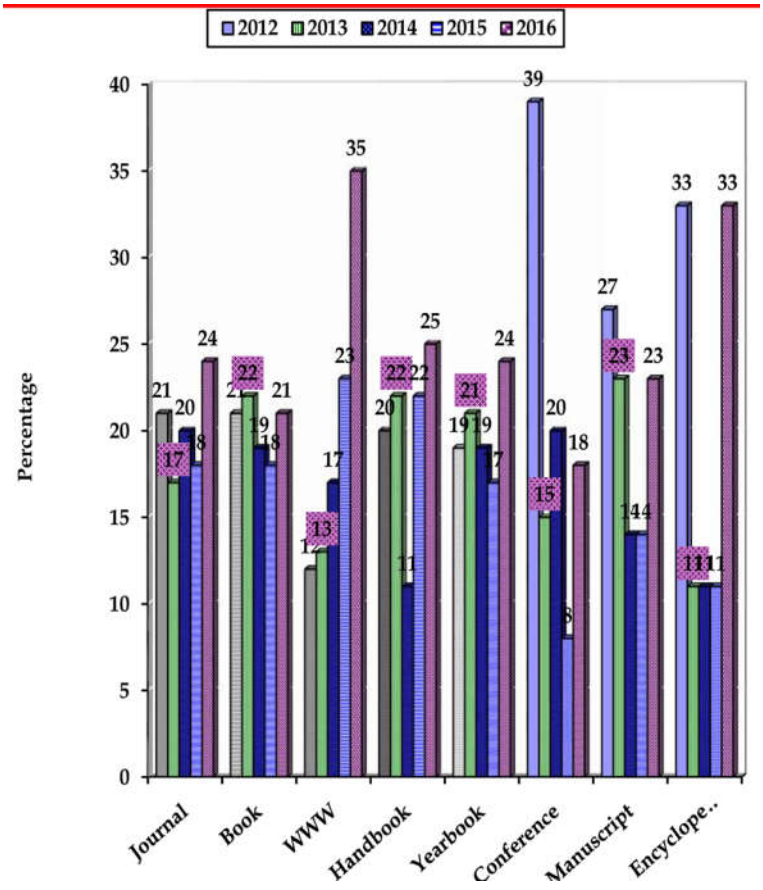
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Fig. 6:

numbers of articles were published in between 16-20 pages which are about 33%.

Table 6 shows the number of references cited by authors during the last five years 2012-2016. The maximum number of references i.e. 7576 cited in the articles from journals. The maximum references from journals have been noticed during 2016. Only 1318 (17%) references from different journals were cited in articles in the year 2013.

The books were also used to help the authors in their contributions. The maximum number of references from books have been cited during 2013 i.e. 194. The study shows that the contributors have consulted different websites and conference proceedings were accessed by the contributors to write their articles for the journal during the period of five year.

Major Findings

1. The maximum number of papers were published in 2016 which is 41 (22%).
2. The maximum number of articles i.e. 78 (41%) were written by more than three author, followed by 47 (25%) were contributed by three authors. Whereas only 21 (11%) and 43 (23%) articles were authored by one & two authors respectively.
3. The maximum number of articles i.e. 08 (38%) were written by one author, followed by 11 (26%) were contributed by two authors. Whereas only 11 (23%) and 18 (23%) articles were authored by three and more than three authors respectively.
4. The maximum contribution of state wise distribution i.e. 242 (37%) in UK & the minimum contribution 01 (0.15%) in Egypt, Malaysia, Lebanon, Iran and Denmark etc.
5. The maximum research papers i.e. 63 were published in between 16-20 pages during 2012-2016, followed by 57 pages published in between 11-15 pages.
6. The maximum citation were found by Journals which were recorded as 7576 and the minimum citation were found in Encyclopedia which were 09.

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The User Impact and Satisfaction with Library Automation Services: A Case Study of A.K. (P.G.) Library, Khurja

A.K. Sharma[1], Km. Prabha[2], Javed Khan[3]

Abstract

There are several reasons for automating the library activities especially computerizing library activities. On account of Information & knowledge explosion it has become essential for librarians to provide a master key to this repository of knowledge in the service, the librarian started mechanizing activities of libraries and research institution through various gadget. The main of Library is to provide access to proper information explosion, due to growing demands of the user and shrinking of financial resources, library cannot able to maintain all the reading materials on demand the only way to overcome from these problem is sharing resources through consortia, and Internet. This study is a fact finding approach related to the present status of automation services among A.K. (PG) college library users library services in library question were framed about information requirement of the users retrieve, manage and use information, what are the factors affecting the automation services of the users. The users of A.K. (PG) college Khurja was selected to study the various automation library and analyses the utility and effectiveness in provision of information services.

Keywords: Automation; Library Automation; Job Satisfaction; Library Automation; Information Communication Technology; Areas of Automation; Software for Library Automation.

Introduction

The development of electronic databases began in the 1960's and preceded the development of automated systems for libraries. Libraries started to acquire automated systems in the late 1970's. Vendors at this time concentrated on supplying a solution for a specific functional task. Some vendors concentrated on circulation while others concentrated on acquisitions and serial control functions. In the 1980's, there was a shift to integrated automated systems. Often all the software, the hardware, and services were provided by one vendor. This is also known as a turnkey system. The advances in the development of library automation were tied in with technological advances. For example, libraries were not able to install large quantities of dumb terminals, essentially a monitor and keyboard, for online public access catalog (OPAC) access until. hardware vendors could deliver reliable CPUs with increased terminal capacity. Many vendors lost a lot of their business due to their inability to incorporate new technologies with functional enhancements. One example of this is the failure of some vendors to migrate to the Unix operating system, which is small and open thus allowing application developers to expand its functionality. Those vendors that moved to the Unix operating system were then capable of providing connectivity with other modules and systems. Also, by the end of the 1980's vendors were expected to accommodate standard offthe-shelf peripheral devices such as printers and barcode scanners. Since the 1990's. There has been the shift to a client/server model. The new technology that is driving this shift is three-fold. The first is the personal computer (PC) revolution that started in the early 1980's and introduced a completely new way to perform day-to-day activities. The second technology advancement was actually a software development and that is the introduction of the graphical user interface (GUI) for the personal computer. This interface was first introduced by Apple Computers with their Macintosh

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in 1984 and was quickly followed by the rest of the PC's with Microsoft's Windows. The ability of the user to open multiple windows, use pull-down menus and point a mouse and by "clicking" on icons to accomplish tasks changed the scene of computing. Of course this development would not have occurred without the increased computing power of the personal computer, which is still advancing at a tremendous rate today. The last development which took place in the late 1980's was the introduction of the Internet's World Wide Web (WWW or Web). This method of communication on the Internet was first proposed by Tim Berners-Lee at the European Laboratory for Particle Physics (CERN). Linking of documents by clicking on anchors in a text and now in any media has completely revolutionized how people communicate and do business.

This latest development is also apparent in automated systems as most vendors offer a Web-based online public access catalog (WebOPAC). Today, the integrated library system has a very mature level of functionality. The set of features, such as a database and modules for every library function, expected in an integrated library system are well defined and almost universally implemented. The differentiating factors today involve interconnectivity, architecture and interfaces. Two musts are that library systems must be able to communicate with other systems through Z39.50 and must be accessible by Web browsers. A library's OPAC is no longer a stand-alone entity. Libraries must not only continue to provide access to their own holdings through their online catalogs, but will be expected to deliver a myriad of other information sources. These include electronic serials, online publications, Web-enabled databases, and real-time news resources. Any online catalog lacking the ability to integrate into this electronic information environment will not be adequate to meet the needs of the library and its users.

Review of Literature

Ahmad (2009) [1] studied on Library Automation of Al-Barkaat Institute of Management Studies, Aligarh with the help of Alice for Window (AFW) Library Software. The study found that ABIMS Library was the first fully automated library among all self financing Institutes available in Aligarh, which has provided, Online services to its users through Inter Library LAN System in which users can access the library database from the Online Public Access (OPAC) and also help to library staff to provide good reference service to staff and students.

Bansode and Peiera (2008) [2] on library automation in college libraries in Goa to find out libraries that have undertaken automation, areas of automation, whether sufficient staff is available to carry out automation and barriers to automation faced by the libraries. The study have thrown the light that majority of the college libraries have no qualified librarians as per UGC guidelines. Of the 23 libraries with automation, as the findings show, only one has specialized staff in ICT. The study also suggested that library staff should be sent to training courses to upgrade their IT skills, so that they can become competent to automate their libraries.

Barman and Singh (2007) [3] in a study has focused on the manpower aspects of library automation in the college libraries of Assam. The status of automation has been discussed along with the library survey, library software, and library services.

Bhanja and Barik (2009) [4] highlighted in a study that success of library automation mostly depend upon nature of softwares used for the purpose and emphasis on selection of good library software for automation

Bhuyan (2011) [5] in a study discussed about the automation and networking of public libraries in India with special reference to two districts of Assam. The study shown that due to financial inadequacy, lack of proper administrative structure within the library, lack of professionally trained staff and nonavailability of mechanical devices, the public libraries are limiting themselves to the traditional and pedestrian functions of the library.

Das (2011) [6] found that infrastructure and the service of the public libraries in Assam are not modernized but somehow traditional services are provided to community and public library automation is in its initial stage though its process have been started during 2004-2005.

Ibohal Singh and Giridhari Singh (2009) [7] in a study discussed the library automation in public library system in North East India. Based on the findings of a sponsored research project, the study highlighted Public Library System, ICT, Scope and Methodology adopted and emphasized background information, services, existence of library committee and automation status of the libraries in the region.

Jayaprakash and Balasubramani (2011) [8] in their study have emphasised that automation of library operations and services are essential for efficient functioning of the library and saving the library users time. In this purview, the study has investigated the Automation in University libraries in Tamil Nadu. It discussed automation, its need and application in university Libraries. The study explained the various

problems faced by authorities and the staff during the process of automation. The tool adopted to conduct the study was a well structured questionnaire.

Joshi and Nikose (2011) [9] discussing problems and prospects in automation and networking in libraries in India, highlighted some of the scientific and technical libraries working and leading in library automation under such R & D institutions like CSIR, ICMR, ICAR and DRDO. The study also described networking as the linkage of working procedures for the exchange of information resources and revealed some of the barriers of networking as higher education authorities still have a dilemma as to whether or not resource sharing is possible through networking. Potentialities of INFLIBNET, as the study shows, are still not known to many academic libraries and UGC fails to provide appropriate funds to academic libraries for computer software and hardware.

Medhi and Deka (2011) [10] which has revealed that the library does not use computer for automation of the library services. The study also found that the library was still giving traditional based services to the users.

Sarma and Jyotirekha (2009) [11] The study discussed the status of automation and networking, hardwares used in the library, services and facilities provided. The same has shown that the library was fully automated using Libsys 32 software package. The study also revealed that IIT Guwahati Library provides excellent service to its user and it could be considered as one of the best libraries in North East India.

Shivpal Gautam and Ritu (2008) [12] studied open source solutions and their impact on areas of information, knowledge and content management. It highlighted library community the concerned areas in library automation, and discussed about automation product such as commercial, not for profit and open source. The study also highlighted features of library automation software, which are mostly in practice by libraries i.e., Libsys, SOUL and open source system KOHA.

Vaiphei and Bembem (2009) [13] analysed the problems and prospects of automation in Manipur. The study revealed that most of the special libraries in Manipur are not automated due to various problems like lack of separate building, untrained staff, no qualified librarian and paucity of funds for library, etc.

Methodology

Methodology has its importance in scientific investigation because objectives in any research investigation cannot be obtained unless. it is carried out in a very systematic investigation in values careful and proper adoption of research design, use of standardized tools and test, identifying adequate sample by using appropriate sampling techniques, sound procedures collecting data there after careful tabulation of the data and the use of analyzing the data.

Proposal study is a fact finding approach related to the present status of automation services among. A.K (PG) college library users library services in library question were framed about information requirement of the users retrieve, manage and use information, what are the factors affecting the automation services of the users. 135 questionnaires were personally distributed to UG. and PG. Student. Out of 118 were received back this response rate comes to be approx.

The pilot survey ensures questionnaire is relevant and meaningful to the average respondent and to decide which questions were relevant for the purpose of study. The investigator was distributed questionnaire among 18 users for the pilot study which was very helpful in the questionnaire suitability.

The collection of data from the entire population of students was enough to be covered in a single study. Therefore, the total numbers of questionnaires distributed are 135 including undergraduates and postgraduates of A.K. (PG) College. A Total number of 125 filled in questionnaires were returned back. There investigator selected 118 questionnaires for the analysis 7 questionnaires were not completed filled.

The data collected through questionnaire, are organized and tabulated by using statistical method. Statically method of research lies stress on fact, figures and nothing beyond that. Statically methods have their own characterstics. One important characteristic that, this method does not study any individual, but a group of individual. Secondary it is a method which is quantitative rather the qualitative inferential statistics are used to make prediction to test hypothesis and to information characteristics of a population from the characteristics as a sample.

Results and Discussion

Several methods can be used to collect primary data. The choice of a method depends upon the purpose of the study. The resources available and the skills of the researcher. These are time when the method most appropriate to achieve the objectives of a study cannot be used because of constraints such as a lack of resources and/or required skills. In such situations

you should be aware of the problems these limitation impose or the quality of the data.

Which services available (offered) in this library?

Table 1 Show that services available in this library Show that UG. Student 7(11.47%) are using Interlibrary loan and PG. Student 12(21.05%), UG. Student 21(34.42%) Reference Services are using and PG. Student 32(56.14%), CAS UG. Student 9 (14.75%) are using and PG. Student 13 (22.80%), SDI are using UG. Student 2 (3.27%) and PG. Student 7(12.28%), UG.Student 9 (14.75%) indexing and abstracting and PG. Student 16 (28.07%), UG. Student 41(67.21%) Internet are using and PG. Student 51(89.47%), UG. Student 59 (96.72%) photo copying Services are using and PG. Student 53(92.98%)services availble in this library.

How often do you use the automation services?

Table 2 Show that UG. Student 5 (8.19%) are using daily and PG. Student 13 (22.80%), UG. Student 14 (22.95%) are using once a weak and PG. Student 13 (22.80%), UG. Student 24 (39.34%) are using once for night and PG. Student 22 (38.59%), UG. Student 11 (18.03%) are Using once a month and PG. Student 7 (12.28%), UG. Student 7 (11.47%) are using rarely and PG. Student 2 (3.50%) use the automation services.

Access to automatic section in the library is always granted to Students.

Table 3 Show that UG. Student 32 (52.45%) are agreed and PG. Student 35 (61.40%) agreed, UG. Student 19 (31.14%) are not agreed and PG. Student 13 (22.80%) are not agreed, UG. Student 10 (16.41%) are undecided and PG. Student 9 (15.78%) automated section in the library are always granted to student.

Which search function do you user while searching for information?

Table 4 show that UG. Student 5 (8.19%) keyword search are using and PG. Student 9 (15.78%), UG. Student 32 (52.45%) are using title search and PG. student 39 (68.42%) , Author search UG. Student 37 (60.65%) are using and PG. student 41 (71.92%), UG .student 47 (77.04%) are using subject search and PG student 29 (50.87%), UG. Student 3 (40.91%) Boolean search are using and PG. student 2 (3.50%) user while searching for information.

Table 1: Services available in library

S. N.	Services available in this library	UG. N=61	%	PG. N=57	%
2.	Inter library loan	7	11.47	12	21.05
3.	Reference services	21	34.42	32	56.14
4.	CAS	9	14.75	13	22.80
5.	SDI	2	3.27	7	12.28
6.	Indexing and abstracting	9	14.75	16	28.07
7.	Internet	41	67.21	51	89.47
8.	Photo copying services	59	96.72	53	92.98

(Multiples Answer were permitted)

Table 2: Use the automation services

S. N.	Use the automation services	UG.N=61	%	PG. N=57	%
1.	Daily	5	8.19	13	22.80
2.	Once a weak	14	22.95	13	22.80
3.	Once a for night	24	39.34	22	38.59
4.	Once a month	11	18.03	7	12.28
5.	Rarely	7	11.47	2	3.50

Table 3: Automatic section in the library

S. N.	Automatic section in the library	UG. N=61	%	PG. N=57	%
1.	Agreed	32	52.45	35	61.40
2.	Not agreed	19	31.14	13	22.80
3.	Undecided	10	16.41	9	15.78

(Multiples Answer were permitted)

Table 4: Search function do you user while searching for information

S. N.	User while searching for information	UG. N=61	%	PG. N=57	%
1.	Keyword search	5	8.19	9	15.78
2.	Title search	32	52.45	39	68.42
3.	Author search	37	60.65	41	71.92
4.	Subject search	47	77.04	29	50.87
5.	Boolean search	3	4.91	2	3.50

(Multiples Answer were permitted)

Table 5: Traditional system automation makes information Retrieval Very easier and faster

S. N.	Option	UG.N=61	%	PG. N=57	%
1.	Agreed	41	67.21	47	82.45
2.	Not agreed	18	29.50	7	12.28
3.	Undecided	2	3.27	3	5.26

(Multiple Answer were permitted)

Table 6: Method used for locating information

S. N.	Method used for Locating inf.	UG.N=61	%	PG. N=57	%
1.	Search the shelves four self	13	21.31	11	19.29
2.	Ask the library staff	10	16.39	6	10.52
3.	Consult the library catalogue/OPAC	27	44.26	33	57.89
4.	Take the library of a friend/college	11	18.03	7	12.28

Table 7: Search engine do you use for Searching

S. N.	Engine use for searching	UG. N=61	%	PG. N =57	%
1.	Google	58	95.08	49	85.96
2.	Yahoo	47	77.04	39	68.42
3.	Alta vista	2	3.27	3	5.26
4.	Rediff	19	31.14	32	56.14
5.	MSN	7	11.47	13	22.80
6.	Google scholar	13	21.31	21	36.84

(Multiples Answer were permitted)

Table 8: Opinion on convenience of use automated section

S. N.	Convenience of use automated section	UG. N=61	%	PG. N=57	%
1.	Very easy	27	44.26	23	40.35
2.	Easy	18	29.50	17	29.82
3.	Fairly easy	11	18.03	10	17.54
4.	Difficult	4	6.55	5	8.77
5.	Very difficult	1	1.63	2	3.50

As opposed to traditional system automation makes information Retrieval Very easier and faster.

Table 5 Show that UG. Student 41 (67.21%) agree are using and PG. student 47 (82.45%). UG. Student 18 (29.50%) are using not agreed and PG student 7 (12.28%), UG student 2 (3.27%) are using undecided and PG. student 3 (5.26%) information retrieval very easy and faster.

What is the method used for locating information?

Table 6 Show that UG. Student 13 (21.31%) are using search the shelves four Self and PG. student 11(19.29%), UG. Student 10(16.39) % are using ask the library Staff and PG. student 6 (10.52%), UG. Student 27 (44.26%) are using Consult the library Catalogue / OPAC and PG. student 33 (57.89%) UG student 11 (18.03%) are using Take the lib. Of a friend\college and PG. student 7 (12.28%).method used for locating information.

Which search engine do you use for Searching?

Table 7 Show that UG. Student 58 (95.08%) are using google and PG. student 49 (85.96%), UG. Student 47 (77.04%) are using yahoo and PG. student 39 (68.42%) UG. Student 2 (3.27%) Alta vista are using and PG. student 3 (5.26%), UG 19 (31.14%) Are using Rediff and PG. student 32 (56.14%), UG. Student 7

(11.47%) MSN are using And PG 13 (22.80%), UG. Student 13 (21.31%) Google scholar are using and PG.21 (36.84%) use for searching.

Respondent is opinion on convenience of use automated section.

Table 8 Show that UG. Student 27 (44.26%) very easy are using and PG. student 23 (40.35%), UG. Student 18 (29.50%) easy are using and PG. student 17 (29.82%), UG student 11 (18.03%) fairly easy are using and PG .student 10 (17.54%), UG. Student 4 (6.55%) difficult are using and PG. student 5 (8.77%), UG. Student 1 (1.63%) very Difficult are using and PG student 2 (3.50%) convenience of use automated section.

Problems encountered by users.

Table 9 Show that UG. Student 9(14.75%) insufficient computer terminals to Work on are using and PG. student 20 (35.08%), UG, student 18 (29.50%) recurrent Power outage are using and PG. student 13 (22.80%), UG. Students 13 (21.31%) Not finding appropriate subject term are using and PG. student 7(12.28%), UG. Student 14 (22.95%) computer literacy problem are using and PG. student 11 (19.29%) UG. Student 7 (11.47%) uncooperative attitude of staff is using and PG. Student 6 (10.52%) problem entered by users

I don't use the automated section in the library because I cannot Use the computer.

Table 10 Show that UG. Student 21(34.42%) agreed are using and PG. student 13 (22.80) %, UG. 27 (44.26) % not agreed are using and PG. student 37(64.91%), UG. Student 13 (21.31%) undecided are using and PG. student 7 (12.28%) automated section in library.

How do you rate the behavior of library staff?

Table 11 Show that UG. Student 9 (14.75%) excellent are using and PG. student 11 (19.29%), UG. Student 32 (52.45%) are using Good and PG. student 28 (49.12%), UG. Student 17 (27.86%) fair are using and PG. student 13 (22.80%), UG student 3 (4.91%) average are using and PG student 5 (8.77%) rate the behaviour of library staff.

Are you satisfied with the other Library facilities?

Table 12 show that UG student 17 (27.86%) membership are using and PG. Student 23 (40.35%), UG. Student 21 (34.26%) opening hours are using and PG. Student 19 (33.33%), UG. Student 7 (11.47%) reservation facility are using and PG. student 9 (15.78%), UG. Student 19 (31.14%) location are using and PG. student 11 (19.29%), UG. Student 17 (27.86%) are using space for using and PG. Student 27(47.36%), UG Student 11(18.03%) Cleanliness are using and PG. Student 14 (24.56%) satisfied with the other library facilities.

What are the resources for using the library?

Table 13 Show that UG. Student 41 (67.21%) are using to borrow Books and PG. Student 51 (89.47%), UG. Student 32 (52.45%) to use Internet and PG. student 39 (68.42%), UG. Student 7 (11.47%) to read Magazine and PG. Student 17 (29.82%) UG. Student 13 (21.31%) to read news pap r and PG. Student 21 (36.84%) resources for using the library.

Do you usually find it books and other material that you are looking for in this library?

Table 14 show that UG student 23 (37.70%) always are using and PG student 27 (47.36%), UG. Student 27 (44.26%) sometime find are using and PG student 21(36.84%), UG student 9 (14.75%) rarely find are using and PG student 7 (12.28%), UG student 2 (3.27%) never find are using and PG student 2 (3.50%) looking for in this library.

How do you find about what is happening at this library?

Table 15 Show that UG. Student 21 (34 .42%) friend are using and PG. Student 17 (29.82%), UG. Student 27 (44.26%) are using teacher and PG. Student 27(47.36%), UG. Student 4 (6.55%) library publication are using and PG. Student 7 (12.28%), UG .Student 9 (14.75%) lib. Staff Membership are using and PG. Student 6 (10.52%) happening at this library.

Mark all areas in which you would like to used technology

Table 16 Show that UG. Student 28(45.90%) more computer to access the Collection are using and PG. Student 32 (56.14%), UG. Student 23 (37.70%) more Internet access are using and PG. Student 17 (29.82%) UG. Student 7 (11.47%) more CD – Rom work station are using and PG. Student 6 (10.52%), UG. Student 3 (4.91%) more online database are using and PG. Student 2 (3.50%) would like to used technology.

How did you get information about the online database?

Table 17 Show that UG Student 37 (60.65%) course content are using and PG. Student 27 (47.36%), UG. Student 2 (3.27%) library personal are using and PG. Student 3 (5.26%), UG. Student 7 (11 .47%) computer literacy are using and PG. Student 6 (10.52%), UG.

Table 9: Problems encountered by users

S. N.	Problem encountered by users	UG. N=61	%	PG. N=57	%
1.	Insufficient computer terminals to work on	9	14.75%	20	35.08%
2.	Recurrent power outage	18	29.50%	13	22.80%
3.	Not finding appropriate subject term	13	21.31%	7	12.28%
4.	Computer literacy problem	14	22.95%	11	19.29%
5.	Uncooperative attitude of staff	7	11.47%	6	10.52%

Table 10: Use the automation section in the library

S. N.	Use the automation section in the library	UG. N=61	%	PG. N=57	%
1.	Agreed	21	34.42	13	22.80
2.	Not agreed	27	44.26	37	64.91
3.	Undecided	13	21.31	7	12.28

(Multiple Answer were permitted)

Table 11: Behaviour of library staff

S. N.	Behaviour of library staff	UG. N=61	%	PG. N=57	%
1.	Excellent	9	14.75	11	19.29
2.	Good	32	52.45	28	49.12
3.	Fair	17	27.86%	13	22.80%
4.	Average	3	4.91%	5	8.77%

Table 12: Satisfied with the library facilities

S. N.	Satisfied with the library facilities	UG. N=61	%	PG. N=57	%
1.	Membership fee	17	27.86	23	40.35
2.	Opening hours	21	34.26%	19	33.33
3.	Reservation facility	7	11.47	9	15.78
4.	Location	19	31.14	11	19.29
5.	Space for reading	17	27.86	27	47.36
6.	Cleanliness	11	18.03	14	24.56

Table 13: Resources for using the library

S. N.	Resources for using the library	UG. N=61	%	PG.N=57	%
1.	To borrow books	41	67.21	51	89.47
2.	To use internet	32	52.45	39	68.42
3.	To read magazine	7	11.4	17	29.82
4.	To read news paper	13	21.31%	21	36.84

(Multiple Answer were permitted)

Table 14: Looking the library

S. N.	Looking for in this library	UG. N=61	%	PG.N=57	%
1.	Always	23	37.70	27	47.36
2.	Sometime find	27	44.26	21	36.84
3.	Rarely find	9	14.75	7	12.28
4.	Never find	2	3.27	2	3.50

Table 15: What is happening at library?

S. N.	Happening at this library	UG. N=61	%	PG. N=57	%
1.	Friend	21	34.42%	17	29.82%
2.	Teacher	27	44.26%	27	47.36%
3.	Library publication	4	6.55%	7	12.28%
4.	Library Staff membership	9	14.75%	6	10.52%

Table 16: Areas in which you would like to used technology

S. N.	Would like to used technology	UG. N=61	%	PG. N=57	%
1.	More computer to access the collection	28	45.90	32	56.14
2.	More internet access	23	37.70	17	29.82
3.	More CD -Rom workstation	7	11.47	6	10.52
4.	More online database	3	4.91	2	3.50

Student 12 (19.67%) discussion with professional are using and PG. Student 11 (19.29%), UG. Student 3 (4.91%) conference/workshop is using and PG. Student 10 (17.54%) information about the online database.

Does the library have adequate facilities for the following electronic resource?

Table 18 Show that UG. Student 12 (19.67%) sufficient access computer terminal Are using and PG. Student 21 (36.84%), UG. Student 8 (13.11%) online database are using and PG Student 13 (22.80%), UG. Student 3 (4.91%) CD -Rom are using and PG. Student 7 (12.28%), UG. Student 37(60.65%) online public access catalogue are using and PG. Student 16 (28.07%) the library adequate facilities for the electronic resource.

What response on internet awareness among users?

Table 19 Show that UG. Student 33 (54.09%) Aware are using and PG. Student 33(57.89%) UG. Student 22(36.06%) not aware and PG. Student 17(29.82%), UG. Student 6(9.83%) undivided and PG. Student 7(12.28%) response on internet awareness among users.

Are you satisfied about internet services in your Library?

Table 20 Show that UG. Student 21(34.42%) fully are using and PG. Student 23(40.35%), UG. Student 29(47.54%) particularly are using and PG. Student 23(40.35%), UG. Student 11(18.03%) satisfied are using and PG. Student 11(19.29%) satisfied about internet services in your library.

Table 17: Information about the online database

S. N.	Information about the online database	UG. N=61	%	PG. N=57	%
1.	Course contents	37	60.65	27	47.36
2.	Library personal	2	3.27	3	5.26
3.	Computer literacy	7	11.47	6	10.52
4.	Discussion with professional	12	19.67	11	19.29
5.	Conference/workshop	3	4.91	10	17.54

Table 18: Facilities for electronic resources

S. N.	Facilities for electronic resources	UG. N=61	%	PG. N=57	%
1.	Sufficient access computer terminals	12	19.67	21	36.84
2.	Online database	8	13.1	13	22.80
3.	CD –Rom/multimedia	3	4.91	7	12.28
4.	Online public access catalogue	37	60.65	16	28.07

Table 19: Response on internet awareness among users

S. N.	Response on internet awareness among users	UG. N=61	%	PG. N=57	%
1.	Aware	33	54.09	33	57.89
2.	Not aware	22	36.06	17	29.82
3.	Undivided	6	9.83	7	12.28

Table 20: Internet services in your library

S. N.	Internet services in your library	UG. N=61	%	PG. N=57	%
1.	Fully	21	34.42	23	40.35
2.	Particularly	29	47.54	23	40.35
3.	Satisfied	11	18.03	11	19.29

Conclusion

Library automation is the process which needs proper planning, timely, implementation and periodical evolution the librarian with administrators has to set the priorities after analysing the current status and future requirement selection of the suitable integrated library management package according to the needs of the users and the library is important. Acquisition, circulation, cataloguing, serial control, OPAC etc. should be conducted with care staff training and user education are key to the success of the process for the successful implementation of an

integrated library system all key factors must be in place support from administration staff.

The present study revealed the following major points

- The study show that the high percentage of the user 96.72% UG. Student and 92.98% Student have photo copying services available in the library.
- The study show that the high percentage of the user 39.34% UG Student and 38.59% PG. Student once a for night use the automation services.
- The study show that the high percentage of the user 52.45% UG Student and 61.40% PG. Student agreed automation section in the library are always grated to student.
- The study show that the high percentage of the user 77.04% UG. Student use subject search and 71.92% PG. Student use author search use for searching information.
- The study show that the high percentage of the user 67.21% UG. Student and PG. Student 82.45%agreed to automation section in the library.
- The study show that the high percentage of the user 44.26% UG. Student and 57.89% PG. Student consult the library catalogue/OPAC method use for locating information.
- The study show that the high percentage of the user 95.08% UG. Student and 85.96% PG. Student use Google search engine use for searching.
- The study show that the high percentage of the user 44.26% UG. Student and 40.35% PG. Student very easy on convenience of use of automated section.
- The study show that the high percentage of the user 29.50% UG. Student recurrent power outages and 35.08% PG. Student insufficient computer terminal to work on problem encountered by users.
- The study show that the high percentage of the user 44.26% UG. Student and 64.91% PG. Student not agreed use the automated section in the library.
- The study show that the high percentage of the user 52.45% UG. Student and 49.12% PG. Student good the behaviour of the library.
- The study show that the high percentage of the user 34.26% UG. Student opening hours and 47.36% PG. Student space for reading satisfied with the other library facilities.
- The study show that the high percentage of the user 67.21% UG. Student and 89.47% PG. Student to borrow book for using the library.
- The study show that the high percentage of the user 44.26% UG. Student sometime find and 47.36% PG. Student always usually find its book and other material looking for in this library.
- The study show that the high percentage of the user 44.26% UG. Student and 47.36% PG. Student teachers is happening at the library.
- The study show that the high percentage of the user 45.90% UG. Student and 56.14% PG. Student more computers to access the collection would like to technology improved.
- The study show that the high percentage of the user 60.65% UG. Student and 47.36% course contents the online database sources of information.
- The study show that the high percentage of the user 60.65% UG. Student online public access catalogue and 36.84% PG. Student sufficient access computer terminals adequate Facilities for the following electronic resources.
- The study show that the high percentage of the user 54.09% UG. Student and 57.89% PG. Student aware on internet awareness among user.
- The study show that the high percentage of the user 47.54% UG. Student and 40.35% PG. Student particular satisfied about internet services in library.

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Internet Usage in Africa: Current Scenario and Future Prospects

Ramadan Elaiess

Abstract

Changes in the role and influence of the Internet development occur very quickly and the usage of the Internet has been changed with a rapid growth all over the world. A number of studies have pointed that there is huge correlation between successful nations and web use in those nations. The purpose of this paper is to shed light on the importance of utilizing the Internet these days and to highlight its significant role in establishing an information-based society. It intended to concentrate on the present condition of use of the Internet in African countries and discuss its potency and influence on enhancing the competitiveness and productivity that needs to be improved in order to foster the total economy of African countries. The design of this paper is based on theoretical approach. Various tools have been used and applied to accomplish the objective of this paper such as personal readings of intellectual production, literature review, experience, and the insights of other researchers and specialists in the extent of Internet utilize.

Keywords: Internet Usage in African Countries; Internet Penetration in Africa; ICT Infrastructure in Africa.

Introduction

It would be very difficult to deny that the Internet and related forms of information and communication technology (ICT) have had a profound impact on societies in almost every corner of the world. According to several studies nowadays "the Internet had entered homes, schools, and workplaces - not to mention libraries, and cell phones to become a major feature of daily life" [1]. The Internet has transformed the way information is accessed and used in business, education, and in almost every aspect of our life [2]. The Internet has become an important tool for the advancement of any nation.

Since the sixties of the last century, economics scientists have added a fourth sector to the three primaries known sectors that are agricultural, industry, and services, i.e. the sector of information, since the production of information, preparation, management, and dissemination to their users has become the main economic activity in many countries of the world. Moreover, in the last decades, it was noted that radical changes have been made in the economic political and social powers because of depending basically on the Intellectual technology, which includes new commodities and services that mainly lies on information as an investment source and a strategic goods, national income source and a field for the labor force.

Perhaps one of the most outstanding aspects of the contemporary society is changing from an economy of industries to an economy of information and from a national economy to a world comprehensive economy or a world integrated economy, and changing from producing goods and manufacturing commodities to producing information. While this is the current scenario in the developed countries, there are many indicators which have pointed out that the developing countries have not participated in the industrial revolution as well as globalization. There are also negative indicators on participating the third world countries in the information revolution which will reflect badly on their foreseeable future if they do not act as quick as possible since knowledge is critical for sustainable development and for the evolution of social, economic, and intellectual life.

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The World summit of information society in Geneva 2003 and Tunis commitment 2005 declare "the desire to build a people-centered and development-oriented information society, where everyone can create, access, utilize, and share information and knowledge" [3]. An information society is defined as "a type of society in which information and information access plays a central role, economically, socially and individually. The information society can be measured by exploring citizens access to and use of the internet, e-government, e-learning, e-health, buying and selling on-line and e-business readiness" [4].

It may be concluded from the former definitions that everyone in an information society participates in the process of handling of information as a producer or as a consumer and access to information is also available to everyone. To enable everyone to access information there is a need to improve ICT infrastructure in Africa and provide access to information using today's technology and the world wide web. Nowadays, an adequate ICT infrastructure is more essential to any country than ever before. It is hoped that improving ICT infrastructure along with Internet access and the research environment will create new business and facilitate industrial research in Africa. This in turn will foster and enhance the total economy of African countries.

Objectives

The main objective of this theoretical study and review summary is as follows:

1. To find out the internet services in Africa
2. To assess the emerging Internet services in African countries in comparison to the world.

Internet Market in Africa

The Internet market in Africa has increased over the last decade but not at the rates seen elsewhere in the world. This can be observed from Internet usage statistics for Africa. Table 2 (Internet World Stats, 2017) shows the African region, estimated populations, the number of Internet users in the region in 2017, the percentage of growth in Internet usage between 2000 and 2017, the percentage of population penetration and the total percentage of users in those countries. It can be clearly seen that Eretria has the first lowest penetration and user rate in the African region in 2017 with 1,3%. Kenya has the highest penetration rate with 77%. The table demonstrates that the number of users in 2000 was 200,000 users, which increased dramatically to reach 37,718,650 users in March 2017. This indicates that there is a considerable change in the development of the Internet and its technology infrastructure in Kenya that will influence the forthcoming strategies and policies.

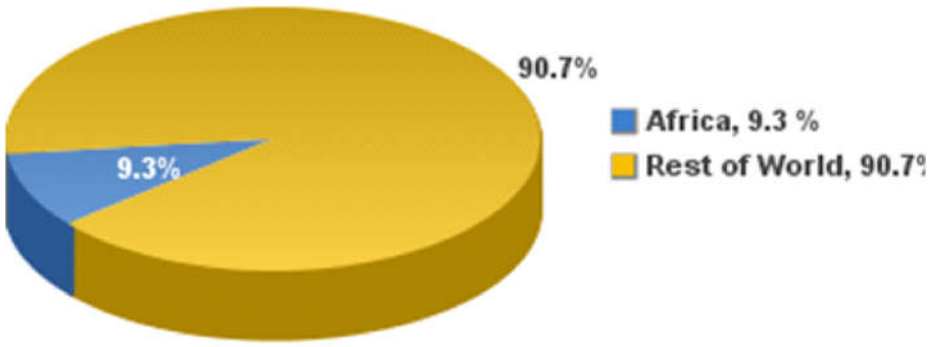

Fig. 1: African Percentage of Internet Users Comparison to Other Continents (Source: IWS, 2017 April)

Table 1: Internet usage statistics for Africa and the rest of the world (Source: IWS, 2017 April)

Africa Region	Population (2017 Est.)	Pop. % of World	Internet Users, Latest	Penetration (% Population)	Internet % Users
Total for Africa	1,246,504,865	16.6 %	345,676,501	27.7 %	9.3 %
Rest of World	6,272,524,105	83.4 %	3,386,296,922	54.0 %	90.7 %
World Total	7,519,028,970	100.0 %	3,731,973,423	49.6 %	100.0 %

Table 2: Internet users in Africa (IWS-2017)

Africa	Population (2017 Est.)	Internet Users 31-Dec-2000	Internet Users 31-Mar-2017	Penetration (% Population)	Africa Internet % Users
Algeria	41,063,753	50,000	15,105,000	36.8 %	4.4 %
Angola	26,655,513	30,000	5,951,453	22.3 %	1.7 %
Benin	11,458,611	15,000	1,232,940	10.8 %	0.4 %
Botswana	2,343,981	15,000	690,000	29.4 %	0.2 %
Burkina Faso	19,173,322	10,000	2,156,498	11.2 %	0.6 %
Burundi	11,936,481	3,000	526,372	4.4 %	0.2 %
Cabo Verde	533,468	8,000	235,183	44.1 %	0.1 %
Cameroon	24,513,689	20,000	4,909,178	20.0 %	1.4 %
Central African Rep.	5,098,826	1,500	246,432	4.8 %	0.1 %
Chad	14,965,482	1,000	387,063	2.6 %	0.1 %
Comoros	825,920	1,500	60,000	7.3 %	0.0 %
Congo	4,866,243	500	400,000	8.2 %	0.1 %
Congo, Dem. Rep.	82,242,685	500	3,101,210	3.8 %	0.9 %
Cote d'Ivoire	23,815,886	40,000	5,230,000	22.0 %	1.5 %
Djibouti	911,382	1,400	150,000	16.5 %	0.0 %
Egypt	95,215,102	450,000	34,800,000	36.5 %	10.1 %
Equatorial Guinea	894,464	500	181,657	20.3 %	0.1 %
Eritrea	5,481,906	5,000	71,000	1.3 %	0.0 %
Ethiopia	104,344,901	10,000	11,538,000	11.1 %	3.3 %
Gabon	1,801,232	15,000	670,197	37.2 %	0.2 %
Gambia	2,120,418	4,000	373,865	17.6 %	0.1 %
Ghana	28,656,723	30,000	7,958,675	27.8 %	2.3 %
Guinea	13,290,659	8,000	950,000	7.1 %	0.3 %
Guinea-Bissau	1,932,871	1,500	84,000	4.3 %	0.0 %
Kenya	48,466,928	200,000	37,718,650	77.8 %	10.9 %
Lesotho	2,185,159	4,000	444,376	20.3 %	0.1 %
Liberia	4,730,437	500	395,063	8.4 %	0.1 %
Libya	6,408,742	10,000	2,800,000	43.7 %	0.8 %
Madagascar	25,612,972	30,000	1,300,000	5.1 %	0.4 %
Malawi	18,298,679	15,000	1,670,839	9.1 %	0.5 %
Mali	18,689,966	18,800	2,212,450	11.8 %	0.6 %
Mauritania	4,266,448	5,000	714,132	16.7 %	0.2 %
Mauritius	1,281,353	87,000	803,896	62.7 %	0.2 %
Mayotte (FR)	253,068	n/a	107,940	42.7 %	0.0 %
Morocco	35,241,418	100,000	20,207,154	57.3 %	5.8 %
Mozambique	29,537,914	30,000	1,834,337	6.2 %	0.5 %
Namibia	2,568,569	30,000	520,000	20.2 %	0.2 %
Niger	21,563,607	5,000	439,164	2.0 %	0.1 %
Nigeria	191,835,936	200,000	93,591,174	48.8 %	27.1 %
Reunion (FR)	873,356	130,000	390,000	44.7 %	0.1 %
Rwanda	12,159,586	5,000	3,724,678	30.6 %	1.1 %
Saint Helena (UK)	3,970	n/a	2,000	50.4 %	0.0 %
Sao Tome & Principe	198,481	6,500	49,686	25.0 %	0.0 %
Senegal	16,054,275	40,000	3,647,939	22.7 %	1.1 %
Seychelles	97,539	6,000	56,168	57.6 %	0.0 %
Sierra Leone	6,732,899	5,000	310,000	4.6 %	0.1 %
Somalia	11,391,962	200	660,000	5.8 %	0.2 %
South Africa	55,436,360	2,400,000	28,580,290	51.6 %	8.3 %
South Sudan	13,096,190	n/a	2,179,963	16.6 %	0.6 %
Sudan	42,166,323	30,000	10,886,813	25.8 %	3.1 %
Swaziland	1,320,356	10,000	436,051	33.0 %	0.1 %
Tanzania	56,877,529	115,000	3,700,000	6.5 %	1.1 %
Togo	7,691,915	100,000	545,020	7.1 %	0.2 %
Tunisia	11,494,760	100,000	5,800,000	50.5 %	1.7 %
Uganda	41,652,938	40,000	13,023,114	31.3 %	3.8 %
Western Sahara	596,021	n/a	27,000	4.5 %	0.0 %
Zambia	17,237,931	20,000	3,167,934	18.4 %	0.9 %
Zimbabwe	16,337,760	50,000	6,721,947	41.1 %	1.9 %
TOTAL AFRICA	**1,246,504,865**	**4,514,400**	345,676,501	**27.7 %**	**100.0 %**

Percentage of Population Penetration in Africa 2017: Top 10 Countries

Kenya 77%, Mauritius 62%, Seychelles 57.6%

Morocco 57.3%, South Africa 51.6%, Tunisia 50.5%

Nigeria 48.8%, Cabo Verde 44.1%, Mayotte (FR) 42.7% & Zimbabwe 41.1%

The Internet world state report further that total internet users in African countries is 345,676,501 of the total population of 1,246,504,865 as estimated for 2017. The total Internet penetration for African countries account for 27.7%.The report further stated that in these countries among the services most important and popular are social networking, shopping, entertainment and so on. The IWS report shows that in Africa, total Face book users reaches the number 146,637,000 (as on 30th June, 2016).

A list of countries with user base is depicted by the IWS shows the following interesting data:

a. Nigeria holds 93,591,174 million users
b. Kenya with 37,718,650 million users
c. Egypt 34,800,000 million users
d. South Africa holds 28,580,290 million users
e) Morocco with 20,207,154 million users

Future Prospects

Today, Internet penetration in Africa is over 27% and increasing day by day. In any case, as Internet has turned into a basic foundation, Africa earnestly needs a substantially more prominent pool of talented specialists and Internet specialized architects to guarantee its operation. By 2020 there will be more than 700 million cell phone associations in Africa – more than double the anticipated number in North America and not a long way from the aggregate in Europe, as per (GSMA, a relationship of cell phone administrators).

In Nigeria alone 16 cell phones are sold each moment (minute), while transferable information activity crosswise over Africa is set to build 15-overlay by 2020 [9]. It is, in this manner, vital for sub-Saharan African governments and ICT controllers to take an interest in worldwide talks on issues like internet equality and computerized security for the advantage of the more than one billion potential users in the continent.

Conclusion

The number of Internet users worldwide is expanding day by day. Internet access and penetration in the African continent is also increasing day by day. Many countries in Africa have put big efforts in internet systems and better information infrastructure. Similarly with different regions in the world, Africa likewise confronts the dangers posed by web security and protection issues. In its endeavor to create enabling legislation, the African Union made the convention or the so- called principles on cyber-security (AUCC) in 2011 to provide directions on the organization of electronic transactions, protection of individual information, advancement of digital security, e-administration and combating cybercrime [10].

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The Bibliometric Study of the Journal Indian Historical Review (1999-2016)

Jamal Ahmad Siddiqui[1], Ritu Kalsi[2]

Abstract

The present study deals with the bibliometric analysis of the journal Indian Historical Review for the period of 1999-2016. The study demonstrates and elaborates on the various aspects of Indian Historical Review, such as Authorship Pattern, number of articles published per volume, state wise distribution of articles, length of articles and authors contribution per volume. Results indicate that highest number of papers have been written by single author. The major contribution in this journal is from India. The maximum number of articles were published in volume 34 (68) during the year 2007.

Keywords: Bibliometrics; Authorship Pattern; Geographical Distribution; Historical Review.

Introduction

The term Bibliometrics was first coined by Prichard (25) in 1969 in preference to existing terminology 'statistical bibliography'. The word "Bibliometrics" has two roots: 'biblio' and 'metrics'. The term 'biblio' is derived from the combination of Latin and Greek word 'biblion' meaning book, paper. The word 'metrics' on the other hand, indicated the science of meter i,e. measurement. This term was coined for the first time by Alan Pritchard. He used the term to describe all 'studies which seek to quantify the process of written communication. Fairthorne also defined it as 'the quantitative treatment of the properties of recorded discourse and behavior pertaining to it.

Bibliometrics studies include studies of the growth of the literature in some subject. How much literature is contributed by various individuals, groups, or organizations or countries: how much exists in various languages: how the literature on some subject is scattered and how quickly the literature on some subject becomes out-of-date Another important group of bibliometric studies relates to what sources author cite. Day-by-day this study is attaining sophistication and complexity, having national international and inter disciplinary character.

The Indian Historical Review (IHR), a peer reviewed journal, addresses research interest in all areas of historical studies, ranging from early times to contemporary history. While its focus is on the Indian subcontinent, it has carried historical writings on other parts of the world as well. Committed to excellence in scholarship and accessibility in style, the IHR welcomes articles which deal with recent advancements in the study of history and discussion of method in relation to empirical research. All articles, including those which are commissioned, are independently and confidentially refereed. The IHR has been published since 1974 by the Indian Council. The Council also obtains the advice and support of the journal s Advisory Committee, which consists of eminent scholars working in the area of Indian historical studies in India and abroad. This journal is a member of the Committee on Publication Ethics (COPE).

Objectives of the Study

The following objectives are laid down for the present study:

1. To determine the authorship pattern of the article published during 1999-2016.

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2. To find out the year wise publication of articles during the said period.
3. To assess the state wise distribution of contributors.
4. To study the citation pattern of papers.
5. To examine the distribution of papers according to pages.
6. To assess the credibility wise distribution of papers.

Methodology

The data collected from the 33 issues of five years (1999-2016) comprises 515 articles published in International Journal of Information Dissemination and Technology. All the articles are evaluated for number of authorship pattern, year wise distribution of articles. Geographical distribution and citation pattern of articles.

Review of Literature

Review of literature describes in brief an account of what has been published in relation to the topic of the research, in chronological order, by different research scholars and scientists in several institutions and organizations. In this chapter an attempt has been made to convey the reader the information documented, enlightening the merits and shortcomings, in relation to the topic of present investigation.

Kley (Susant), Sen (BK) (2014) Sambhu Nath De, medical scientist, is recognized as a pioneer in cholera research. His publications were analyzed to find out year –wise distribution of papers, research team of the scientist and scattering of papers on different communication channels. This study also finds author productivity, spectrum of research activities and productivity of De's research team. The result shows that De's first paper was published in 1944 at the age of 30. The period 1951-1954, when De was 37-40 years old, was his most productive period (3 papers per year). His status was as first author, second author and third author. Most of his papers were published in international journals.

Singh (KP), Bebi (2014) this paper presents a bibliometric study of the journal Library Herald the period of 10 years (2003-2012) in which 234 articles was published during the marked period. Study examines the various bibliometric parameters such as authorship pattern, gender-wise; geographical distribution, major authors and their affiliations, topical mapping and length of articles were contributed by articles and average number of references in the articles.

Skodi (ST) (2011) this paper presents a bibiometrics analysis of the journal titled "Library Herald" authorship pattern, subject wise distribution of articles, average number of references per articles, form of documents cited, journal etc. All the studies points towards the merits and weakness of the journal which will be helpful for its further development. The result showed that of 138 articles single author contributed 72(52.17%) articles while the rest 66 (47.83%) articles were contributed by join authors. Study reveals that most of the contributions are form India with 89.85% and the rest 10.15% only form foreign sources.

Neera (2006) this paper analysis growth pattern, core journals and authors' distribution in the field of bibliometrics using data from Library And Information Science Abstracts (LISA). Growth of literature does not show any definite pattern. Bradford's law of scattering is used to identify core journals and found 'Scientometric' as the core journals in this field. Lotka's law was used to identify authors' productivity patterns. It is observed that authors' distributions do not follow original Lotka's law. Study also identified 12 most productive authors with more than 20 publications in this field.

Goel (Kamlesh) (2002) presents bibliometric analysis of psychology PhD awarded by Indian universities covering 1976-1977 to 1985-1986 period for the purpose. It gives quantitative assessment of psychologists and highlights the trend of near future. Analysis also indicates thrust areas of psychology research.

Pouris (1989) reported the results of a scientometric assessment of agricultural research in South Africa over the period from 1974 to 1984. The Science Literature Indicators Database of CHI was used to South Africa was compared with seven other countries spread in America, Asia, Oceania, and Africa. The criteria used for the assessment were the contribution of each country to international agricultural literature (in terms of publications) and their impact in the "Schubert-Glanzel-Braun impact Scale". It was found that, although the South Africa contribution had improved in that period, less than that of Nigeria, Israel, Australia and Canada, but was comparable to that of Brazil and Argentina. As far as research impact was concerned, "Plant science" research in South Africa was rated fair in the Schubert-Glanzel-Braun scale, whilst "Dairy and Animal Science" and "Veterinary" research were rated poor.

Usha Mujoo Munshi et al (1991) carried out an analysis of references cited by the scientists of India, USA, UK and Canada in a few selected journals of chemistry and chemical technology to evaluate the effectiveness of the information system of these countries and also to find out how the availability of journals affect the citation practice. The authors found that Indian authors, generally, cited older references; whereas, the American authors quoted more recent literature irrespective of their place of work. However, the citation practice of British and Canadian scientists was in between USA and India.

Data Analysis and Interpretation

Table 1 Show the number of Articles published is each volume of the journal Indian Historical Review during 1999 to 2016. It has been noticed that the maximum number of articles i.e. 68 (13%) were published in the year 2007, followed by 50 (9.61%) in the year 2005. The least number of article i.e. 12 (2.30%) were published in 2015. The table also predicts that 515 research articles are published during the last 18 years in the said journal.

Table 2 provides the detail about the Authorship pattern. A total of 503 contributions out of 515 have been contributed by single Author. 10 contributions 6%by two Authors and 2 contributions 0% by three authors. It is observed that modality of the papers published during the period is contributed by single author.

Table 3 gives Authorship pattern of contribution volume wise. It indicates that maximum number of articles i.e. 503, were contributed by single author, followed by 10 written by two Authors. It is quitted notable that. 1919-2016 were contributed by three Authors. The total number of papers during this period is 515.

Table 1: Number of articles per volume time age combative

Volume	Year of Publication	No. of Article	Article Percentage
26	1999	37	7%
27	2000	23	4%
28	2001	45	9%
29	2002	40	8%
30	2003	33	6%
31	2004	32	6%
32	2005	50	10%
33	2006	44	9%
34	2007	68	13%
35	2008	14	3%
36	2009	14	3%
37	2010	32	6%
38	2011	16	3%
39	2012	13	3%
40	2013	15	3%
41	2014	14	2%
42	2015	12	2%
43	2016	13	3%
		515	100%

Fig. 1:

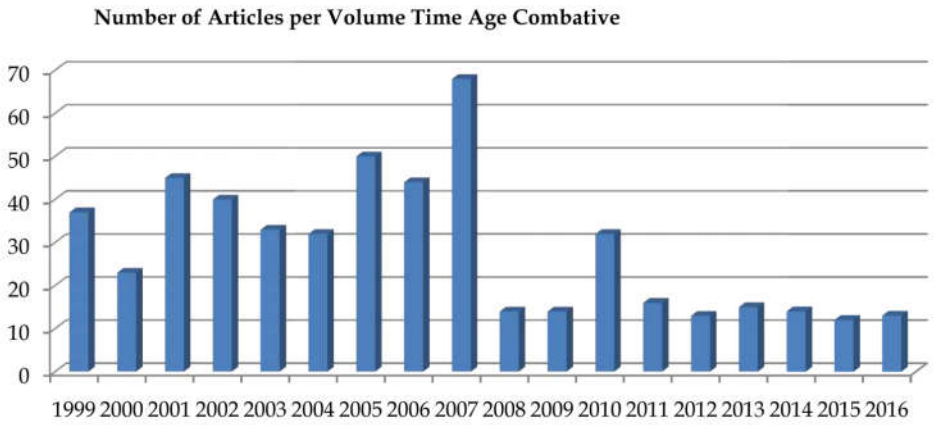


Table 2: Authorship pattern:

No. of Author	Table of Contribution	Percentage
One Author	503	97.66%
Two Authors	10	6.62%
Three Authors	2	0.38%
	515	100%

Table 3: Authorship pattern of contribution (volume wise)

Volume	One Author		Two Author		Three Author	
26	35	6.95%	2	20%	0	0%
27	22	4.37%	1	10%	0	0%
28	44	8.74%	1	10%	0	0%
29	39	7.75%	1	10%	0	0%
30	33	6.56%	0	0%	0	0%
31	32	6.36%	0	0%	0	0%
32	49	9.74%	1	10%	0	0%
33	44	8.74%	0	0%	0	0%
34	68	13.71%	0	0%	0	0%
35	14	2.78%	0	0%	0	0%
36	14	2.78%	0	0%	0	0%
37	30	5.96%	1	10%	1	50%
38	14	2.78%	1	10%	1	50%
39	13	2.58%	0	0%	0	0%
40	14	2.78%	1	10%	0	0%
41	14	2.78%	0	0%	0	0%
42	12	2.38%	0	0%	0	0%
43	12	2.38%	1	10%	0	0%
Total	503	100%	10	100%	2	100%

Fig. 2:

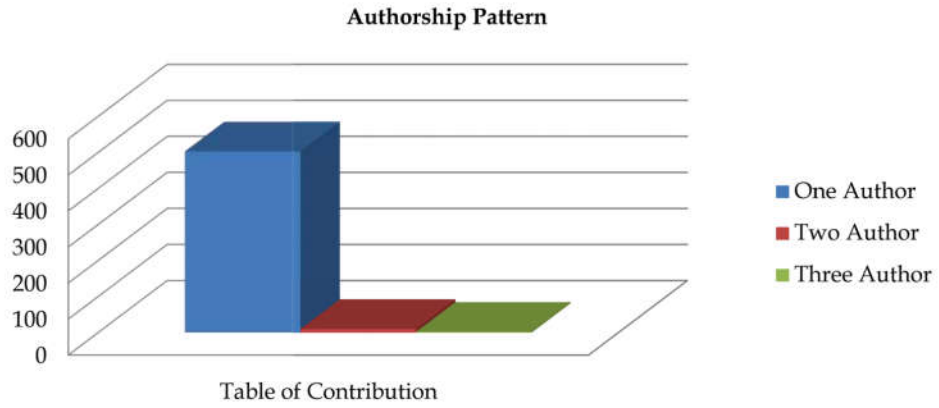


Fig. 3:

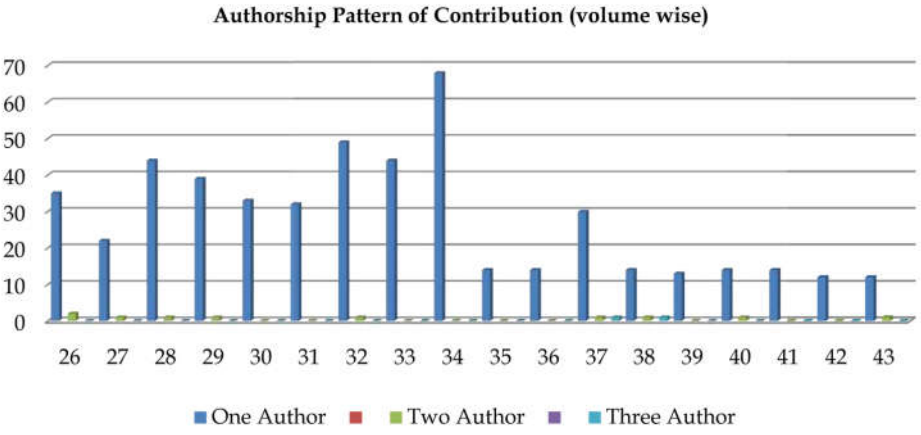


Table 4: State wise distribution

Name of State	No. of Distribution	Percentage
Australia	2	0.38%
Bangladesh	2	0.38%
Brazil	1	0.19%
Canada	1	0.19%
China	3	0.57%
England	1	0.19%
Europe	3	0.57%
Germany	2	0.38%
Imphal	1	0.19%
India	465	89%
Italy	3	0.57%
Japan	3	0.57%
London	1	0.19%
Malayalam	1	0.19%
Moscow	3	0.57%
Nagaon	1	0.19%
Nepal	1	0.19%
New York	1	0.19%
Osmania	1	0.19%
Pakestan	2	0.38%
Pennsylvania	1	0.19%
Russia	1	0.19%
South Asia	3	0.57%
Sydney	1	0.19%
Thanjavur	1	0.19%
U.K	5	0.95%
U.S.A	11	2.10%
Total	521	100%/

Table 5: Length of Articles

No. of pages	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	66-70	Total
1999	32	-	-	1	1	1	-	2	-	-	-	-	-	37
2000	19	1	2	1	-	-	-	-	-	-	-	-	-	23
2001	33	4	2	4	1	1	-	-	-	-	-	-	-	45
2002	27	4	3	2	1	2	-	-	-	-	1	-	-	40
2003	23	5	1	1	-	2	-	-	-	-	1	-	-	33
2004	22	3	2	1	1	1	1	-	-	-	-	-	1	32
2005	24	6	6	3	5	2	2	-	-	-	-	1	1	50
2006	22	1	2	6	7	6	1	-	-	-	-	-	-	45
2007	46	3	4	4	5	2	2	-	2	-	-	-	-	68
2008	3	2	1	4	3	1	-	-	-	-	-	-	-	14
2009	2	-	2	5	2	2	1	-	-	-	-	-	-	14
2010	18	1	3	3	6	1	-	-	-	-	-	-	-	32
2011	5	1	3	2	3	-	1	-	-	-	-	-		16
2012	-	2	-	7	1	-	2	1	-	-	-	-	-	13
2013	-	1	2	3	7	2	-	-	-	-	-	-	-	15
2014	-	1	6	4	2	-	1	-	-	-	-	-	-	14
2015	-	-	3	3	1	4	1	-	-	-	-	-	-	12
2016	-	2	2	4	5	-	2	2	-	-	-	-	-	13
Total														515

Table 4 Gives the state wise distribution of contribution during 1999-2016 the total 522 contributions, the highest number of contribution 465 (89%) were published by the Authors of India, followed by 11 contributions 11 (2%) by USA, 5 (0.95%) by U.K contribution, there papers each were contributed by the contributors of Italy, China, Europe, Moscow and South Asia. Two papers each are contributed by the people of Bangladesh, Pakistan and Germany. Rest of the states in the list contributed only one paper during the period 1999-2016.

Table 5 describe the length of article published in the Indian Historical Review during the period 1999-2016. It found that maximum number of papers

Fig. 4:

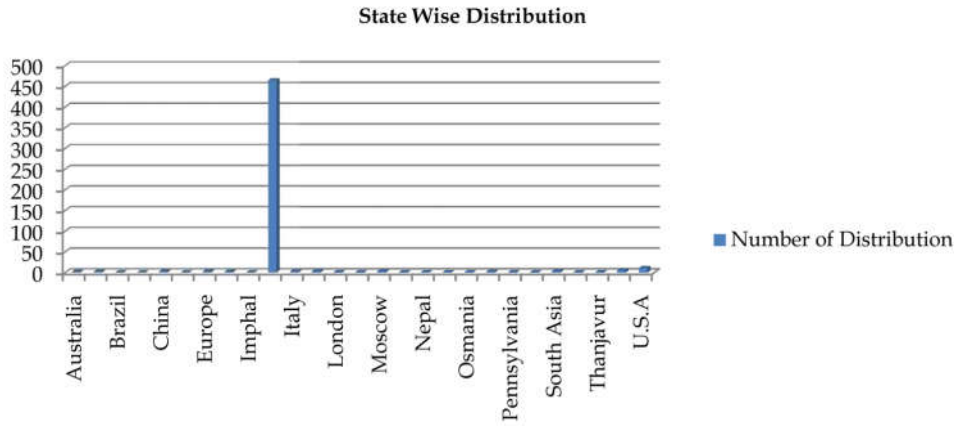
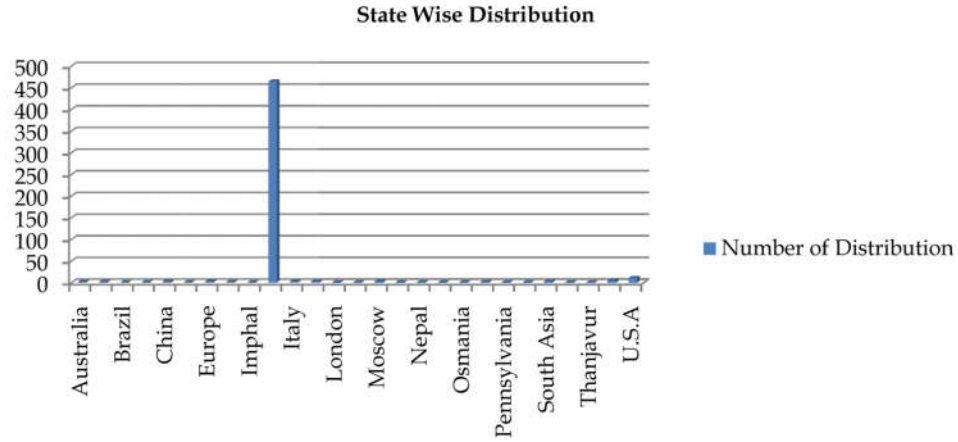


Fig. 5:



i.e. 276 (53%) are published in 0-5 pages, followed by 59 (11%) are published in between 16-20 pages of length. Page length 21-25 occupied the third place 46 (8.93%) articles. None of the article in published in between 46-50, 61-65 pages during 1999 to 2016. However, only one paper is published in 56-60 pages.

Major Findings

1. The maximum number of article, were published in 2007, which is 68(13%).
2. The maximum number of articles i.e. 503 (97.66%) were written by one author, followed by 10 (6.62%) were contributed by Two author. Whereas only 2 (0.38%).
3. The maximum 68 (13.71%) were written by one author, followed by 2 (20%) were contributed by two author where as only 2 (100%) were contributed by Three authors.
4. The maximum contribution of State wise distribution i.e. 465 (89%) India and The minimum contribution of state wise distribution 1 (0.19%) Brazil, England, Canada, London etc.
5. The maximum research papers i.e. 276 were published in between 0 to 5 pages during 1999-2016, followed in between 16-20 pages.

Conclusion

Bibliometrics studies include studies of the growth of the literature in some subject, how much literature is contributed by various individuals, groups, or organizations or countries; how much exists in various languages; how the literature on some subject is scattered and how quickly the literature, on some subjects become out-of-date. On the basis of analysed data such as articles published, authorship pattern, state wise distribution and length of articles, The Indian Historical Review published 515 articles in 18 years from 1999 to 2016. In authorship pattern maximum number of articles i.e. 503 were published by single author. The maximum number of articles were published in volume 34 (68) during the year 2004. The salient feature that emerged in county wise publication is that, India is the main contributor in The Indian Historical Review whose authors

contributed a huge number of articles i.e. 465, followed by USA which is recorded only 11. It has also been observed that maximum papers during 2007 were published in between 0 to 5 pages which is recorded as 46.

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Information Needs of Distance Learners of Bangladesh Open University: A Study

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Abstract

This study tries to explore the information needs of distance Learners of Bangladesh Open University. It examines the reasons that are involved behind arising from distance learners various information needs. It tries to specify the sources that the distance learners use to meet their different information needs. The study finds that distance learners need various information for pursuing education as well as the learners of formal educational institutions. It also finds that distance learners information needs are arise always maintaining the theory provides by Robert S. Taylor, N.J. Belkin, R.N. Oddy, H.M. Brooks, B. Dervin, Nilan and C.C. Kuhlthau. Finally the study traces out the problems that the distance learners faced for getting their required information.

Keywords: Bangladesh Open University; Distance Education; Information Needs; Library Services.

Introduction

At present, human civilization is passing such an era where information and use of information play vital role. Every man or person uses information for performing every activity related to daily personal life, individual progress, proper communication, social welfare, economic development, political awareness etc. In short, information is necessary for all step or phase of life every time, every where, whenever someone wants to do anything or initiated to act any function for his/her survivals. Considering this, information is regarded as resources. It is such an important component that helps to develop, to enrich, to enlighten human life. The creation and application or use of information is not a new phenomenon. From the early age when the communication process began by human beings, the information is used as a communication tool and helps to share, to transfer ideas from one person to another, one generation to another and took part in creating new knowledge in making decisions and in solving problems. But information is valueless until it is exactly relevant to the needs. In other words, information need is the basic thing that inspired someone to search, to find out something for meeting any goal. Information is used or the necessity of searching and collecting information is arising while the information need creates i.e. based on the information needs, search and use of information begin. Information need is an express or unexpressed statement where a person or group of persons has an intention to display or try to present the necessity of information required for achieving specific or more objectives, goals and tasks. On the basis of information needs the activities of searching, locating, identifying, obtaining, recalling and disseminating of information started. Information needs are regarded as the inner motivation of human body and mind that are disclosed or wanted to be disclosed while information is treated as the only key component for improving and developing a situation. Because of the information need, people inspired, initiated and felt the necessity of using information. The concept information need was coined by an American information scientist Robert. S. Taylor in an article namely "The process of asking questions"[1]. Kuhlthau (1993) defines Information needs as

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stemming from a vague awareness of something missing and as culminating in locating information that contributes to understanding and meaning [2]. In 1982, Belkin, Brooks & Oddy define information need is an anomalous state of knowledge [3]. Dervin and Nilan explained information need "a gap in individual's knowledge in sense making situations" in 1986 [4].

Like traditional learners, distance learners need information for completing each and every activity related to acquire knowledge and to conduct their education properly. Without any prior instruction or guidance provided by any instructor, the distance learners form information need to do his/her defined task. For that reason, every distance learner needs to give special considerations while designing the area of information need. Library, study centre, instructor, departmental office and notice board, radio and TV news are the main source where they search for getting their required information. Distance learners feel the necessity of information related with various subjects, fields or areas of interest. In Bangladesh, the activities of distance education began by the Bangladesh Open University (BOU). It played a pioneering role to familiar this type of education system throughout the country. From the beginning, BOU takes various remarkable initiatives such as develop course curriculum, student support services, mode of education etc. to establish and popularize this education among the mass people of this country. But BOU provides less emphasis on the identification of distance learner's information needs, an important component of designing any user-oriented system. As a result, the decisions or plans taken by BOU are less accepted by the learners. In most cases, these plans are not convenient to the distance learners' community regarding their necessity, objectives and economic status. It cannot able to develop the information disseminating processes that are suitable highly for the distance learners till today. Considering all these aspects, this study has been done to help BOU in making decisions and solving problems as well as for the development of the distance education systems in Bangladesh.

Objectives of this study

The objectives of this study are;

a. to trace out the reasons of arising information needs of distance learners.
b. to find out the information needs of distance learners.
c. to specify the sources that are used by the distance learners to get their required information.
d. to identify the problems that are faced by the distance learners for getting information

Methods

The core objective of this study is to know the information needs of distance learners of Bangladesh Open University. It also tries to find out the techniques that the BOU learners used to meet their different categories of information needs. From this point, this study is an exploratory one that deals qualitative data only. In the academic year 2015-16, about 4535 students got admission under BA/BSS program 2nd year in RRC, Rajshahi [5]. All those students under BA/BSS program 2nd year are regarded as population for this study. Out of 9 Regional Resource Centres (RRC) only RRC, Rajshahi is chosen purposively for this study. From the population, only 200 students (male 150 and female 50) of this program are treated as a sample for this study purposively. The core data of this study has been collected with the help of a structured questionnaire. Both open and close-ended questions are included in the questionnaire. Besides questionnaire, interview and observation methods are used to collect data for this study. The secondary data has also been gathered through consulting high officials and staffs of BOU. The theoretical framework of this study has been developed by reviewing existing literature relevant to the study area like books, journals, newspaper, articles etc. All the collected data has been analyzed with the help of Excel by using computer and presented in theoretical and tabular forms.

Results

The Table 1 shows that all the investigated distance learners mention the necessity of new information is the main reason for the arisen of their information need. About 87% learners opine that they feel information needs for improving the current state of knowledge. On the other hand, 93.5% mention that solving the problems at hand is the reason for arising their information need. From the Table 1 it is also said that 83% distance learners indicate expanding the information presently obtained is the reason for arising their information need. Moreover, 89% feel the necessity of information to validating the information presently known and 84.5% require information for clarifying the information that they obtained from different sources.

Table 2 presents that most of the distance learners (59.5%) need information daily. About 23% distance learners feel the need of information weekly while only 17.5% requires information monthly.

Table 3 depicts that most of the distance learners i.e. 77.5% need academic information almost always. About 75% surveyed respondents opine that they require instruction information almost always while 74.5% need facilities information. On the other hand, 64.5% distance learners express that they need documentary information almost always. It is also found from the table 3 that 61% distance learners need library information almost always. The table 3 also shows that 24.5% distance learners need contact information frequently while academic information is needed frequently by the 20% distance learners. About 9% distance learners opine that they need library information sometimes while only 6% mention that they need instruction information sometimes.

Table 4 reveals that the highest number of respondents i.e. 85% needs institutional information for knowing the authenticity of the institute. Out of 200 sample learners, 179 (89.5%) opine that they require institutional information for removing confusions while 69% need this type of information for identifying goodwill or reputations. About 47% respondents say that they require institution information for knowing the reasons behind the establishment of the institute. On the other hand, about 35% opine that they need this information for specifying uniqueness of the institution.

Table 5 indicates that 25.5% distance learners need information regarding location sometimes while 59.5% need such information occasionally and 9.5% frequently. About 32.5% learners respond that they need vision and mission of the institution sometimes while 39% need information regarding vision and mission occasionally and 6.5% frequently. From the Table 5 it is also said that 12.5% sample respondents need history and biography of the institution frequently while 51% need this information occasionally and 18% hardly ever. The Table 5 also presents that 14.5% distance learners need information regarding ranking sometimes. On the other hand, only 13.5% learners feel the need of information related to the future plan of the institution sometimes and 44% need this type of information occasionally.

Table 6 shows that 94.5% distance learners need contact information for sharing ideas with someone. On the other hand 91.5% respondents need such type of information for solving a problem. About 88.5% sample learners opine that they need this information for gaining clear concept of a matter. The Table 6 also mentions that 87.5% respondents need this information for getting instruction from someone. A larger number of sample respondent i.e. 85.5% specify that they need contact information for receiving information from someone.

Table 7 refers that 53.5% distance learners need individual information sometimes while 21% need such information occasionally and 9.5% need frequently. The Table 7 also presents that 61.5% respondents need institutional information sometimes. On the other hand, 19% learners require institutional information occasionally and 7.5% need this type of information frequently.

The Table 8 indicates that majority numbers of respondent i.e. 83.5% need academic information for knowing teaching-learning activities. About 81.5% distance learners require such information to inform academic notice. On the other hand, 83.5% sample respondents opine that they need academic information to know the personal progress. About 68% learners respond that they require academic information for estimating cost, expenditure, and grant. The table 8 also presents that the higher numbered respondent i.e. 76% need information related to academic for developing their study plan.

Table 9 presents that higher portion of distance learners i.e.44.5% need information related to education systems occasionally while 21.5% need such information sometimes and only 19.5% frequently. 57% learners need administration and registration oriented information frequently. About 44.5% learners opine that they need information regarding course curriculum frequently. The Table 9 also shows that 36.5% distance learners need information related to academic supports & facilities sometimes while 26.5% need this type of information almost always. About 49.5% learners mention that they need information regarding date of examination, result & transcript frequently while 51.5% opine that they need fees and finances oriented information frequently. Information regarding scholarship and financial aid is needed by 50.5% sample respondents sometimes, on the other hand, a larger portion of learners (46.5%) mention that they need information regarding seminar and workshops hardly ever.

From the Table 10, it is said that 90% distance learners need library and study facilities while only 25% need training facilities. About 84.5 sample respondents opine that they need computer and IT facilities on the other hand 75% need laboratory facilities. The Table 10 also shows that sample learners (69%) need counseling facilities. Only 29.5% learners say that they need online learning and 35% need audio and video conferencing facilities. From the Table 10, it is said that a higher number of

respondents i.e. 54.5% sample learners do not need online learning facilities and 41.5% comments negative regarding audio and video conferencing facilities. The Table 10 also presents that a larger portion of respondents (68.5%) need media services.

The Table 11 indicates that 61% sample respondent need instruction information for preparing assignment. About 70% respondents opine that they need instruction information for knowing procedures required to do a defined task. A larger portion of learners i.e. 70.5% need instruction information for gaining clear concept of a matter while 64% need this type of information for submitting the assignment. The higher numbers of respondents i.e. 72% mention that they need instruction information for using library properly. The Table 11 also reveals that only 33% distance learner need instruction information for searching materials from the internet.

From the Table 12, it is said that the larger number of respondents i.e.86% need library related information for reading. As reflected in the table, there was only 23% learners need library related information for recreation and only 26% for browsing. About 83% learners opine that they need information regarding library resources. The Table 12 also presents that out of 200 sample respondents, the higher number of learners i.e. 87.5% need information for lending documents from the information centre or library.

The Table 13 shows that higher number of student i.e. 90.5% learners need information regarding library collection. About 98.5% sample learners opine that they need information related to library services. From the Table 13 it is clear that majority of the respondents i.e. 67% do not need information regarding library websites. On the other hand, about 76.5% learners opine that they need information related to library fees and other charges, membership etc. The Table 13 also presents that 90.5% respondents need information about library equipment while only 16.5% need information regarding training. A large number of students i.e. 90% require information about the library facilities while 82% marks that they need information on library rules and regulations.

Table 14 reveals that out of 200, a higher number of distance learners i.e. 94.5% needs documentary information for knowing clear concepts on a subject or a topic. About 89% learners opine that they need documentary information for preparing answer to a defined question while only 6% mention that they do not need documentary information for knowing procedures required to do a defined task. The Table 14 also shows that 87% sample respondents' needs documentary information for preparing assignment and tutorials. As observed, there was indeed clear concept regarding the necessity of documentary information where only 8% learners mention that they do not need this type of information for searching, locating and identifying a document.

Table 15 refers that higher number of respondent i.e. 79.5% needs bibliographical information. About 68% learners opine that they need catalog for getting documentary information. Only 10% sample respondent mention that they require index while only 14.5% need abstract for getting needed documentary information. It is said from the Table 15 that only 7% respondents need current awareness list. About 14% sample learners specify that they need content page for meeting documentary information. The Table 15 also represents that a large portion of respondents i.e. 60.5% and 53.5% do not mention any comment regarding index and abstract respectively. On the other hand, 29.5% and 32% learners do not need index and abstract for getting documentary information.

TheTable 16 shows that 30.5% sample respondent use public library almost always while 46.5% uses this source frequently. About 48% learners go to RRC frequently for information on the other hand 34% go there almost always for the same purposes. A higher number of respondents i.e. 39% & 31.5% opine that they use radio and TV almost always and frequently respectively. As reflected in the table 16, there was a real situation is that BOU central library is used hardly ever by all of the sample learners. As a formal source study centre is used almost always by 35.5% sample respondents while 41% uses that source frequently. The Table 16 also indicates that 43% distance learners go to coordination office for information frequently while 27.5% go almost always for that purpose.

The Table 17 shows that 10.5% distance learners consult with library staff, instructors and experts as informal sources almost always while 19.5% & 57% use these sources frequently and sometimes respectively. As an informal source only 2.5% sample learners communicate outside learners from formal education system almost always on the other hand 23.5% communicate with this source occasionally. The larger portion of learners i.e. 58.5% opine that they consult with outside learners from formal education system hardly ever. About 37.5% respondents opine that they discuss with classmates occasionally for meeting their different information needs. The Table 17 also indicates that most of the distance learners i.e. 97.5% attend seminar and workshop as informal sources hardly ever for meeting their information need.

Table 1: Reasons involved with arising information need

Name of reasons	Strongly disagree	Disagree	No opinion	Agree	Strongly agree	Mean
The need to solve a problem at hand	0	8 (4%)	5 (2.5%)	64 (32%)	123 (61.5%)	4.51
The need for new information	0	0	0	48 (24%)	152 (76%)	4.76
The need to increase the current stage of knowledge	0	11 (5.5%)	15 (7.5%)	42 (21%)	132 (66%)	4.48
The recognition of the existence of uncertainty	0	14 (7%)	23 (11.5%)	87 (43.5%)	76 (38%)	4.13
The need to clarify the information obtained	0	22 (11%)	9 (4.5%)	55 (27.5%)	114 (57%)	4.53
The need to validate the information presently known	0	13 (6.5%)	17 (8.5%)	69 (38.5%)	101 (50.5%)	4.29
The need to expand the information presently obtained	0	19 (9.5%)	15 (7.5%)	46 (23%)	120 (60%)	4.34

Table 2: Frequency of arising information need

Category	No. of respondent	Percentage (%)
Daily	119	59.5
Weekly	46	23
Monthly	35	17.5
Never	0	0

Table 3: Types of information required

Types of information	Hardly ever	Occasionally	Sometimes	Frequently	Almost always	Mean
Institutional information	125 (62.5%)	24 (12%)	23 (11.5%)	8 (4%)	20 (10%)	1.87
Contact information	82(41%)	52 (26%)	27 (13.5%)	29 (24.5%)	10 (5%)	2.17
Academic information	0	0	5 (2.5%)	40 (20%)	155 (77.5%)	4.75
Facilities information	0	0	4 (2%)	47 (23.5%)	149 (74.5%)	4.73
Instruction information	0	0	12 (6%)	38 (19%)	150 (75%)	4.69
Library information	0	06 (3%)	18 (9%)	54 (27%)	122 (61%)	4.46
Documentary information	0	4 (2%)	18 (9%)	49 (24.5%)	129 (64.5%)	4.52

Table 4: Reasons behind the necessity of institutional information

Category	Strongly disagree	disagree	No opinion	agree	Strongly agree	Mean
For knowing the reasons behind the establishment of the institute	26 (13%)	47 (23.5%)	33 (16.5%)	37 (18.5%)	57 (28.5%)	3.26
For specifying uniqueness	39 (19.5%)	55 (27.5%)	36 (18%)	25 (12.5%)	45 (22.5%)	2.91
For removing confusions	3(1.5%)	3(1.5%)	15 (7.5%)	69 (34.5%)	110 (55%)	4.40
For knowing authenticity of the institute	0	7 (3.5%)	23 (11.5%)	44(22%)	126 (63%)	4.45
For identifying goodwill or reputations	10(5%)	23 (11.5%)	29 (14.5%)	49 (24.5%)	89 (44.5%)	3.92

Table 5: Category of institutional information need

Category	Hardly ever	Occasionally	Sometimes	Frequently	Almost always	Mean
History and biography of the institution	36 (18%)	102 (51%)	27 (13.5%)	25 (12.5%)	10 (5%)	2.36
Vision and mission	33 (16.5%)	78 (39%)	65 (32.5%)	13 (6.5%)	11 (5.5%)	2.46
Achievements	56 (28%)	120 (60%)	16 (8%)	5 (2.5%)	3 (1.5%)	1.90
Organizational charts	28 (14%)	157 (78.5%)	9 (4.5%)	4 (2%)	2 (1%)	1.98
Location	4 (2%)	119 (59.5%)	51 (25.5%)	19 (9.5%)	7 (3.5%)	2.53
Ranking	68 (34%)	95 (47.5%)	29 (14.5%)	5 (2.5%)	3 (1.5%)	1.90
Future plan	73 (36.5%)	88 (44%)	27 (13.5%)	8 (4%)	4 (2%)	1.91
Sustainability	75 (37.5%)	107 (53.5%)	16 (8%)	2 (1%)	0	1.73

Table 6: Reasons behind the necessity of contract information

Reasons	Strongly disagree	disagree	No opinion	Agree	Strongly agree	Mean
For getting instruction from someone	2 (1%)	9 (4.5%)	14 (7%)	51 25.5%)	124 (62%)	4.43
For receiving information from someone	6 (3%)	10 (5%)	13 (6.5%)	33 16.5%)	138 (69%)	4.44
For sharing ideas to someone	2 (1%)	4 (2%)	5 (2.5%)	42 (21%)	147 (73.5%)	4.64
For making decision by consensus	17 (8.5%)	23(11.5%)	27 (13.5%)	45 22.5%)	88 (44%)	3.82
For solving a problem	5 (2.5%)	6 (3%)	6 (3%)	39 19.5%)	144 (72%)	4.56
For gaining clear concept about a matter	3 (1.5%)	5 (2.5%)	15 (7.5%)	36 (18%)	141(70.5%)	4.54

Table 7: Category of contract information need

Category	Hardly ever	Occasionally	Sometimes	Frequently	Almost always	Mean
Individual: Name, Position, Designation, Phone number, Postal address, E-mail address	17 (8.5%)	42 (21%)	107 (53.5%)	19 (9.5%)	15 (7.5%)	2.87
Institutional: Postal address, E-mail address, Website address	11 (5.5%)	38 (19%)	123 (61.5%)	15 (7.5%)	13 (6.5%)	2.91

Table 8: Reasons behind the necessity of academic information

Reasons	Strongly disagree	disagree	No opinion	Agree	Strongly agree	Mean
To know teaching learning activities	5(2.5%)	12(6%)	16(8%)	48 (24%)	119 (59.5%)	4.32
To inform academic notice	8(4%)	9(4.5%)	20 (10%)	42 (21%)	121 (60.5%)	4.3
To know personal progress	5(2.5%)	11(5.5%)	17 (8.5%)	51 (25.5%)	116(58%)	4.31
To develop study plan	4(2%)	25 (12.5%)	19 (9.5%)	55 (27.5%)	97(48.5%)	4.08
To estimate cost, expenditure and grant	26 (13%)	22(11%)	16(8%)	63 (31.5%)	73 (36.5%)	3.68

Table 9: Category of academic information need

Category	Hardly ever	Occasionally	Sometimes	Frequently	Almost always	Mean
Education systems	3 (1.5%)	89(44.5%)	43(21.5%)	39(19.5%)	26(13%)	2.98
Admission & registration	0	0	15 (7.5%)	114 (57%)	71(35.5%)	4.28
Course curriculum	3 (1.5%)	5(2.5%)	76 (38%)	89 (44.5%)	27(13.5%)	3.66
Academic supports & facilities	5 (2.5%)	30(15%)	73 (36.5%)	39 (19.5%)	53 (26.5%)	3.53
Date of examination, result & transcript	7 (3.5%)	10 (5%)	28 (14%)	99 (49.5%)	56 (28%)	3.94
Fees and finances	5 (2.5%)	9(4.5%)	46 (23%)	103 (51.5%)	37 (18.5%)	3.79
Scholarship and financial aid	25 (12.5%)	52(26%)	101 50.5%)	12 (6%)	10 (5%)	2.65
Seminar and workshops	93 (46.5%)	64(32%)	25 (12.5%)	13 (6.5%)	5(2.5%)	1.87

Table 10: Reasons behind the necessities of information related to facilities

Category	Strongly disagree	disagree	No opinion	Agree	Strongly agree	Mean
Training	89 (44.5%)	34 (17%)	27 (13.5%)	24 (12%)	26 (13%)	2.12
Counseling	18 (9%)	21 (10.5%)	23 (11.5%)	101 (50.5%)	37 (18.5%)	3.59
Computer and IT facilities	4 (2%)	6 (3%)	21 (10.5%)	76 (38%)	93 (46.5%)	4.24
Library & Study facilities	3 (1.5%)	7 (3.5%)	10 (5%)	83 (41.5%)	97 (48.5%)	4.32
Laboratory facilities	9 (4.5%)	13 (6.5%)	28 (14%)	69 (34.5%)	81 (40.5%)	4.00
On line learning	63 (31.5%)	46 (23%)	32 (16%)	26 (13%)	33 (16.5%)	2.60
Audio and video conferencing	44 (22%)	39 (19.5%)	47 (23.5%)	36 (18%)	34 (17%)	2.89
Media services	16 (8%)	22 (11%)	25 (12.5%)	98 (49%)	39 (19.5%)	3.61

Table 11: Reasons behind the necessities of instruction information

Category	Strongly disagree	disagree	No opinion	Agree	Strongly agree	Mean
For preparing assignment	14 (7%)	29 (14.5%)	35 (17.5%)	52 (26%)	70 (35%)	3.68
For using library properly	6 (3%)	23 11.5%)	27 (13.5%)	79 (39.5%)	65 (32.5%)	3.87
For filling up application form	35 (17.5%)	33 16.5%)	39 (19.5%)	51 (25.5%)	42 (21%)	3.16
For searching materials from the internet	37 (18.5%)	46 (23%)	51 (25.5%)	39 (19.5%)	27 (13.5%)	2.87
For submitting assignment	12 (6%)	23 11.5%)	37 (18.5%)	45 (22.5%)	83 (41.5%)	3.82
For gaining clear concept about a matter	10 (5%)	21 10.5%)	28 (14%)	64 (32%)	77 (38.5%)	3.89
For knowing procedures required to do a defined task	11 (5.5%)	12 (6%)	37 (18.5%)	69(34.5%)	71 (35.5%)	3.89

Table 12: Reasons behind the necessities of library-related information

Category	Strongly disagree	disagree	No opinion	Agree	Strongly agree	Mean
For reading	4 (2%)	5 (2.5%)	19 (9.5%)	45 (22.5%)	127 (63.5%)	4.43
For information	5 (2.5%)	7 (3.5%)	21 (10.5%)	73 (36.5%)	94 (47%)	4.22
For recreation	31 (15.5%)	74 (37%)	49(24.5%)	26 (13%)	20 (10%)	2.65
For browsing	37 (18.5%)	68 (34%)	43 (21.5%)	29 (14.5%)	23 (11.5%)	2.67
For lending documents	3 (1.5%)	8 (4%)	14 (7%)	89 (44.5%)	86 (43%)	4.24
For knowing about library resource etc.	7 (3.5%)	11 (5.5%)	16 (8%)	75 (37.5%)	91 (45.5%)	4.16

Table 13: Category of library-related information need

Category	Strongly disagree	disagree	No opinion	Agree	Strongly agree	Mean
Library hours	23 (11.5%)	44 (22%)	36 (18%)	41 (20.5%)	56 (28%)	3.32
Use of the library	14 (7%)	11 (5.5%)	38 (19%)	67 (33.5%)	70 (35%)	3.84
Library collections	0	6 (3%)	13 (6.5%)	85 (42.5%)	96 (48%)	4.36
Library services	0	0	3 (1.5%)	94 (47%)	103 (51.5%)	4.5
Library equipment	1 (0.5%)	7 (3.5%)	11 (5.5%)	83 (41.5%)	98 (49%)	4.35
Library facilities	0	6 (3%)	14 (7%)	89 (44.5%)	91 (45.5%)	4.33
Library rules and regulations	7 (3.5%)	9 (4.5%)	20 (10%)	78 (39%)	86 (43%)	4.14
Training	70 (35%)	59 (29.5%)	38 (19%)	24 (12%)	9 (4.5%)	2.22
Library fees and other charges, membership etc.	5 (2.5%)	11 (5.5%)	31 (15.5%)	84 (42%)	69 (34.5%)	4.01
Library web sites.	66 (33%)	68 (34%)	37 (18.5%)	17 (8.5%)	12 (6%)	2.12

Table 14: Reasons behind the necessities of documentary information

Category	Strongly disagree	disagree	No opinion	Agree	Strongly agree	Mean
For knowing clear concepts on a subject or a topic	0	5 (2.5%)	6 (3%)	68 (34%)	121 (60.5%)	4.53
For preparing answer of a defined question	3 (1.5%)	8 (4%)	11 (5.5%)	69 (34.5%)	109 (54.5%)	4.37
For preparing assignment, tutorials	4 (2%)	6 (3%)	16 (8%)	61 (30.5%)	113 (56.5%)	4.37
To search, locate or identify a document	9 (4.5%)	7 (3.5%)	5 (2.5%)	72 (36%)	107 (53.5%)	4.31
For knowing procedures required to do a defined task	3 (1.5%)	9 (4.5%)	21 (10.5%)	75 (37.5%)	92 (46%)	4.22

Table 15: Category of documentary information need

Category	Strongly disagree	disagree	No opinion	Agree	Strongly agree	Mean
Bibliographical information	7(3.5%)	11(5.5%)	23(11.5%)	72(36%)	87(43.5%)	4.11
Catalog	11(5.5%)	17(8.5%)	36(18%)	59(29.5%)	77(38.5%)	3.87
Index	22(11%)	37(18.5%)	121(60.5%)	11(5.5%)	9(4.5%)	2.74
Abstract	16(8%)	48(24%)	107(53.5%)	16(8%)	13(6.5%)	2.81
Current awareness list	27(13.5%)	45(22.5%)	114(57%)	9(4.5%)	5(2.5%)	2.60
Content page	21(10.5%)	33(16.5%)	118(59%)	17(8.5%)	11(5.5%)	2.82

Table 16: Use of formal information sources

Category	Hardly ever	Occasionally	Sometimes	Frequently	Almost always	Mean
BOU central library	200(100%)	0	0	0	0	1.00
Daily newspaper	7(3.5%)	47(23.5%)	22(11%)	69 (34.5%)	55 (27.5%)	3.59
Radio and TV	0	8(4%)	51(25.5%)	63 (31.5%)	78(39%)	4.06
Internet	129 (64.5%)	26(13%)	19(9.5%)	15(7.5%)	11 (5.5%)	1.77
Regional Resource Centre (RRC)	0	8(4%)	28(14%)	96(48%)	68(34%)	4.12
Public library	10(5%)	11(5.5%)	25(12.5%)	93 (46.5%)	61 (30.5%)	3.92
Coordinating office	9(4.5%)	17(8.5%)	33(16.5%)	86(43%)	55 (27.5%)	3.81
Study centre	6(3%)	13(6.5%)	28(14%)	82(41%)	71 (35.5%)	4.0

Table 17: Use of informal information sources

Category	Hardly ever	Occasionally	Sometimes	Frequently	Almost always	Mean
Consultation with library staff, instructors and experts	9 (4.5%)	17 (8.5%)	114 (57%)	39 (19.5%)	21 (10.5%)	3.23
Outside learners from formal education system	117 (58.5%)	47 (23.5%)	19 (9.5%)	12 (6%)	5 (2.5%)	1.71
Discussion with classmates	13 (6.5%)	75 (37.5%)	56 (28%)	37 (18.5%)	19 (9.5%)	2.87
Attend seminar and workshop	195 (97.5%)	5 (2.5%)	0	0	0	1.03

Table 18: Level of satisfaction regarding information obtained from different sources

Category	Respondents	Percentage (%)
Very satisfied	0	0
Satisfied	11	5.5
Less satisfied	34	17
Dissatisfied	155	77.5

Table 19: Problems faced to meet information need

Category	Respondents	Percentage
Lack of instruction and guidance facilities	164	84%
Lack of counseling support	138	69%
Inadequate library and information services and facilities of BOU	169	84.5%
Absence of permission for using libraries of formal educational institution	148	74%
Shortage of information and communication technology facilities	136	68%
Unavailability of lending facilities	167	83.5%
Improper information dissemination process	164	82%

Table 20: Problems faced to meet information need

Category	7	6	5	4	3	2	1	Respondents
Lack of instruction and guidance facilities	10 (5%)	13(6.5%)	20(10%)	35(17.5%)	30(15%)	28(14%)	32(16%)	168(84%)
Lack of counseling support	24(12%)	38(19%)	19(9.5%)	16(8%)	17(8.5%)	13(6.5%)	11(5.5%)	138(69%)
Inadequate library and information services and facilities of BOU	3(1.5%)	17(8.5%)	16(8%)	32(16%)	33(16.5%)	31(15.5%)	37(18.5%)	169(84.5%)
Absence of permission for using libraries of formal educational institution	5(2.5%)	7(3.5%)	15(7.5%)	27(13.5%)	23(11.5%)	40(20%)	31(15.5%)	148(74%)
Shortage of information and communication technology facilities	34(17%)	32(16%)	29(14.5%)	16(8%)	10(5%)	8(4%)	7(3.5%)	136(68%)
Unavailability of lending facilities	6(3%)	19(9.5%)	22(11%)	26(13%)	36(18%)	28(14%)	30(15%)	167(83.5%)
Improper information dissemination process	12 (6%)	13 (6.5%)	38 (19%)	32 (16%)	25 (12.5%)	18 (9%)	26 (13%)	164 (82%)
	94	139	159	184	174	166	174	1090

Note: 1 = number-1 problem treated by respondents; 2 = number-2 problems treated by respondents and so forth.

The Table 18 presents that the larger portion of distance learners i.e.77.5% are not satisfied regarding the information got from different formal and informal sources. Only 5.5% sample learners opine that they are satisfied with the information gathered from different sources. Out of 200 sample only 34 i.e. 17% mention that they are less satisfied with the information sources used for meeting their different information needs. The Table 18 also shows that no one of the sample learners is very satisfied regarding the information received from different sources.

The Table 19 indicates that the higher number of distance learners i.e. 84.5% suffer to meet required information because of inadequate library and information services and facilities of BOU. About 84% learners opine that because of the lack of instruction and guidance facilities distance learners cannot meet their required information properly. 83.5% sample learners mention that unavailability of lending facilities is an important factor that hindered to get their information properly. The Table 19 also mentions that 82% sample learners faced problem in getting information because of improper information dissemination process. About 69% learners say that lack of counseling support is the reason that hindered them in getting their required information. A large portion of respondents i.e. 74% specifies that they cannot meet their required information because of the absence of permission for using libraries of the formal educational institution. About 68% learners mentioned that the shortage of information and communication technology facilities is the problem for getting their required information.

Findings of the study

1. All the distance learners feel the necessity of information need. Various reasons are involved to arise these information need. The mean from table 1 proves that getting new information, increasing the current stage of knowledge, solving a problem at hand, expanding the information presently obtained etc. are basic factors that work in arising their information need highly.
2. Maximum distance learners feel the need of information daily.
3. On an average, distance learners need academic, instruction, facilities, library and documentary information. On the other hand, contact and institutional information are needed by the 41% and 62.5% distance learners hardly ever.
4. Distance learners need institutional information for knowing the authenticity of the institute, removing confusions and for identifying goodwill or reputations of the institution.
5. Distance learners need institutional information occasionally. From different categories of information related to the institution, they need vision and mission information, location, future plan, ranking, history, and biography of the institution sometimes.
6. Distance learner needs contact information for sharing ideas with someone, receiving information from someone, solving a problem, gaining clear concept about a matter and for getting instruction from someone.
7. Distance learners need contact information. They feel the necessity of contact information sometimes. Distance learners need both individual (Name, Position, Designation, Phone number, Postal address, E-mail address) information and institutional (Postal address, E-mail address, Website address) information. Distance learners do not need contact information almost always and hardly ever.
8. Distance learners need academic information for various reasons. To know teaching-learning activities are the vital reason for the necessity of their academic information that mentioned by higher numbered respondents i.e. 83.5%. It is also found from this study that distance learners need academic information for informing academic notice, knowing personal progress, developing the study plan and for estimating cost, expenditure, and grant.
9. Distance learners need academic information regarding admission & registration, course curriculum, examination, result, transcript, fees, and finances frequently. Sometimes they need information on academic supports, facilities, scholarship and financial aid. They need information related to education systems occasionally. They need information regarding seminar and workshops hardly ever.
10. Distance learners of BOU need library & study facilities for continuing their study. They need counseling, computer and IT and laboratory facilities also. They do not feel the necessity of online learning and audio and video conferencing facilities highly.
11. Distance learners need instruction for academic purposes such as submitting an assignment, gaining clear concept about a matter, knowing procedures required to do a defined task, preparing assignment etc. They need this type of information for using library properly rather than for searching materials from the internet.

12. Distance learners need information regarding library for reading, for getting information, for lending documents and for knowing about library resource etc. They provide less emphasis in getting library related information for recreation and for browsing.
13. Distance learners need information about library resources, services, equipment and facilities highly rather than the information regarding library websites and training. They also feel the need of information related to library rules and regulations, library fees and other charges, membership, and use of the library.
14. Distance learners need documentary information for knowing clear concepts on a subject or a topic. They also need this type of information for preparing answer to a defined question, assignment, tutorials, for searching, locating or identifying a document and for knowing procedures required to do a defined task.
15. Rather than index, abstract, current awareness list and content page, distance learners need bibliographical information and catalog for getting their documentary information.
16. Learners of BOU use the public library, coordinating office, RRC, study centre, Radio and TV and daily newspaper as formal information sources. They use BOU central library hardly ever.
17. Distance learners consult with library staff, instructors and experts for meeting their information need. They also discuss with classmates for gathering new knowledge and information and for sharing each other required to pursue their education.
18. Distance learners are not satisfied regarding the information they got from different formal and informal sources.
19. The BOU distance learners face various problems when they try to meet their information needs. This study ranks from 1 to 7 of their problems. The table-20 mentions that the top first problem of the distance learners is inadequate library and information services and facilities of BOU. The second problem that they specify is the absence of permission for using libraries of the formal educational institution while the third one is the unavailability of lending facilities.

Conclusion

Compared with other resources, information is treated not only as resources but also as the basic key component that always supports to develop and enrich every person. Without information, man cannot live as they cannot do anything without food, health, cloth, shelter education etc. According to Chen and Hernon, information is all knowledge, ideas, fact, data and imaginative works of mind which are communicated formally and informally in any format [6].

Information is used in tracing, defining and solving problems, in taking decisions, perceiving clear conception, arranging a conversation, offering teaching-learning activities and in doing research for achieving better results or performance and act as a pivot amount which any development revolves or any action performs. Taylor defines seeking answers is an important reason behind the arises of information need of a man/person in 1968 [7].

In 1978, Nicholas j. Belkin, explore that when a person recognizes that there is an anomaly (i.e. a gap or uncertainty) in his/her state of knowledge regarding a situation or topic, then he/she arises information needs [8]. So the availability of sources of information, easy accessibility of information and quick dissemination of information should be ensured to all. All people should have the opportunity to get proper information at the right form at the right time. Distance learners are different from the traditional learners in terms of age, educational qualification, profession, mentality etc. Because of the lack of direct communication and interaction, proper education facilities, direct teaching-learning benefit distance learners cannot get proper direction as traditional students got from formal educational institutions. They need information for completing each and every activity related to acquiring their education properly. Information needs of distance learners are of different kinds. It varies from one to one. The Necessity is the basic object upon which they arise questions and problems and develop or generate problem-solving mechanism. Due to various reasons information needs of a distance learner are different from others. Age is an important factor that influences in creating various categories of information needs. Because of various educational qualifications, the needs of S.S.C, H.S.C, graduate, postgraduate level students are always differ from each other category.

The information needs of students of social science are not the same of students of science. Information needs are also differ from distance learners to learners because of the social position that he or she holds. They need such a teaching- learning environment where each and every learner gets information, document, instruction, guidance, inspiration required to achieve their goal. So BOU needs to trace out

distance learners needs and analyze these to formulate techniques that are helpful to meet learners' information needs easily, quickly and timely with cost-effective and cost benefit.

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Information Seeking Behaviour of Students of Physiotherapy College Libraries in Karnataka: A Study on E-Resources

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Abstract

Due to rapid change in modern technology from traditional to the digital library system. The present paper studies the existence of various changes in the digital world. Digital takeover of recent years has stunned librarianship. Digital environment has become a significant movement in the world of traditional libraries, and increasingly, in the digital library arena. The purpose of this study is to examine the Information Seeking Behaviour of students of Physiotherapy colleges in Karnataka. The study shows that the student's positive side of seeking information in there course related information.

Keywords: Information Seeking Behaviour; E-Books; E-Journals; E-Database; E-Thesis; Subject Portals/ Gateways.

Introduction

We know that the 21st century is regarded as information era and librarians are a not out of it. But the librarians have to keep on changing their professional attributes in order to reach the expectations of their user. Traditional library resources and search tools have been adequately supplemented by the electronic information resource particularly the internet source. The libraries and library professionals have also pass through different changes bring out by human beings due to these different revolutions in our society. Library professionals stated their journey from clay tablets & palm leaves and today reaching towards digital contents of reading materials. According to Urs (2004) - "The metamorphosis of the library professional to information profession largely reflects the shifting in the emphasis and activities aimed at realizing the basic goal of profession- to participate and facilitate the creation transmission and use of knowledge. For example- In pre-Gutenberg era the activities of library profession in its early stages emphasized storage, preservation and achieving of the information materials. The development of printing technology led to easy replacement of information materials and past Gutenberg era, the primary activities centered on collection development and organization of knowledge and in modern ICT based digital era the primary concerned of library professionals are satisfy the users demand and provide current and accurate information to their users."

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Literature Review

Electronic networks and different information formats are changing information access operations worldwide. Morrison & Stein discussed the role of the universities and colleges in preparing students to handle the rapidly expanding range of information formats. Information and knowledge are the high-value tools of the present age. The rise of the internet has led to 'free information services'. Lennonlooks at how 'free' information really is and whether we can continue to expect high-quality information to be available without cost using the internet. Garrod explains and describes that the academic libraries

and library staff need to adapt swiftly to the new learning environment. The changing format of resources is the challenge for the library in preserving and managing, Pandeythrows light on the digital library and traditional library resources and Management and Preservation of these resources. Asproth's study also falls in the same line such as some problem domains of long-term preservation.

Statement of the Problem

"Information Seeking Behaviour of Students of Physiotherapy College Libraries in Karnataka: A Study on E-Resources".

Need for the Study

Users constitute an inseparable and indispensable part of any library and information system. It is often remarked that a library is basically a service institution designed to provide information services to fulfill the information requirements of the community.

Scope and Limitation of the Study

The scope of the study is confined to the Information Seeking Behaviour of Students of Physiotherapy colleges in Karnataka, which are affiliated to Rajiv Gandhi University of Health Sciences Bangalore, Nitte, Yenepoya, and KLE Universities.

Objectives

Identify the impact of E-Resources while seeking information by the students.

Hypotheses

E-resources have positive impact on study activities of the respondents while seeking information.

Methodology

This is very essential for a study to process data analysis them in accordance with the method laid down for the purpose in order to arrive at the possible results. In the present study, the main purpose of the questionnaire was to collect the data about "Information Seeking Behaviour of Students of Physiotherapy College Libraries in Karnataka: A Studyon E-Resources". The data were analyzed using SPSS. The data obtained through the questionnaire were analyzed and interpreted in the following sections.

Data Analysis and Interpretation

The students profile with age group wise distribution is given in Table 1. It is observed that the number of students i.e. 161(15.53) belong to the age group of 17-18 years. This is followed by 447 (43.11) of students in the age group of 19-20 Years and 290 (27.97) in the age group of 21-22 years. Comparatively, lesser number of respondents belongs to higher age groups like 23-24 years 25-26 years

Table 2 shows that year wise distribution of respondents of physiotherapy colleges in Karnataka. Out of 1037 total respondents the highest 315 (30.38 %) of them belongs to 1st year physiotherapy students whereas 299 (28.83 %) respondents belongs to 2nd physiotherapy students and the respondents are from 3rd physiotherapy students 179(17.26 %). 167(16.10%) respondents belong to 4th year physiotherapy students. 46(4.44 %) and 31 (2.99 %) respondents belong to 1st year MPT students and 2nd MPT students respectively.

Out of a total 1037 students in which 738 (71.17%) students are aware of E-Books, in which 670 (69.79%) of BPT Students and 68 (88.31%) of MPT students are aware of E-Books. The difference is found to be statistically significant (chi-square=12.3730, p=0.0020).

- Total of 519 (50.05%) students are aware of E-Journals, in which 450 (46.88%) of BPT students and 69 (89.61%) of MPT students are aware of E-Journals. The difference is found to be statistically significant (chi-square=52.0740, p=0.0001).
- The majority of 349 respondents (33.65%) students are aware of E-Databases, in which 305 (31.77%) of BPT students and 44 (57.14%) of MPT students are aware of E-Databases. The difference is found to be statistically significant (chi-square=20.5510, p=0.0001).The other details are presented in Table 3.

1. The Mean response of students of BPT (2.0± 0.7) and MPT (1.8±0.8) in relation to opinion on E-Journals to their print counterparts on It is easy & convenient to search for information in E-Journals is not found to be statistically significance (0.0050). It seems that the MPT Students and BPT have similar opinion.
2. The Mean response of students of BPT (2.1± 0.6) and MPT (2.0±0.9) in relation to opinion on E-

Journals to their print counterparts on Search time taken to search an article on E-Journals is far lesser than the time taken on print version is found to be statistically significance (0.0490). It means that the BPT Students have significant higher mean scores (2.1= Agree) as compared to MPT students (2.0 Agree) in relation to ratings on opinion on E-Journals to their print counterparts.

- The Mean response of students of BPT (2.0± 0.6) and MPT (1.7±0.7) in relation to opinion on E-Journals to their print counterparts on E-Journals can be accessed by users from their desktops at workplace, hostels, etc is found to be statistically significance (0.0001). It means that the BPT Students have significant higher mean scores (2.0= Agree) as compared to MPT students (1.7 Agree) in relation to ratings on opinion on E-Journals to their print counterparts.The other details are presented in Table 4.

Table 1: Distribution of Age-wise

Age Group (Years)	No. of Students
17-18	161 (15.53)
19-20	447 (43.11)
21-22	290 (27.97)
23-24	95 (9.16)
25-26	44 (4.24)
Total	1037 (100%)

Table 2: Distribution of Class wise

Sl. No.	Class Wise	No. of Respondents	% of the Respondents
1	1st Year BPT	315	30.38
2	2nd Year BPT	299	28.83
3	3rd Year BPT	179	17.26
4	4th Year BPT	167	16.10
5	1st Year MPT	46	4.44
6	2nd Year MPT	31	2.99
	Total	1037	100%

Table 3: Aware of Electronic Resources

E-Resources	BPT	MPT	Total	Chi-square	p-value
E-Books	670 (69.79)	68 (88.31)	738 (71.17)	12.3730	0.0020*
E-Journals	450 (46.88)	69 (89.61)	519 (50.05)	52.0740	0.0001*
E-Databases	305 (31.77)	44 (57.14)	349 (33.65)	20.5510	0.0001*
E-Theses/Dissertations	219 (22.81)	53 (68.83)	272 (26.23)	78.0150	0.0001*
CD-ROM	356 (37.08)	26 (33.77)	382 (36.84)	0.3370	0.5620
Subject Portals/Gateways	204 (21.25)	19 (24.68)	223 (21.50)	0.4950	0.4810
Not aware of e-resources	147 (15.31)	8 (10.39)	155 (14.95)	1.3590	0.2440

Table 4: Opinion on E-Journals compared to their print counterparts

S. N.		Summary	BPT	MPT	Total	Z-value	P-value
1	It is easy & convenient to search for information in E Journals	Mean	2.0	1.8	2.0	-2.8050	0.0050
		SD	0.7	0.8	0.7		
2	Search time taken to search an article on E-Journals is far lesser than the time taken on Print Version	Mean	2.1	2.0	2.1	-1.9660	0.0490*
		SD	0.6	0.9	0.7		
3	E-Journals can be accessed by users from their desktops at Workplace, Hostels, etc	Mean	2.0	1.7	2.0	-4.2340	0.0001*
		SD	0.6	0.7	0.6		
4	E-Journals provide links for other related articles/references in the field	Mean	2.0	1.7	2.0	-4.3050	0.0001*
		SD	0.6	0.6	0.6		
5	Users require assistance while accessing E-Journals	Mean	2.3	2.2	2.3	-0.4280	0.6690
		SD	0.7	0.8	0.7		

- Out of a total 1037 students in which 370 (35.68%) students are aware of PubMed, in which 300 (31.25%) of BPT Students and 70 (90.91%) of MPT students are aware of PubMed. The difference is found to be statistically significant (chi-square=110.5520, p=0.0001).
- Total of 339 (32.69%) students are aware of Science Direct, in which 271 (28.23%) of BPT students and 68 (88.31%) of MPT students are aware of Science Direct. The difference is found to be statistically significant (chi-square=116.9450, p=0.0001).
- The majority of 199 respondents (19.19%) students are aware of Pedro, in which 144 (15.00%) of BPT students and 55 (71.43%) of MPT students are aware of Pedro. The difference is found to be statistically significant (chi-square=146.3670, p=0.0001).The other details are presented in Table 5.
- Out of a total 1037 students in which 243 (23.43%) students use the PubMed, in which 187 (19.48%) of BPT Students and 56 (72.73%) of MPT students use the PubMed. The difference is found to be statistically significant (chi-square=112.6480, p=0.0001).
- Total of 186 (17.94%) students use the Science Direct, in which 130 (13.54%) of BPT students and 56 (72.73%) of MPT students use the Science Direct. The difference is found to be statistically significant (chi-square=169.6410, p=0.0001).The other details are presented in Table 6.
- Out of a total 1037 students in which 233 (22.47%) students are aware and uses the Elsevier, in which 168 (17.50%) of BPT Students and 65 (84.42%) of MPT students are aware and uses the Elsevier. The difference is found to be statistically significant (chi-square=183.2240, p=0.0001).

Table 5: Aware of these Electronic Databases

Databases	BPT	MPT	Total	Chi-square	p-value
PubMed	300 (31.25)	70(90.91)	370(35.68)	110.5520	0.0001*
Science Direct	271(28.23)	68(88.31)	339(32.69)	116.9450	0.0001*
Pedro	144(15.00)	55(71.43)	199(19.19)	146.3670	0.0001*
ProQuest	138(14.38)	26(33.77)	164(15.81)	20.1320	0.0001*
Ebsco	87(9.06)	21(27.27)	108(10.41)	25.3360	0.0001*
Scopus	86(8.96)	23(29.87)	109(10.51)	33.1400	0.0001*
Web of Science	266(27.71)	34(44.16)	300(28.93)	9.3790	0.0020*
Any other	64(6.67)	15(19.48)	79(7.62)	16.6310	0.0001*

Table 6: Use of Electronic Databases

Databases	BPT	MPT	Total	Chi-square	p-value
PubMed	187 (19.48)	56(72.73)	243(23.43)	112.6480	0.0001*
Science Direct	130(13.54)	56(72.73)	186(17.94)	169.6410	0.0001*
Pedro	73(7.60)	38(49.35)	111(10.70)	129.9710	0.0001*
ProQuest	77(8.02)	19(24.68)	96(9.26)	23.5370	0.0001*
Ebsco	45(4.69)	12(15.58)	57(5.50)	16.2950	0.0001*
Scopus	63(6.56)	13(16.88)	76(7.33)	11.1790	0.0010*
Web of Science	159(16.56)	19(24.68)	178(17.16)	3.3000	0.0690
Any other	33(3.44)	10(12.99)	43(4.15)	16.3550	0.0001*

Table 7: Awareness and use E-Journals

Journals	BPT	MPT	Total	Chi-square	p-value
Elsevier	168(17.50)	65(84.42)	233(22.47)	183.2240	0.0001*
Science Direct	71(7.40)	25(32.47)	96(9.26)	53.3390	0.0001*
Wolters Kluwer Health	60(6.25)	29(37.66)	89(8.58)	89.6480	0.0001*
BMJ	303(31.56)	40(51.95)	343(33.08)	13.3820	0.0001*
Wiley Online Library	249(25.94)	65(84.42)	314(30.28)	115.4670	0.0001*
Springer	39(4.06)	45(58.44)	84(8.10)	283.1600	0.0001*
Oxford University Press	61(6.35)	40(51.95)	101(9.74)	168.5610	0.0001*
Any other	168(17.50)	65(84.42)	233(22.47)	52.0890	0.0001*

- Total of 96 (9.26%) students are aware and uses the Wolters Kluwer Health, in which 71 (7.40%) of BPT students and 25 (32.47%) of MPT students are aware of and uses the Wolters Kluwer Health. The difference is found to be statistically significant (chi-square=53.3390, p=0.0001).The other details are presented in Table 7.
- Out of a total 1037, 685 (66.06%) students are agree on Opinion on Positive Impact E-Databases, E-Journals and CD-ROM, in which 652(67.92%) of BPT students. However maximum of 39 (50.65%) of MPT students strongly agree on Opinion on Positive Impact E-Databases, E-Journals and CD-ROM. Followed by Uncertain, Disagree, and Strongly Disagree. The difference is found to be statistically significant (chi-square=77.1902, p=0.0001).

Table 8: Opinion on Positive Impact E-Databases, E-Journals and CD-ROM databases on the respondents study

Impact	BPT	MPT	Total
Strongly Agree	125(13.02)	39(50.65)	164(15.81)
Agree	652(67.92)	33(42.86)	685(66.06)
Uncertain	152(15.83)	5(6.49)	157(15.14)
Disagree	26(2.71)	0(0.00)	26(2.51)
Strongly Disagree	5(0.52)	0(0.00)	5(0.48)
Total	960(100.00)	77(100.00)	1037(100.00)

Chi-square=77.1902 p=0.0001

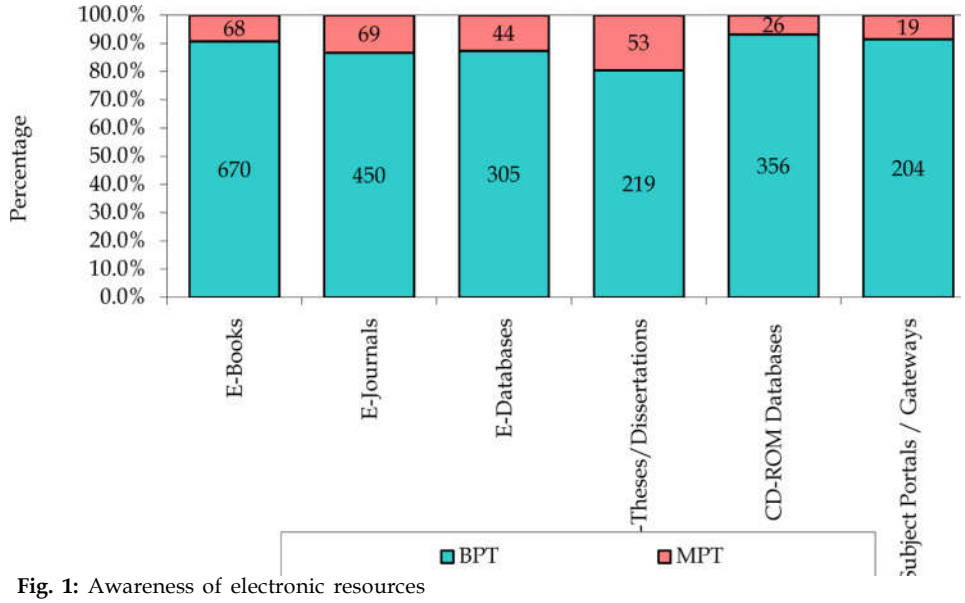

Fig. 1: Awareness of electronic resources

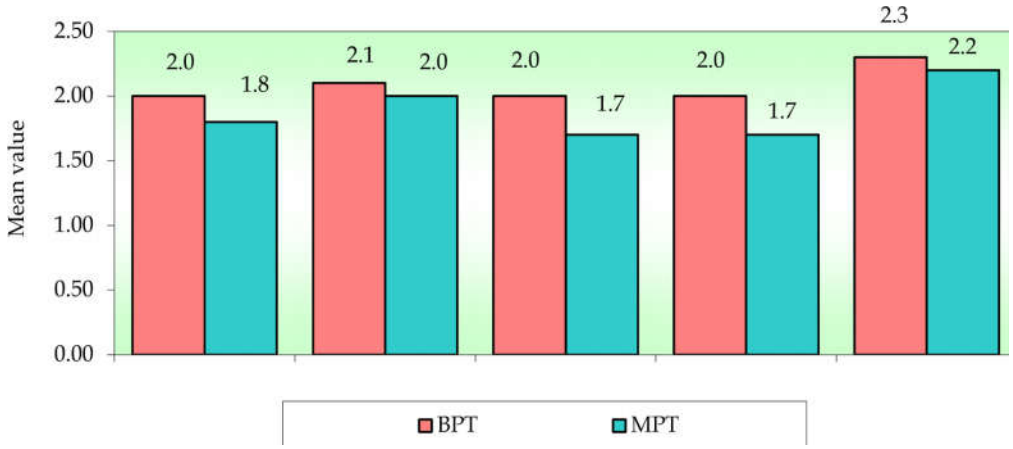

Fig. 2: Mean Opinion on E-Journals compared to its print counterparts

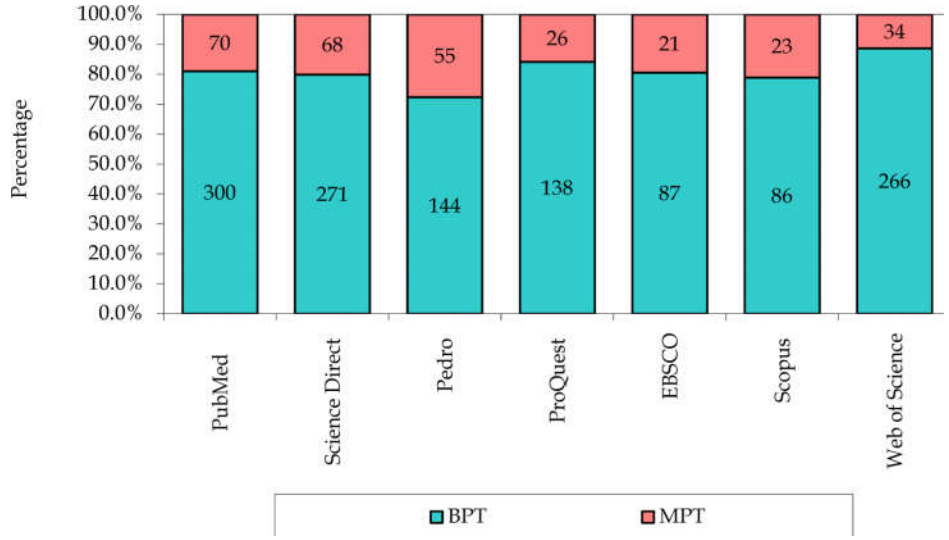

Fig. 3: Awareness of Electronic Databases

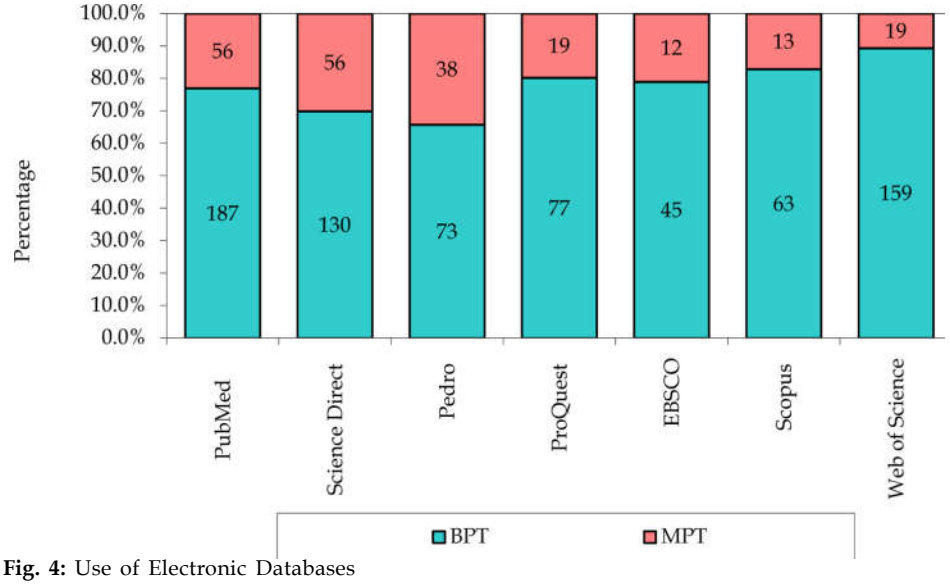

Fig. 4: Use of Electronic Databases

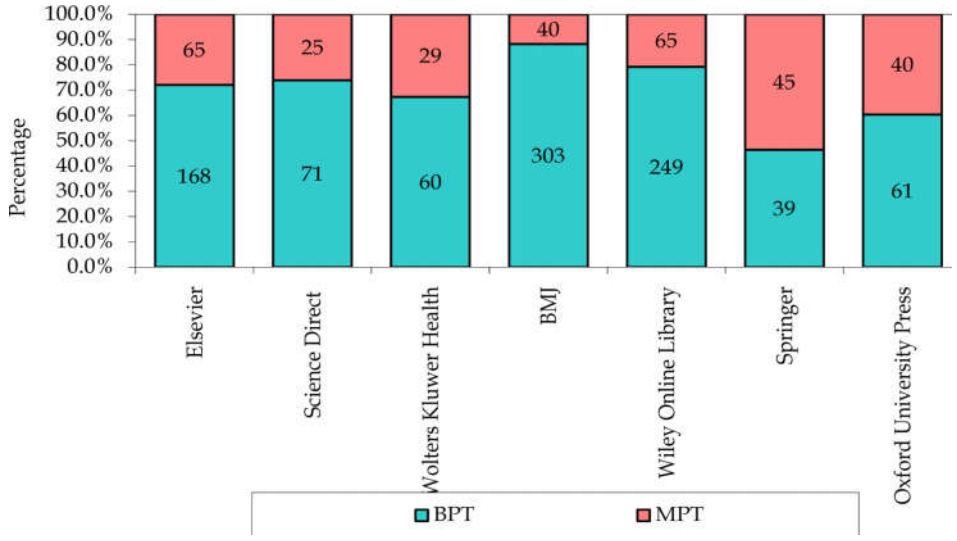

Fig. 5: Awareness and use of E-Journals

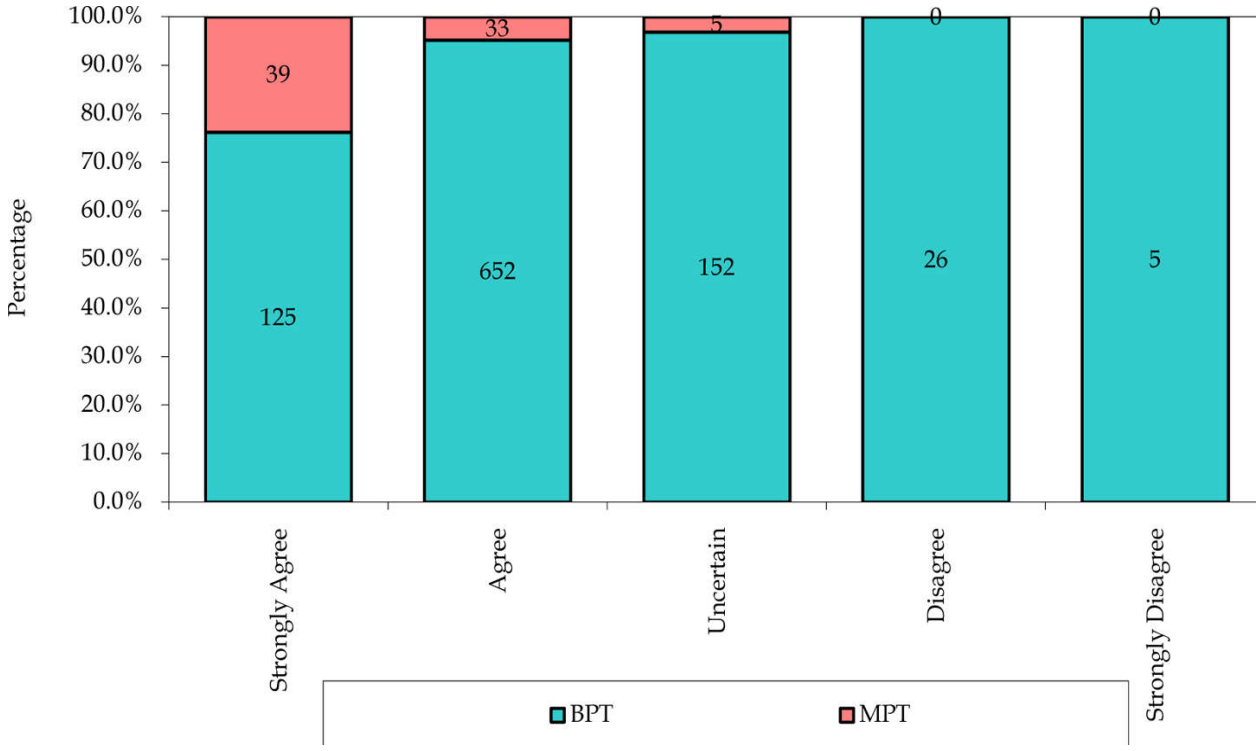

Fig. 6: Opinion on positive impact of E-Databases, E-Journals and CD-ROM databases on the respondents study

Major Summary of Findings

1. A total of 1200 questionnaire were distributed to the respondents, out of which an overwhelming i.e. 1037 questionnaire were received back with a response rate 86.41%.
2. It is found from the study that the majority of respondents 738 (71.17%) students are aware of E-Books, in which 670 (69.79%) of BPT Students and 68 (88.31%) of MPT students are aware of E-Books. Whereas 519 (50.05%) students are aware of E-Journals, in which 450 (46.88%) of BPT students and 69 (89.61%) of MPT students are aware of E-Journals. (Table 3).
3. The Mean response of students of BPT (2.0± 0.6) and MPT (1.7±0.7) in relation to opinion on E-Journals to their print counterparts on E-Journals can be accessed by users from their desktops at workplace, hostels, etc is found to be statistically significance (0.0001). It means that the BPT Students have significant higher mean scores (2.0= Agree) as compared to MPT students (1.7 Agree) in relation to ratings on opinion on E-Journals to their print counterparts. Whereas the Mean response of students of BPT (2.0± 0.6) and MPT (1.7±0.6) in relation to opinion on E-Journals to their print counterparts on E-journals provide links for other related articles/references in the field is found to be statistically significance (0.0001). It means that the BPT Students have significant higher mean scores (2.0= Agree) as compared to MPT students (1.7 Agree) in relation to ratings on opinion on E-Journals to their print counterparts (Table 4).
4. The majority of the respondents, i.e. 370 (35.68%) students are aware of PubMed, in which 300 (31.25%) of BPT Students and 70 (90.91%) of MPT students are aware of PubMed. Whereas 339 (32.69%) students are aware of Science Direct, in which 271 (28.23%) of BPT students and 68 (88.31%) of MPT students are aware of Science Direct (Table 5).

Conclusion

The Study "Information Seeking Behaviour of Students of Physiotherapy College Libraries in Karnataka: A Study on E-Resources" has covered overall opinion of the students about E- resources, ICT facilities, and services in the library. The survey proceeded in the right direction to know about the Information Seeking Behaviour of the Students and improvement in Physiotherapy College libraries. The college libraries want to review its policy on electronic information resources. Generally, students depend upon a variety of electronic resources like E-Books, E-

Journals, Database, to complete assignments, project work, journal writing and for the exams.

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Faculty-Librarian Relationship in Management Institutes in Mumbai

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Abstract

This paper reports the results of a study aimed at finding out whether the relationship between faculty and librarians improved, deteriorated or did not change with time, and also whether it could be improved further, and how it could be improved. Data was collected from 50 management institutes in Mumbai using survey method. Questionnaires to faculty and Librarians were administered and content analysis of suggestions given by them to improve the relationship was carried out. The findings of the study indicated that a majority of librarians are optimistic about their relationship with faculty. Also, the general trend of faculty suggestions is positive. Improved communication, interaction, collaboration, library services, infrastructure, use of ICTs, organization structure, personal qualities of librarians, mutual respect and trust were the factors investigated out of the suggestions analyzed. More efforts from librarians, faculty and institute authorities are needed to improve the relationship between the two groups. Librarians will have to take the initiative for improving the relationship. However, faculty and management of the institutions also need to cooperate and initiate changes to achieve this goal. Training librarians in relationship building skills and well planned relationship building programs will lead to improved relationship between the two groups.

Keywords: Faculty-Librarian Relationship; Librarian-Faculty Relationship; Faculty-Librarian Interaction; Librarian-Faculty Interaction; Management Institutes.

Introduction

Meaningful work relationships make our work life enjoyable and rewarding, leading to greater productivity and creating an environment conducive to growth of individuals and organizations. Scholarly interest in work relationships has increased considerably in recent years.

Need and Significance of the Study

In academic settings, relationship with faculty assume importance for librarians for various reasons. Faculty are involved in the administration and governance of the institutes. As members of the library committee, they can influence the working of the library and the librarian. As they are in direct contact with students, they can encourage them to make better use of library resources and services. Academic librarians need to establish and sustain good working relationship with faculty in order to survive and succeed in the academic environment. Lack of research on this topic indicated the need of such a study and motivated the researchers to conduct this study.

The available literature on the topic of faculty-librarian relationship is published by librarians, leading to a somewhat one-sided depiction of relations between the two groups. The present study examined the perceptions of relationship of both faculty and librarians, which provided a clearer picture of the relationship. The study was also first of its kind in the Indian context.

Practical Implications of the Study are Listed Below.

Knowing where the relationship stands from the perspective of both groups will provide a more

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accurate basis on which strategies for building better relationships can be based.

The results and recommendations in this study list practical action points for librarians and also for faculty and institute authorities, that can help all concerned to take steps to improve the relationship.

The results of this study are expected to lead to further investigation in the area of faculty-librarian relationships.

Objectives

The primary objective of the study was to find out how the relationship could be improved in the opinion of faculty and librarians. The specific objectives of the study were -

- To find out whether the faculty-librarian relationship improved, deteriorated, or did not change with time,
- To find out the opinions of faculty and librarians as to whether the relationship could be improved, and
- To find out what measures could be adopted to improve the relationship in the opinion of faculty and librarians.

Scope and Limitations

Management institutes in Mumbai city and metropolitan regions of Mumbai, offering post graduate programs such as MBA or MMS were selected for the study. Institutes established after 2010 were not considered for the study, as it was thought that relationships need time to develop.

Literature Review

A review of literature on the topic of faculty-librarian relationship indicates that though a lot has been published on the topic, very few studies examined the relationship itself. Some of the noteworthy publications on the topic are discussed in this section.

Biggs [2] studied the sources of tension and conflict between librarians and faculty. She found four main sources of conflict: extent of faculty involvement in library policymaking and procedure, library needs of scholars, the differences between faculty and librarians as individuals, and issues involved in faculty status for librarians. She advised that communication, cooperation, and mutual planning are needed, and must be initiated by librarians, but faculty members need to listen and to participate with as much energy and as broad a view as possible.

Kotter [8] found that improvement of relations between the two groups is the key to the continued viability of academic libraries and librarianship. He also underlined the need to evaluate the quality of faculty-librarian relations. He enumerated benefits of improved relationship with faculty. The first benefit is increased faculty support of librarians in facing the challenges posed by the changing environment. Secondly, faculty having good relations with librarians are likely to use the library resources and services more, leading to increased usage of library resources by students, and more administrative support to the library. Thirdly, good relations can lead to more effective collaborations. Additionally, an effective working relationship can lead faculty to realize the intellectual demands of librarianship and complexity of library work. The goal of proactive service and scholarly collaboration will not be attainable without a good relationship with faculty.

Christiansen, Stombler, and Thaxton[5] found that there is an asymmetrical disconnection that exists between librarians and faculty members, that the two groups are 'loosely coupled', and even more surprising than the disconnect is the disparity between the two groups in terms of how each perceives this disconnection. In striking contrast to the perspective of librarians, facultyperceive no serious problems in relations between the two groups, nor do they identify any negative consequences arising from this disconnection. The authors explained this disconnection by introducing two frameworks: Organizational issues and dimensions, and social status dimensions. Organizational issues involve physical and temporal separation, differences in organizational subcultures, organizational power that each group commands, and measures of success applied to each group. Social status dimensions involve differences in educational qualifications, and status accorded to 'services' and 'professions'.

Jenkins [7] examined faculty demographics, faculty traits, attitudes, and concerns. He also examined areas of collaboration between the two groups, librarians' role in campus governance and distanceeducation, and strategies to improve the relationship such as outreach and marketing. He concluded that establishing active relationships with faculty members who guide student learning is the best way to make the library a central part of the institution.

Librarians in India have not published much on the topic of faculty-librarian relationship compared

to their counterparts in the United States, United Kingdom, Australia, and Canada.

Chadha [4] presented a literature review which included the background of the topic, the benefits of improved faculty-librarian relationship, and measures for improving the relationship.

Sharma, Kumar and Babbar [10] expressed the view that unlike traditional librarianship which is based on transaction, embedded librarianship is based on relationship with faculty or user community. Tripathi [12] explored the relationship of librarians and their users. Factors influencing the relationship were discussed and measures to build long term relationships were suggested. She concluded that Indian librarianship had a long way to go to derive a proper justification of their presence and relevance in research and education.

Literature in librarianship includes descriptions of librarians' efforts to integrate themselves and their libraries into teaching and governance in their respective institutions and to improve their relationships with faculty. These can be grouped as collaboration and partnerships with faculty, outreach/liaison and collegiality or interpersonal relations.

Collaborations described in literature are more in areas such as collection development and information literacy. However, more recently, collaborations in online learning environments, digital repositories and also in publishing have been reported.

Shapely [11] described the library's partnership with the online course development unit, where librarians act as integral team members in course design and delivery along with providing information literacy instruction. Yousef [13] investigated attitudes of faculty members towards collaboration with librarians. He found that most faculty had positive attitude towards collaboration with librarians, especially in the area of collection development.

Boyd [3] advocated increasing interpersonal contact, or the personal touch, by removing the physical separation and using the field librarian or liaison model. According to her, collaboration with faculty is not only a destination, but also a path and bridge to strong relationships with them. Anthony [1] advocated use of outreach to bridge the disconnect between faculty and librarians. She advised academic librarians to reach out to faculty, proactively promote the use of their services, and demonstrably involve themselves in the institution's mission of teaching and research.

Ferrier [6] advised librarians that they should be a part of the interaction that occurs on the average campus and by taking part in that social contact, present an image of professional congeniality that will affect the more formal aspects of their jobs. Without paying attention to the social interaction of the campus, librarians will never really attain peer status and recognition. Librarians need to identify and seize opportunities to interact with faculty. Powdwal [9] expressed a similar opinion by observing that participating in different organizational activities is one way of overcoming isolation, which was addressed to solo librarians but is applicable to majority of academic librarians who tend to be isolated on the campus.

Materials and Methods

The study adopted survey method to gather data using an instrument developed by the researcher.The instrument used to collect data was a questionnaire of two parts. The first part included the demographic questions including respondents' sex, age, and experience. The second part included the following three questions -

a. Whether the relationship has improved with time/ deteriorated with time/ not changed (Please select the most appropriate option).
b. In your opinion, whether the relationship can be improved, (Yes/No/Can't say).
c. If you think that the faculty-librarian relationship can be improved, please elaborate briefly how this could be done.

Sampling Frame and Sample

The list of management institutes was downloaded from the AICTE website. Using the list as sampling frame, institutes in Mumbai established before 2010 were shortlisted. It was decided not to consider institutes established after 2010 as it was thought that relationship needs time to develop before it can be assessed. Only institutes in Mumbai approved by AICTE and affiliated to either SNDT University or University of Mumbai, offering Master's programs such as MBA, and MMS were considered. Total 61 institutes fitting in the above criteria were included in the final list.

The websites of the 61 institutes were consulted to find out names of faculty members and librarians.This constituted the final sampling frame for the study. Only full time faculty were considered for the study. The total number of regular (full time) faculty from the 61 institutes was 700.

An institute wise list of all 700 faculty members was prepared. Random sampling method was used to select the sample. From the list of faculty, every alternate name was selected to send the questionnaire. Thus, the questionnaires were sent to 350 faculty members from 61 institutes. Responses were received from 250 facultybelonging to 50 institutes. The Head/ Chief librarian from each institute was invited to participate in the study. The total number of participants was 250 faculty and 50 librarians.

Results and Discussion

Profile of Participants

Librarians

62% librarians were women whereas 38% were men. This confirmed the observation that librarianship is a female dominated profession.

66% librarians were in the middle age group (36-46 years), while 24% were in the younger age group (25- 35 years), and 10% were in the senior group (47-57 years).

54% librarians had between 10 to 20 years of experience, while 32% had 1 to 10 years of experience. 14% had 20 to 30 years of experience.

All the librarians had completed MLISc. degree, as it is the minimum qualification required for the post of Librarian. 12% had also completed MPhil, while 8% had completed PhD.

Faculty

As opposed to librarians where women were more in number, lesser percentage of faculty (46%) members were women whereas 54% were men. Similar to librarians, the middle age (36-46 years) group was the largest group consisting of 53% faculty. The younger group (25- 35 years) was 28%, whereas the senior group (47-57 years) was the smallest, consisting of 18% faculty.

45% faculty had between 1-10 years of experience, whereas 34% had between 10 to 20 years of experience. 21% faculty had between 10- 20 years of experience.

63% faculty had MBA or equivalent degree, whereas 2% had completed MPhil. 8% had completed PhD whereas 2% were pursuing PhD. 10% faculty had both MBA and PhD, whereas 11% had neither MBA nor PhD, but had other professional qualifications such as Chartered Accountant (CA), Certified Management Accountant (CMA), Master of Law (LLM), etc. All the faculty members were full time regular faculty.

Results and Discussion

The responses received for the three questions are presented using simple frequency and percentages. Content analysis was carried out for analyzing responses received to question 3, i.e. how the relationship could be improved.

Perceptions of Relationship

The perceptions of both the groups with reference to their relationship as found in this study are described below.

• *Whether the relationship improved/ deteriorated/ didnot change over the years*

An overwhelming majority of faculty replied that their relationship improved with time, whereas 58% librarians replied that the relationship improved with time. 14.8% faculty replied that their relationship did not change over the years, while 42% librarians said that it did not change over the years. Librarians did not find that the relationship deteriorated over time, while 2% of faculty found that it did deteriorate.

Table 1 Perceptions of improvement in relationship with time

Respondents	Improved		Deteriorated		Not changed		Total	
	No.	%	No.	%	No.	%	No.	%
Librarian	29	58	Nil	Nil	21	42	50	100
Faculty	208	83	5	2	37	15	250	100

Table 2: Perceptions of possibility of improvement in the relationship

Respondents	Can be Improved		Can't be Improved		Can't Say		Total	
	No.	%	No.	%	No.	%	No.	%
Librarian	35	70	Nil	Nil	15	30	50	100
Faculty	112	45	3	1	135	54	250	100

• *Whether the relationship can be improved further*

It can be seen from the above table that a large number of librarians (70%) thought that the relationship could be improved, whereas only 45% faculty thought that the relationship could be improved further. No librarians were of the opinion that the relationship could not be improved, whereas a very small group of faculty thought that the relationship could not be improved. However, in both groups, a fairly large group could not say whether the relationship could be improved.

• *How many librarians gave recommendations to improve the relationship?*

Even though 54% of faculty were not sure about whether the relationship could be improved, 73% gave suggestions to improve the relationship. 34 librarians (68%) offered suggestions for improving the relationship. Out of these, suggestions which were too general and did not include any specific action points were not considered for further analysis. Suggestions which included specific action points for improvement of relationship were analyzed using content analysis method. The analysis is presented in the next session.

Results of Content Analysis

All suggestions to improve the relationship as given by the participants were grouped according to their content. Ten final categories of suggestions emerged including communication, interaction, library services and procedures, collaboration, personal qualities of the librarian, organizational culture, use of ICT, mutual respect, infrastructure and trust. It was found that the categories of suggestions from faculty and librarians were common to both groups, although the ranking of each group was different. One category, 'trust', was not found in librarians' suggestions.

It can be seen that while majority of faculty thought that improving communication may be the best way to improve relationship, majority of librarians thought that their relationship with faculty will improve by providing faculty various services more promptly or more effectively, or introducing new services. It may be noted that while librarians stated only 'library services', faculty stated 'library services and procedures', indicating the importance of procedures as perceived by them. Procedures which are perceived as not user-friendly may affect the relationship negatively. Interaction ranked highest in faculty list after communication. Various ways of increasing interaction such as meetings with faculty, visit to faculty offices, book fairs and other events are suggested by faculty members.

Collaboration was also ranked high on the list, both by faculty and of librarians. According to faculty, librarian can involve faculty in library matters, and faculty should involve the librarian in teaching and research. Some interesting suggestions are collaboration in curriculum design, and active participation in teaching. Personal qualities of the librarian may help in improving the relationship, in faculty members' opinion.

Approachable and cooperative attitude, courteousness, good manners, and proactivity are the suggested qualities. Librarians have also listed 'service with a smile' as one of the ways to improve the relationship.

Organizational culture is seen as important by both faculty and librarians. The extent to which the librarian is involved in faculty concerns such as teaching and research will depend mostly on the culture of the institute. Inviting

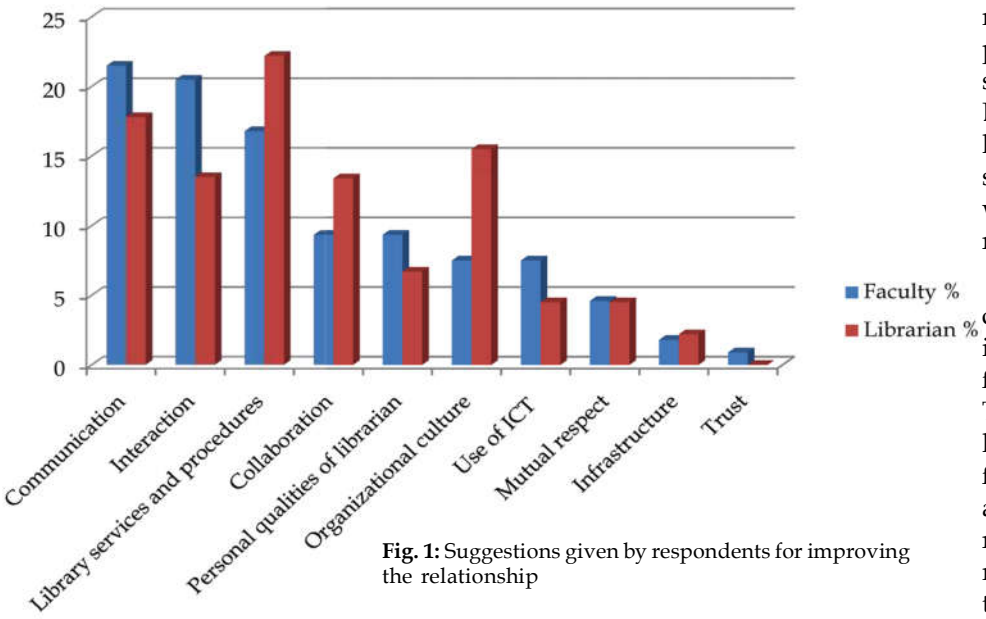

Fig. 1: Suggestions given by respondents for improving the relationship

the librarian to attend faculty meetings and student-faculty interactions, and also occasionally to the classroom, sharing of teaching plan with the librarian, and get-togethers and picnics that can be organized by the Human Resources department are some of the suggestions in this category. Use of technology in providing services, interactive platforms, and use of social media in offering or promoting services is listed both by faculty and librarians. Respect for each other and for knowledge sharing is considered important by both faculty and librarians. Good infrastructure as suggested by librarians and better ambience in the library and separate seating arrangements for faculty as suggested by faculty may help improve the relationship. Trust is stated by faculty as important in order to improve the relationship. However, librarians have not stated trust as a factor.

Time as a factor that can affect the relationship

It is indicated by the following comments that with the number of years working together, the relationship improves.

As observed by a librarian having 30 years of experience:

- "After a number of years' working together, we come to know the choice and style of requirements of faculty. We directly approach them for any kind of library matter".

This was reciprocated by faculty as observed bya faculty member with 10 years of experience:

- "It's already good and communication is improving year by year as more closeness comes in the relationship".

Librarians' role

Faculty perceive librarians as support staff or the librarian's function as a support function, albeit a very important function. This can be seen from comments such as 'librarian is one of the most important support staff members. Librarian should be assisted, motivated, and guided by the faculty', and 'librarian is the backbone of professor at Management Institutes. It has to function as efficient and effective support staff'. This view is reciprocated by librarians as can be seen from comments such as 'librarian's role is to assist faculty and students in their scholarly achievement with thehelp of information resources. If you are able to create that impression, things will improve', and 'librarian should always be willing to provide useful, pin point information to faculty members'.

Responsibility for improving the relationship

Most of the comments indicate that faculty members view the relationship with librarians as important. However, most of them seem to be of the opinion that the onus of improving the relationship lies with the librarian. This view seems to be supported by librarians as their suggestions mostly relate to what they themselves should or could do to improve the relations.

Library services

Providing the required information or materials promptly is recommended by both faculty and librarians. For faculty, better library services ranked third most important measure that can be adopted to improve the relationship after communication and interaction. According to faculty members, if books are requested by faculty they should be made available promptly to avoid delay and inconvenience in preparation for courses.

Librarians agree that improvement in services can lead to improvement in relations. Librarians have recommended various services like CAS, Newsletter, and providing required information promptly in order to improve the faculty-librarian relationship.

Organizational culture and constraints faced by librarians

Faculty membersexpressed the view that maintaining relationship is part of organization culture.Both faculty and librarians have suggested inviting the librarian in faculty meetings, in curriculum development and other activities as a measure of improving the relationship.

One positive indicationis that faculty do understand constraints faced by the librarian as can be seen from comments such as 'allowing librarians to work on suggestions given by faculty' and ' empowering librarian to procure books on behalf of the institute'. This indicates that very often, the librarian lacks the autonomy or decision making power to carry out her responsibilities as promptly as possible in an efficient manner. This view is reiterated by librarians.

Collaboration

Faculty members seem to think that collaborating with librarians will benefit the students. Collaboration could be in the area of collection development, curriculum design, teaching process, and research projects. This is seen from comments from faculty

such as 'involvement of librarian and library staff at the stage of curriculum design itself will help making the relationship more effective', or 'regular grooming of students in terms of research domain can be carried out if faculty and librarian have a positive relationship'.

The willingness and desire for collaboration is reciprocated by librarians as can be seen from comments indicating that librarian can help to develop new subjects and syllabus, and also contribute in designing training programs.

Positive Trend

Though a large number of faculty were not sure whether the relationship could be improved, the suggestions given by both faculty and librarians in the present study indicate a positive trend. Faculty, at least some of them, also seem to understand the constraints under which librarians function as can be seen from the suggestions given by them pertaining to organizational culture.

In spite of the positive nature of most comments given by faculty, it is also indicated by them that conflict situations do arise in the library, especially over library rules and procedures. Training in conflict handling and resolution will prove useful to librarians.

Recommendations

This section includes recommendations for librarians, for faculty, and for institute authorities which can help in improving the relationship between librarians and faculty.

Recommendations for Librarians

Librarians should make concerted efforts to improve the communication by identifying the channels and modes of communication best suited to their situation, taking into consideration their organizational climate, faculty characteristics, available staff and other resources, etc.

It is seen that library procedures and services is an important factor that can influence the relationship between faculty and librarians. Librarians should review the services offered and procedures of the library from the point of view of the faculty and make them more user centered. Language used while framing rules and regulations should be positive as far as possible.

Librarians should take initiative and plan collaborative projects with faculty in research projects. Though the specific areas of collaboration may vary from institute to institute, finding new areas for collaboration will help bring more visibility to librarians in their institutes.

Librarians tend to work in isolation. This can adversely affect their relationship with faculty. Librarians should make conscious efforts to overcome their isolation and to increase faculty awareness of library resources, services, and the competencies of the librarian herself which can lead to a fruitful collaboration between librarian and faculty. Increased interaction between faculty and librarians will strengthen the relationship. Librarians should plan events such as regular meetings, book fairs, personal visits to faculty, while encouraging faculty visits to library.

Personal qualities such as courteousness, approachability, helpful nature, respect to others can help strengthen the relationship. Librarians need to demonstrate their approachability by proactively seeking out faculty, and maintaining professional and collegial attitude while dealing with faculty.

Librarians should learn how to resolve conflict in a positive manner. Conflict resolution training will be of great help to librarians to resolve conflict situations in a positive and timely manner, without weakening the relationship.

Recommendations for faculty

Faculty consider communication as the most important way of improving the relationship, as found in this study. Though faculty and librarians both expect librarians to take initiative in improving the communication and thus the relationship, faculty should respond by attending the meetings and events organized by the librarian, responding promptly to emails, and being more receptive to librarians' efforts in this regard.

Though library procedures are often seen to be a source of conflict, faculty should try to understand that without rules and procedures, it will be difficult for librarians tomanage the library efficiently. If change in procedures or rules is deemed necessary by faculty, a feedback given in a positive manner will help the librarian to find a solution to the problem.

Mutual respect is very important in maintaining good relations, as realized by both faculty and librarians. Faculty should treat librarians are academicians like themselves.

Recommendations for institute authorities

Organization culture has been identified by both faculty and librarians as an important factor which

affects faculty librarian relationship. The institute authorities can help to improve the relationship between faculty and librarians by making structural and procedural changes. Some of the ways in which this can be done are listed below.

Involving faculty in library programs and librarian in faculty programs and meetings will help both to understand each other's perspective and will lead to increased understanding. Involving librarian more in teaching learning process will lead to increased commitment of the librarian toward the primary objective of the institute. Librarian's inputs will help faculty. Also, the librarian will be able to satisfy information needs of faculty and users in a timely manner. Occasional get-togethers and relationship building activities will in strengthening the relationship. The Human Resource department heads may take up the responsibility.

Conclusion

The findings of the study indicate that a majority of librarians are optimistic about their relationship with faculty. Also, the general trend of faculty suggestions is positive. However, more efforts from librarians, faculty and institute authorities are needed to improve the relationship between librarians and faculty. It is librarians who need to take the initiative in this.Seeking feedback from faculty about the library services and procedures and regular review of the same will result in services and procedures which are more user centered, resulting in better relations with faculty. Relationship building is a critical leadership skill, which can be developed with training. Training programs in this area could be designed by library associations and library schools. Well planned relationship building programs that are focused on increasing faculty awareness of library resources and services, and seeking opportunities for communication, interaction and collaboration with faculty proactively will lead to improved relationship between the two groups.

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Original Article

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Going Green through Waste Management: Indian University Libraries Study

Neeta D. Gundawar[1], Sushama C. Powdwal[2]

Abstract

Sustainability and adaptability are two important aspects of the life for all species to survive in this world. Adaptability is the quality of being able to make changes in response to the environment. Survival of libraries is possible only through sustainability and adaptability. A system is sustainable when its operation does not break it down over time– in other words, when resources consumed in the system are replenished. As a public places libraries consume lot of energy and resources to provide services to their patrons. Hence, to understands social responsibility towards environment as a person and as library professional is important. This will show the path for greening the libraries. With this intention, the study on waste management in Indian university libraries was conducted. To cope up with the geographical area Morgan table was used to decide the sample size which turned out to be 254. Present paper reported the study which explored the facts about waste management in Indian University libraries. It also throws light on the status of audit regarding the waste management. The study followed descriptive research design and survey method. This exploratory study adopted qualitative and quantitative approach for the investigation of problem. Collected data were analyzed by using Microsoft Excel application. The concept of greening the libraries is in infancy stage in India. Awareness is gaining momentum slowly. It was found that these libraries are keener on waste management of paper, more than waste management of books, e-waste and other waste material as libraries are keen on holding all the collection as it can be required any time by the user, taking into account the research objective of university libraries.

Keywords: Waste Management; Greening Libraries; Library Sustainability; Green Libraries; University Libraries; E-Waste.

Introduction

The day to day activities of human being generate a lot of waste. For going towards greenness how do we manage the waste is very important. Libraries being part of the society also generate waste. Investigation of the waste management in libraries is thus important. There are many ways to go green. Going green has finally gone mainstream, countries are spending billions on implantation of clean or green technologies. Advantages of waste management are reflected on the quality of environment. Waste management policies can be drafted in such a manner that it will generate finance for libraries.

Sustainability is the quality of not being harmful to the environment or depleting natural resources, and there by supporting long term ecological balance.

Similarly adaptability is the quality of being able to adjust to new conditions. 'Sustainability' refers to the goal and 'sustainable development' is the path or framework to achieve it. To set the sustainability terms is our challenge today. Libraries as a system must think about sustainability for which greening the libraries is important. This study focused on greening the library through waste management.

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Need of the Study

As a public place libraries consume lot of energy and resources to provide services to their patrons and clientele. We need to understand social responsibility towards environment as a person and as library professionals. For the survival of profession it is also necessary that libraries should change. Going towards greenness is inevitable for libraries in this context.

This triggers many questions like–

- Which are the different areas where libraries can be green?
- Is it possible for libraries and library professionals to go green with existing resources?

Knowing the status of libraries as part of ecological system is essential. This status and existing condition will guide the librarians to take decisions and implement the policies. In order to know the present status of university libraries regarding greenness it was necessary to analyze their pattern about energy efficiency, waste management, operation and maintenance of building etc. Thus, waste management is an important issue with reference to greening of libraries.

Objectives

The main objective of this study was to explore measures adopted by the Indian university libraries for waste management of books, paper, e-waste, and other waste. The study also explored how many Indian university libraries have waste management policies and types of audits related to eco-system and conducted by them.

The objectives formulated for this study were

To find out the measures adopted by Indian University libraries for waste management of books, paper, e-waste and other waste.

To find out whether Indian University libraries have waste management policies.

To investigate whether Indian University libraries conduct audit of eco-system.

Assumption

All university libraries in India are recognizing the importance of sustainability and natural resources because of their depleting nature. They are moving in the direction of turning into green libraries through waste management.

Scope and Limitation of Study

This study is limited to university libraries in India. Other types of libraries for example, college libraries, public libraries etc. are not considered. The study focused singly on waste management. Going green through initiatives, programs, activities, services, operations and maintenance etc. are out of the scope of this study. The study does not deal with stock taking practice in university libraries. Sewage arrangement for managing the other waste is out of the scope of this study.

Literature Review

Green practices are the major concern of the present era, all over the world. All environmentally sensitive persons think about how to go green and save the earth from further degradation. Discussions and debates are going on for adopting more sustainable practices to save the environment and earth.

Greening the libraries is also recognized and discussed by many researchers and environmental and information scientists internationally. However, not much research is done in India on greening the libraries. Libraries are recognized as lifelong learning centers for people of all ages. Hence, libraries can certainly play a major role to educate the society about environmental issues through their collections, sustainable and environment friendly facilities, and library programs. Libraries in 21st century era can implement greening and sustainability by adopting green practices. Waste management is one of those practices.

Henderson (2012) [2] guided for careers in sustainable architecture and pointed out that planetary limits necessitate to 'going green' and 'building green'. As a collective group, human beings can- and should- be the solution leaders for a sustainable environment. Green library buildings are one of such solution. Low, Gleeson, Green and Radovic (2005) [1] recommended that workplaces should be designed to reduce the drain on the environment and at the same time inform their users (workers, customers, clients) about the impact of it on the environment. Jankowska and Marcum (2010) [3] identified that there were variety of factors that threaten the sustainability of academic libraries: lowering libraries ecological footprints was one of them. Authors discussed four major categories as-

- Sustainability of scholarship and collections.
- Green library operations and practices.

- Green library buildings and
- Measuring and improving sustainability.

Sannwald (2009) [4] provided a checklist about how sustainability can be brought into the library design as well. For instance, Sharma (1970) [5] opined that library building should fulfill their functions as well as be graceful and peaceful. Some of the basic fundamentals of good library building are harmony, site, functionalism, and style, technical and economic factors. Further Kroller (1987) [6] opined that conversion or preservation of old building fabric for library was one of the solutions for greening the library.

Besides this, Antonelli (2008) [7] also opined that creation of green libraries was approaching a tipping point - generating a Green Library Movement, which was comprised of librarians, libraries, cities, towns, college and university campuses committed to greening libraries and reducing degradation of environment. Constructing a green library building using a performance standard such as LEED was one of the methods to go green and sustainable. Existing literature indicated that, innovations were taking place by building green library buildings, by greening existing facilities, providing green library services, and embracing environmentally supportive and sustainable practices within the library. While evaluating collection disposal Ambler (2012) [8] stated that library professionals are aware that collection disposal had an impact on the library. Developing the concept of collection sustainability required consideration of all aspects of collection management and the concerns of library and information workers which begins with consideration of collection disposal. Collection sustainability can be brought to the library through the use of deselection tool. However Jones and Wong (2016) [9] were of the view that only pursuing a green building cannot be the focus of a sustainability approach for many academic libraries.

Embracing a holistic approach to sustainability practices may be a way forward. Waste management in the library is one of the green strategies for sustainability under the head green operations while developing green strategies. Rowley (2006) [10] states that existing literature witnessed the debate and discussion about the contribution that libraries can, and mightmake to their environment and focused on the challenges for libraries in relation to the environment.

One of the considerations was the use and impact of digitization on environment. Even digital information environments generate a lot of redundant items which has built-in obsolescence and need an environmentally sensitive de-commissioning route. Proposed library greening guide by Salonga-Silverio (2011) [11] dwelled around following areas: Material conservation, Energy conservation, Library building including waste management practices, and Greener operation and services. Dempsey and Palilonis (2012) [12] put forward a thought that waste associated with printing can be reduced by implementing reuse, recycle and reduce methodology for a greener library with print management.

Barnes (2012) [13] recommended that public libraries can also use their green building as a teaching tool to teach their communities about sustainability and foster behavior change. Literature review indicated that waste management is one of the strategies to go green in the libraries. Inclusion of waste management practices in the regular library practices for going towards greenness and to save the earth is the need of the hour. Not much research has been done in this area with reference to academic libraries in India. This situation motivated the researchers to study the status of waste management practices in the Indian university libraries.

Materials and Method

The study adopted descriptive research design and survey method. This exploratory study adopted qualitative and quantitative approach for the investigation of problem. According to UGC website i.e. www.ugc.ac.in. [14] and universities handbook 2014 [15] total 719 universities were taken up as population for the present study. To cope up with the geographical area Morgan table was used to decide the sample size which turned to be 254. Simple random sampling technique by using lottery method was used to acquire the relevant sample. Questionnaire was used as research tool. In order to verify whether the waste management practices were continued, open ended questions asking reason for discontinuation were posed. Collected data was analyzed by using Microsoft Excel application. Percentages were derived at for close ended questions. Absolute frequency with relative frequency in form of percentage was presented. A relative frequency describes the number of times a particular value for a variable (data item) has been observed to occur in relation to the total number of values for that variable. The relative frequency is calculated by dividing the absolute frequency by the total number of values for the variable. This can be represented in percentage. Comparison is shown in the tables for relative

frequency in percentage and availability in libraries in percentage.

Results and Discussion

In order to explore measures adopted by the Indian university libraries for waste management it is necessary to understand measure adopted for waste

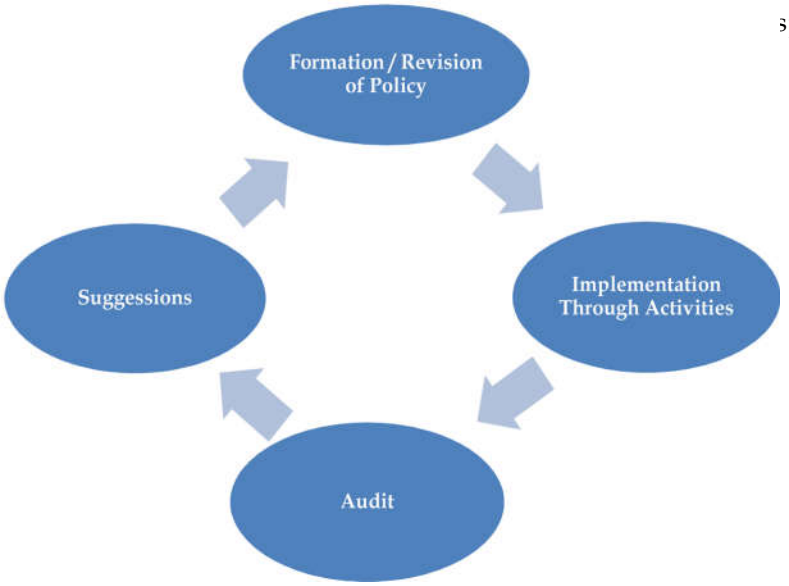

Fig. 1: Cyclic process of policy and audit

management of books, papers, e-waste, and other waste. There is cyclic process of policy and audit. Hence measures, policy and audits were studied quantitatively and qualitatively.

Waste Management

Waste management of libraries was divided into four parts.

- Waste management of books.
- Waste management of paper
- Waste management of e-waste and
- Waste management of other waste.

Measures for all the four were sought from the data received from respondents. This is presented next.

Waste Management of Books

Waste management of books is important as most of our Indian libraries are hybrid libraries at present. Waste management of books can be done through different modes. They are- by giving gift to friends of library, relegate books to store area, sale to scrap person, giving them away to its users for no cost, send them to recycling organization, sell to its user for minimal charges, sale of books to store or other library. In this context the most preferred measure is gift the books to friends of library with 27%, followed by relegation books to store area 26%, 11% libraries choose sale of books to its user for minimal charges and 7% libraries opt for sale of books to store or other library respectively (Table 1). A few libraries adopted other measures than mentioned in the table. These responses provided unique local information. Five libraries do not urgently sense the need of waste management of books as libraries are established very recently, two libraries created binding section for books mending.

Waste Management of Paper

Managing waste of paper can be achieved through different measures like printing on both sides of paper, avoiding use of paper by going digital reuse, lessen the margins while printing, sending it to recycler, segregation of dry and wet waste, setting up recycling area etc. It was found that printing on both sides of paper is most preferred by libraries (72%) followed by avoid use of paper by preferring digital environment (50%). Segregation of dry and wet waste is followed by 17% libraries. 8% libraries have setup recycling area (Table 2). Libraries are keener on waste management of paper rather than waste management of books, waste management of e-waste and waste management of other waste as libraries like to hold all the collection as it can be required any time by the user. Besides the measures given in the options, other useful practices followed by respondents are-

- Circulars within the university are sent via e-mail.
- Newspaper clippings service is offered on blank side of used paper.

The measures discontinued by the respondents are-

- Using both side of paper while printing.
- Recycle bins are kept in university premises to throw the papers in recycle bins, which are further taken for recycling.
- Segregation of dry and wet waste.

This scenario of waste management of paper is quite positive as barely three institutes reported discontinuation of measure.

Waste Management of E-waste

E-waste is the most dangerous to human beings as it does not degrade on its own. Hence, its management is a prime concern of all environmentalists. Understanding position of libraries in this regard is significant. E-waste management can be achieved through measures like creation of specified junctions for collection of e-waste, handing over to the organization or recycler who knows proper disposal system, purchase of electronic products from companies which have service after sales for the disposal of product with take back policy, donation of computers to NGO to refurbish and give it to needy people and implementation of any recycling project or program.

The study showed that creation of specified junctions for collection of e-waste was feasible for 28% libraries. 26% libraries were able to handover to the organization or recycler who knows proper disposal systems. 8% libraries were able to implement any recycling project or program (Table 3). A few other practices expressed by respondents are-

- Project based competitions out of e-waste are organized for students.
- Hand it over to purchase section.
- Follow university decision.

With the advent of technology and its implementation in the libraries the situation of e-waste management is alarming. Comparing with other aspects of waste management, it was found that e-waste management was a neglected area, as 30% libraries do not follow even a single measure out of the measure mentioned in Table 3. This may be because introduction of technology in libraries is recent than printed books. Secondly, most of our libraries are hybrid libraries at present. People are not aware about the danger in absence of waste management of e-waste.

Looking at the situation, it can be suggested that more libraries should try for e-waste management. Companies' representatives or product sales persons must be aware of company's policies regarding e-waste management, if any at the time of providing the technology. Companies also should take the responsibility of safe e-waste disposal as their corporate social responsibility. They can promote different proposals for buy back policy. Libraries can also insist for different proposal for after sale service and disposal after use. Awareness is needed in the peers so that they can give valuable suggestions to each other while purchasing or implementing technology in the libraries.

The status of discontinued measures regarding e-waste was verified from the respondents. The number of projects discontinued are merely two. They are-

- Recycling project or programs were implemented previously.
- Purchase of electronic products from companies which have after sales service for the disposal of product with take back policy.

Libraries have not provided the reasons for discontinuation.

Waste Management of Other Waste

Libraries produce waste other than books, papers and e-waste. Problem of management of other waste can be tackled by the measures like installation of bins to collect garbage, sale to the recycler, outsourcing recycling of garbage to agency, use of coloured bins with code to collect garbage, in-house recycling of garbage, segregation of dry and wet waste, recreating it to new sustainable products etc. Measure of installation of bins to collect garbage is favored by 58% libraries. 24% libraries prefer sale to the recycler. 16% libraries segregate dry and wet waste. Recreation into new sustainable product is minimally practiced in 10% libraries (Table 4).

Libraries are not much concerned for the waste management of other waste that is other than books, paper and e-waste. One institute has reported discontinuation of measure about other type of waste. Use of coloured bins with code to collect garbage was implemented but the practice is discontinued. This reflects disappointing scenario in university libraries.

Table 1,2,3, and 4 also indicate that library professionals are not much aware about waste management. However, different measures followed by them for waste management are not result of deliberate and intentional decision.They may have adopted measure for getting more space or for other reason.

Policies and Audit

Waste Management Policy

Waste can be managed efficiently if waste management policy is drafted and the implementation is done. Exploration of existence of waste management policy was done. It is welcoming that 18% libraries have drafted waste management policy (Table 5). More libraries should have waste management policy. This can be drafted to generate finance for libraries and also protect the environment.

Insight gained from the respondents about policy is as follows. There are different themes around which waste management policies are drafted. For one university waste management policy has been drafted entirely for the purpose of pollution control board clearance. Use of EM technology for manufacturing of compost and using it for agriculture is the policy for one institute. Agriculture seems to be the concern for the university. Three waste water recycling plants function in one university campus and water is used for agriculture. (Meaning "EM Technology" - With the help of 'effective microorganisms' new alternative products are developed which are less harmful to nature.) Two universities have their own common policy on waste management which applies to all. One university follows e-waste management and handling rules 2011. Water recycling and rain water harvesting are main concerns for one institute. One of the universities has formulated a committee for writing of items as per account code formed by the university. Segregation of waste before sending it to the recycler, use of coloured bins for segregation, and separate water waste policy are few other measures. ISO 14000 norm is followed by one university for policy formulation. The ISO 14000 family of standards provides practical tools for companies and organizations of all kind looking to manage their environmental responsibility. One more university has drafted the policy but the same is not available

Table 1: Waste Management: Books

Measures	(N=228) Absolute Frequency	Relative Frequency (%)	Libraries (N=178) Availability in Libraries (%)
Gift the books to friends of library	48	21	27
Relegate books to store area	46	20	26
Sale of weeded books to scrap person	43	19	24
Give away the books to its users for no cost	31	14	17
Send books to recycling organization	29	13	16
Sale of books to its user for minimal charges	19	8	11
Sale of books to store or other library	12	5	7
Total	228	100	-

Table 2: Waste Management: Paper

Measures	(N=458) Absolute Frequency	Relative Frequency (%)	Libraries (N=178) Availability in Libraries (%)
Printing on both sides of paper	129	28	72
Avoid use of paper by going digital	89	20	50
Reuse	84	18	47
Lessen the margins while printing	66	14	37
Sending it to recycler	44	10	25
Segregation of dry and wet waste	31	7	17
Setting up recycling area	15	3	8
Total	458	100	-

Table 3: Waste Management: E-waste

Measures	(N=168) Absolute Frequency	Relative Frequency (%)	Libraries (N=178) Availability in Libraries (%)
Creation of specified junctions for collection of e-waste	49	29	28
Hand over to the organization or recycler who knows proper disposal system	47	28	26
Purchase of electronic products from company's which have after sales service for the disposal of product with take back policy	34	20	19
Donation of computers to NGO's to refurbish and give it to needy people	24	14	13
Implementation of any recycling project or program	14	9	8
Total	**168**	**100**	-

Table 4: Waste Management: Other Waste

Measures	(N=301) Absolute Frequency	(N=301) Relative Frequency (%)	Libraries (N=178) Availability in Libraries (%)
Installation of bins to collect garbage	104	34	58
Sale to the recycler	43	14	24
Outsourcing Recycling of garbage to agency	41	14	23
Use of coloured bins with code to collect garbage	35	12	20
In house Recycling of garbage	33	11	19
Segregation of dry and wet waste	28	9	16
Recreating in to new sustainable products	17	6	10
Total	301	100	-

Table 5: Waste Management Policy

Prevalence	Absolute Frequency (N=178)	Relative Frequency (%)
Yes	32	18
No	146	82
Total	178	100

Table 6: Number: Book Withdrawal Policy

Prevalence	Absolute Frequency (N=178)	Relative Frequency (%)
Yes	64	36
No	114	64
Total	178	100

Table 7: Audit

Prevalence	Absolute Frequency (N=178)	Relative Frequency (%)
Yes	28	16
No	150	84
Total	178	100

Table 8: Type: Audit

Type of Audit	(N=52) Absolute Frequency	(N=52) Relative Frequency (%)	Libraries (N=178) Availability in Libraries (%)
Energy audit (includes energy consumption, thermal comfort, visual comfort)	23	44	13
Water and waste audit (includes water quality, solid waste generation, solid waste disposal process)	16	31	9
Sound level audit (includes indoor noise level, outdoor noise level)	13	25	7
	52	100	-

with library. It is available with the estate officer of the university. For two libraries project is at planning stage. As per the local requirement policies are either drafted or third party certification is followed.

Book Withdrawal Policy

Books are the major resource for libraries to provide information. Most of our libraries are hybrid libraries at present except a few. It is obvious that more libraries have thought about formulations of withdrawal policy than waste management policy which normally is prepared at university level. Hence, the number of libraries with book withdrawal policy is almost double than the waste management policy. (Table 5 and 6.)

A few important examples of briefing from respondents about withdrawal policy for books are as follows. The number indicated in the bracket indicates the number of responses.

- As per central government rule 4 books per thousand circulated can be withdrawn subjected to the approval of library committee. Mostly these are the lost books as per stock taking report [5].

- Weeding out of older edition & damaged books after administrative follow up [4].
- A decision is taken by the library committee [3].

It should also be noted that the librarians have given responses not marking the difference between weeding and withdrawal. There is no uniform policy or format. The decisions about the implementation are taken at local level as per requirement. Further different libraries have included different factors regarding saving of environment in their policies. Maximum libraries give importance to recycling. Involvement of students in recycling is another notable factor. It is very important that next generation is involved in such constructive work. Once importance is outreached to next generation they will take utmost care of the environment. This will create habitable condition for each one of us. A few libraries insist on pulping or sale for optimum use.

This indicates that waste management policy and book withdrawal policy play very important role to march towards greenness. Implementation becomes easier once the policies are drafted. Individuals get clarity regarding their work and steps to be followed for achievement of final goal, once the policies are formulated and are in place.

Audit

Audit should be conducted for the judicious use of resources. Improvement in any activity or service can be achieved only if audit is done. Audit gives us clear and exact picture where improvement is needed. Audit helps us to save resources and improving services. Future planning is possible only through audit. Corrective measures can be implemented after the audit report. For the judgment of resources and environment different types of audit can be conducted by institutes. It can be energy audit, sound level audit or water and waste audit. Yet, so far merely 16% institution have conducted green audit (Table 7).

Energy audit is done by 13% libraries. Sound, water and waste audit is done in 7% and 9% libraries respectively (Table 8). 84% libraries have not conducted any type of audit (Table 7). 4% libraries conduct all three types of audit. This is very much alarming situation.

A few institutions conduct different types of audits in addition to those mentioned other than in Table 8. They are-

- University environmental policy.
- Pollution control board inspect for the compliance of e-waste rules.
- ISO 14000 certification.

Conducting audit is important as modifications and improvements can be implemented in the waste management policies to gain positive results. It can become a continuous process for the institute. Audit will identify the lacuna and to fill the gap, policies can be changed. Implementations of policies will result in betterment and transformation of institute. Audit can also be conducted to get further suggestions or to find out different procedures which will save resources. This process will take the institute ahead on the path of eco friendliness.

Thus, the assumption of the study with respect to Indian university libraries was affirmed as far as waste management is concerned. University libraries adopt many different measures for waste management to bring green quotient to the library. Even though percentage for implementation of policies and audits is on the lower side that is below forty percent, still initiatives are taken by university librarian to march towards greening of their libraries.

Suggestions

Following suggestions emerge from the study:

For Librarians

- Information regarding waste management and how it benefits users' health should be added in the library orientation of university libraries.
- Librarians should consider themselves as integral part of corporate social responsibility regarding waste management and become advocates to promote waste management for greening of libraries.
- Each and every library should possess waste management policy. This can be drafted skillfully to create finance for libraries and also protect the environment.
- Libraries and technology providing companies should join hands together to troubleshoot the problem of e-waste management.

Educational Institutes

Literature review revealed that efforts are taken by IIT Roorkee [16] for green initiatives. They are remarkable for an educational institute. As they have gone through all the procedures, other universities and institutes must take the advantage of their expertise and emulate them for creating green campus. University can acquire their advice for creating green campus.The existing policy with the institute can be

treated as a model policy and other institutes can frame their own policies with local variations required.

NAAC Accreditation

NAAC

The National Assessment and Accreditation Council (NAAC) is an autonomous body established by the University Grants Commission (UGC) of India to assess and accredit institutions of higher education in the country. More weightage to inclusion of waste management as environmental initiatives by committee can motivate institutes to take more initiatives for waste management to march towards greenness.

Conclusion

Libraries do follow waste management of books, paper, e-waste and other waste but they are keener on waste management of paper than books, e-waste and other material. Obsolesce rate of technology is at the peak because of the technological advancement. This situation regarding e-waste management is alarming. Companies and libraries must join hands together to troubleshoot the problem of e-waste management. Since greening of libraries is a recent phenomenon in India it is welcoming that eighteen percent libraries already have waste management policy. To target all the libraries it is very much necessary to create awareness amongst the libraries and librarians about waste management in every day activity for going towards greenness.

Greening of libraries is a recent phenomenon. Creation of clean and green spaces is not possible without waste management. Health of the user is at stake without waste management. This offers opportunities for one to improve the environment and well-being of the users. In an ecosystem, organisms are interdependent. Similarly users'health is dependent on environment in libraries. With the help of waste management libraries can maintain good health of the user. This necessitates all activities and timely actions towards waste management in university libraries.

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Erratum

Original Article Titled, **"Libraries in ICT Environment: A Study from the Education Students' Perspectives"**

Anil Kumar Dhiman*, Surendra Kumar**

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The original published version of this Article contained errors in the name of second author mentioned, Surendra Kumar. But in actual his name is "Surendra Singh"

Now read as,

Libraries in ICT Environment: A Study from the Education Students' Perspectives

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Mistake is regretted .

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Use of Web in the Libraries of Private Universities of M.P.

Jaymala Patil

Abstract

Library has always enjoyed the status of being the heart of Institution. But due to Information & communication impact position of Library and librarian is diminishing. ICT especially Internet has great impact on libraries and librarians. To stay in the picture as Knowledge manager Librarians has to cope up with the technological barriers and try their best to attract the users towards library by providing smart services and help them to quench their thirst of knowledge. Library professionals must give result in growth in specific field resulting in national growth and then contributing in global growth. So librarians must use smart tools for developing users' awareness. This paper focuses on the use of ICT in private technical colleges of Indore, position of libraries, infrastructure and professionals.

Keywords: ICT; ICT Product.

Introduction

To render best services to users, libraries and library professional are using various types of technologies to provide the updated and desired information. Computing, communication, storage and retrieval are the areas of continuous development and need remodeling to disseminate information and to meet users' satisfaction. Academic libraries are the central part of any Institution and mend for learning, teaching and research and development process. ICT act as a primary root of a Banyan tree with many branches covering Creation, communication, distribution, and administration which are pillared by prop roots like Internet, Telephones, Mobiles, Television, Radio, Audio visuals, satellite communication hardware, software etc deeply penetration and supporting to every one's life. ICT have changed the way we live, learn and work as a result quality at every stage in lives is improving the effectiveness in all sectors. In today's scenario ICT is acting as junction of all computer and communication technologies ICT have changed the work pattern in libraries also. Now the printing is covered by digital form. ICT has vast applications but in libraries it has made a remarkable change in process of acquisition, storage, retrieval and dissemination. Apart from learning library if the focal point for research and development in Academic Institutions.

To fulfill the higher goal by providing updated information to users, libraries are trusting on ICT use and librarians are the doorstep for the all activities and information barter.

Thus librarians also have to move along with the changing situations from prolonged process to prompt services by making the optimum use of ICT in libraries. Along with the customary operations in libraries, librarians are involved in the coordination activities, setting of priorities and all managerial tasks with involvements in user's community and under management controls. Librarians are content creators, web page planners and internet navigators. So librarians must keep themselves updated and friendly with the technological uses.

Internet has changed the ways of Information services by breaking the barrier of distance, time, language etc. Internet has become important research tool in all the academic institutions.

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As we talk about Indore, it is situated on Malwa Plateau with two small rivers Saraswati and Khan. Indore is 3898 Sq Kilometer in area. Indore was named as Indur and later on named as Indore by British rulers. Marathas Holkars ruled Indore and Dhar area. Indore has become an educational hub as it is gifted by IIM and IIT in same city in 2009. In Indore there are about 42 private engineering colleges who are imparting technical knowledge.

As Private colleges are profit oriented in nature, so the main aim of this study is to know the status of libraries and the facilities with respect to ICT use provided for users to fulfill required information in minimum time. The study is basically covering all the private engineering colleges of Indore in Madhya Pradesh.

Objectives of Study

The purpose of the study is to observe the library services by using ICT tools in private engineering and management college libraries to meet users need.

1. To study the present ICT tools and services provided by private college libraries in Indore.
2. To find the different purpose of using ICT tools.
3. To assess the ICT based library services and facility utilization done by users and their satisfaction.
4. To find the most preferred search engines and web sites used by users.
5. To identify the type of problems faced by users while using ICT tools and services offered by libraries while their visit in library.
6. To provide suggestion & solutions to improve the library services in terms of ICT use towards betterment & quality services to its users.

Research Methodology

The questionnaire method was used for the present study to collect the primary data for evaluation and assessment. It was not possible to collect large no of data from every library and its users therefore samples were collected by using stratified random sampling method. Researcher has selected 40 engineering and management colleges affiliated to RGPV, Bhopal. The questionnaires were distributed personally to librarians and users.

Data Analysis

The Data analysis actually the analysis and interpretation of data collected through questionnaire and arranging it in systematic assembling and summarizing of data to obtain answer to research problems. Then the collected data is organized in a tabular form using pie charts, tables graphs etc so as to test & study the relation of research problems.

We have got 36 colleges' library data out of 40 selected which is recorded in the Table 1 & then it is categorized into three parts like student, faculty and librarian. After that we have divided these three sections into male female percentage. Now if we see the bar graph we can understand 69% male where as 31% are female student in a college. Similarly if we considered the faculties then we can see 58% are male and remaining 42% are female. At last if we consider the librarian we can see it is 83% male whereas 17% comes under the female category.

If compare two diagram we can observed that most of the faculties (95%) as well as students (93%) uses ICT in a college. It means that in engineering and management college application of ICT is very much essential but some colleges are their where faculty and student do not use ICT i.e. 6%. There a son could be either they do not know about this or it is not available in their college (Table 2).

Table 3 examined that the researcher asked some students as well faculties that how they learn about ICT, so student and faculty gave similar kind of response. Now if we see the column chart carefully we can understand that maximum respondent said they learn it through Teachers/Instructors i.e.58% students and 85% faculties. After that maximum people said they learn it through their Colleagues/classmates whereas small number of respondent said they learn it by friends, library home pages and library training.

Sl.1 E-Mail & Document exchange

Sl.2 Electronic Journals

Sl.3 Electronic Books

Sl.4 Collect Data through Internet

Sl.5 Online Data Bases

Sl.6 For Career Development

Sl.7 Presentation & Documents

Sl.8 Manuscripts Proposal & Papers

Sl.9 To Update Knowledge

Sl.10 Search Web Opacs/Opacs

Sl.11 Discussion Forums

Sl.12 Blogging

Sl.13 Casual Internet Surfing

The 4 table shows that maximum response one mail and document exchange (i.e.125 students &146

Table 1: Male and Female percentage in different engineering and management colleges

Users	Male	Female	Total
Student	92	42	134
	69%	31%	
Faculty	98	72	170
	58%	42%	
Librarian	30	6	36
	83%	17%	
Total	220	120	340

Table 2: ICT Users Students

Yes	No	Total
125	9	134
93%	7%	100%

Fig. 1:

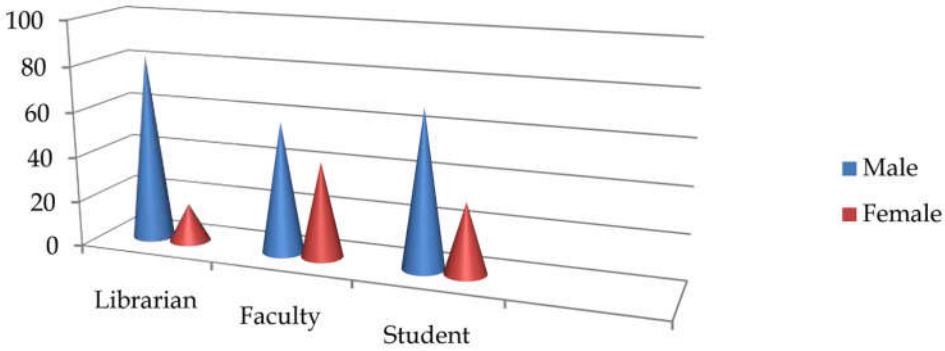

Fig. 2:

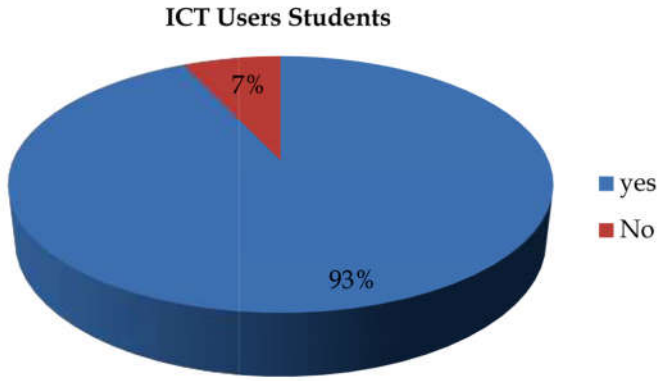

Fig. 3 :

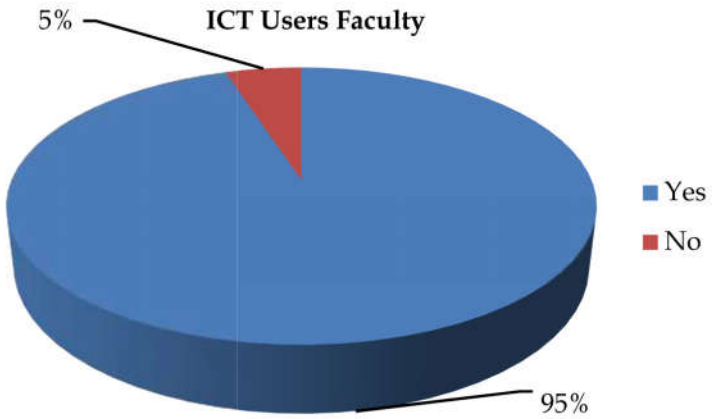

Table 3: ICT Users Faculty

Yes	No	Total
162	8	170
95%	5%%	100%

Table 4: ICT utilization

Users	Sl.1	Sl.2	Sl.3	Sl.4	Sl.5	Sl.6	Sl.7	Sl.8	Sl.9	Sl.10	Sl.11	Sl.12	Sl.13
Student	125	45	58	76	54	78	84	25	71	60	21	35	59
Faculty	146	112	124	83	72	77	95	75	125	33	38	35	58

Table 5: Useof ICT Hardwareproductby student& faculty

Respondents	Computer	Laptop	Mobiles	tablets	I phone	Printer	Scanner	DVD/CD/ Transcends
Student	92	96	126	36	82	57	64	84
	68%	72%	94%	27%	61%	42%	48%	63%
Faculty	96	128	138	62	70	68	25	155
	56%	75%	81%	36%	41%	40%	14%	91%

Table 6: Use of internet from various places

Respondents	Library	Computer Centre	Department/ Wi-Fi	Cyber Café	Hostel
Students	78	45	78	55	97
Faculties	6	40	94	8	32

Table 7: Information search through various sources

	General purpose search	Multi Journal search	Specific journal search	Online citation index	Online Database search	E journal search	E books Search	Total
Student	112	45	22	14	26	29	34	282
	40%	16%	8%	8%	9%	10%	12%	100%
Faculty	156	59	78	47	41	46	43	470
	33%	13%	17%	10%	9%	10%	9%	100%

Table 8: Favorite search engines

Search Engines	Students	Faculty
Google	130	160
MSN	12	18
Yahoo	35	49
AltaVista	14	33
Rediff	38	30
Hotbot	1	0
bing	1	6
gigablast	0	2
buckbuckgo	0	0
munax	2	2
ansearch	1	3

Table 9: Problemfacedwhile using ICT

	Limited Computer Terminals	Lack of Software	Lack of Training	Lack of Awareness	Lack of Time	Lack of Technical Knowledge
Student	40	34	18	25	42	26
Faculty	15	36	21	34	64	38

faculties) then 71 students and 125 faculties mentioned it also helps to update their knowledge as per today's world is concerned. There are others aspect of using ICT product like electronic books (58 students, 124 faculties), electronic journals (45 student, 112 faculties), collect data through internet (76 students, 83 faculties), online database (54 student, 72 faculties), for career development (78 students, 77 faculties) and so on.

The above comparative table focuses on the use of Hardware ICT products used by students as well as faculties. Both gave more or less same kind of feedback. About 94% students and 81% faculties said that they use their mobiles for accessing internet. 72% students and 75% faculties also use laptops for the same purposes. For saving data pen drives and CDs and DVDs are used by 63% students and 91% faculties and so on.

While we are doing survey it is very important that how we using internet webs of or that we ask some students and faculties. If we see the chart it is clear that many student and faculties think that the usage of internet web is more at Department/Wi-Fi (94 students,78 faculties) then computer center (45 students, 40 faculties) and the computer centre (32 students, 38 faculties)but if we see the department section there is a contradict between students and faculties feedback. Maximum faculty be life that it is more important for the various departments whereas students belief it least important.

Table 7 described the Information search in libraries through various sources. It is observed that ICT is used mostly for general purpose searching both students and faculties (40% students & 33% faculties).

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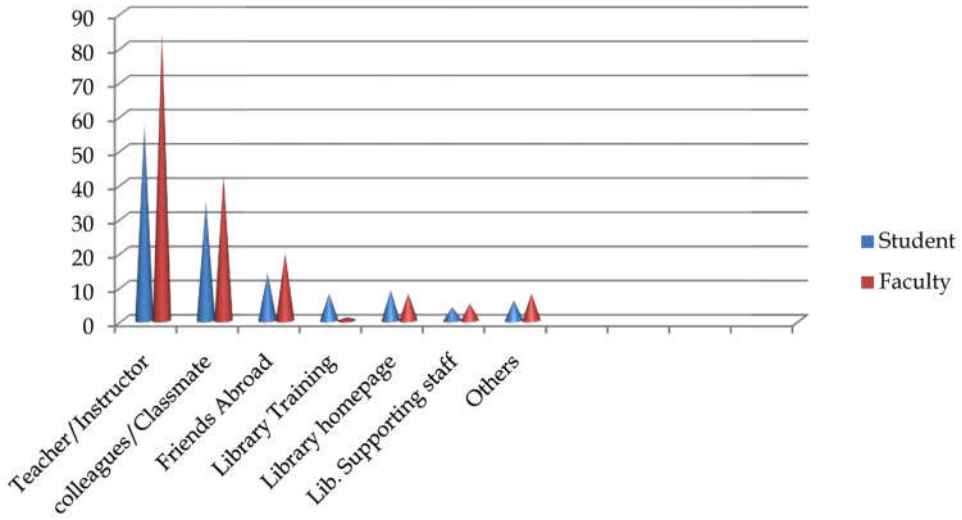

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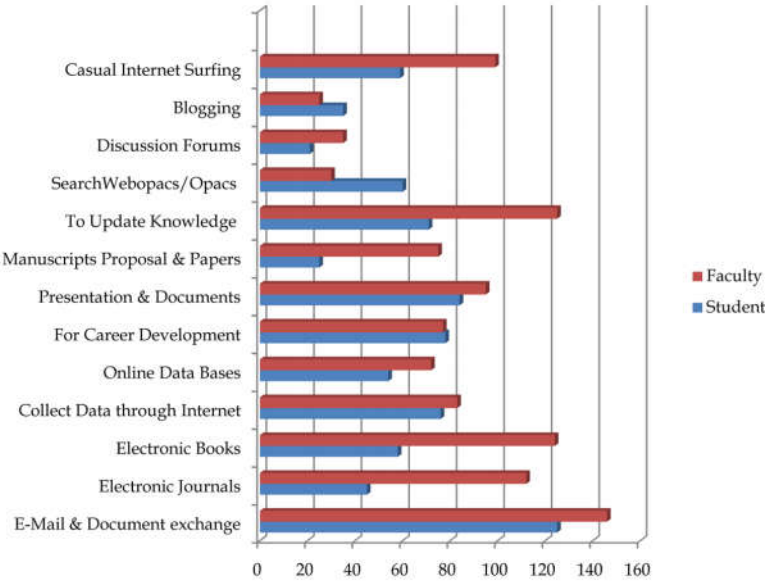

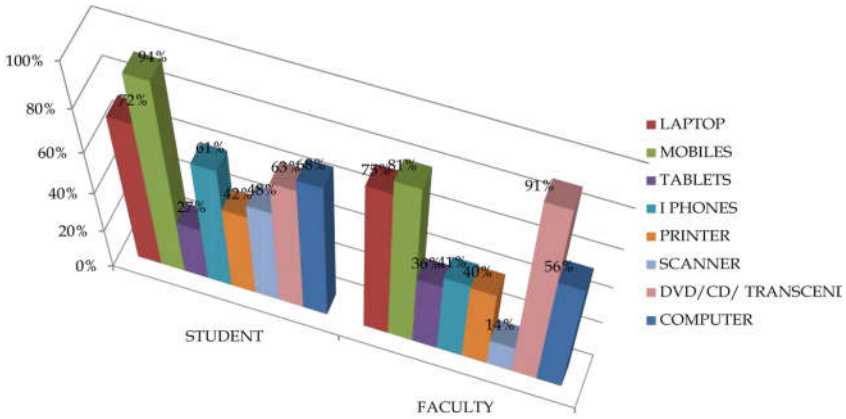

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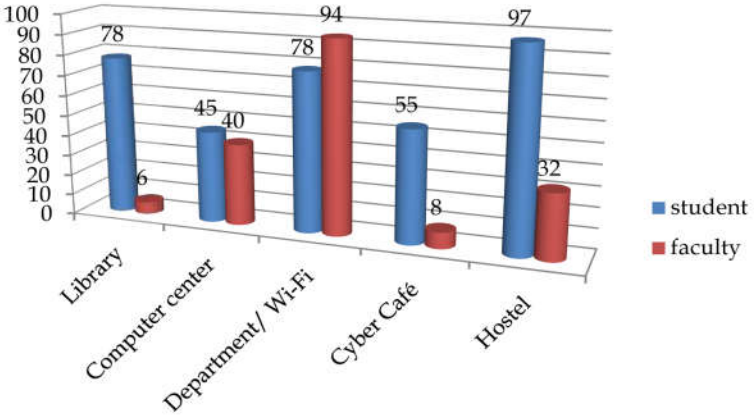

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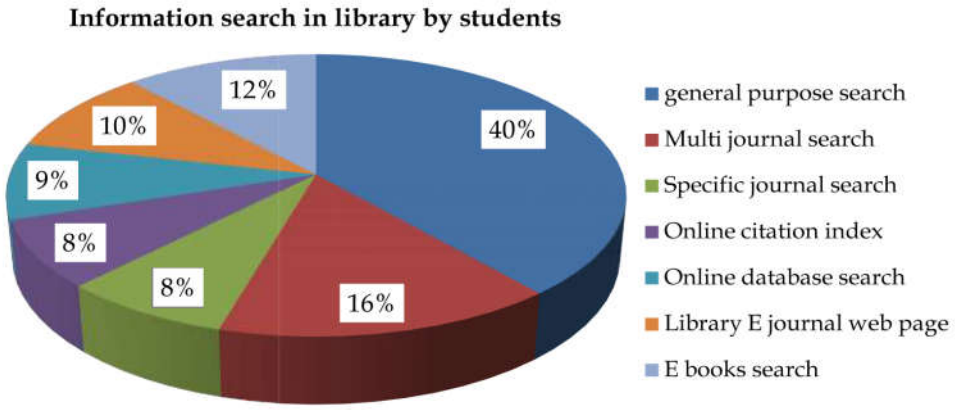

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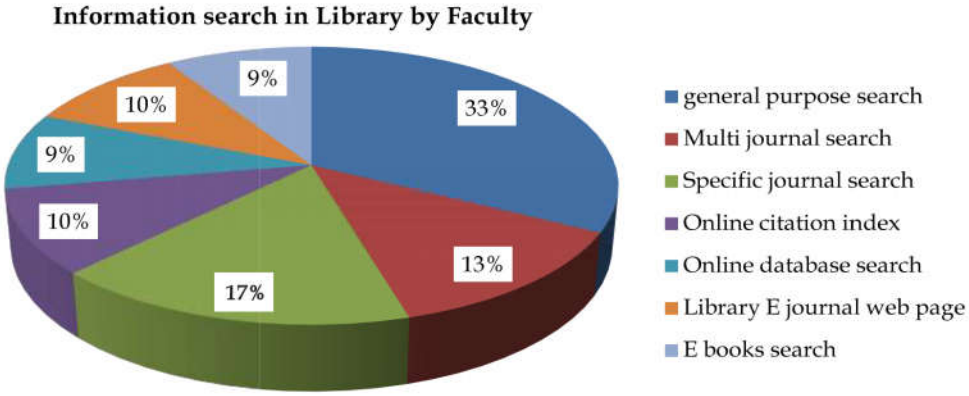

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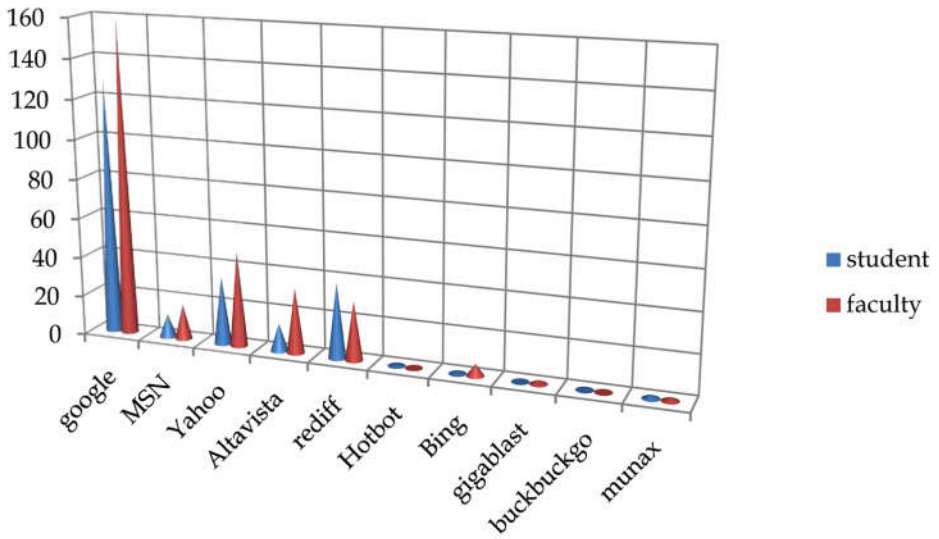
Fig. 10:



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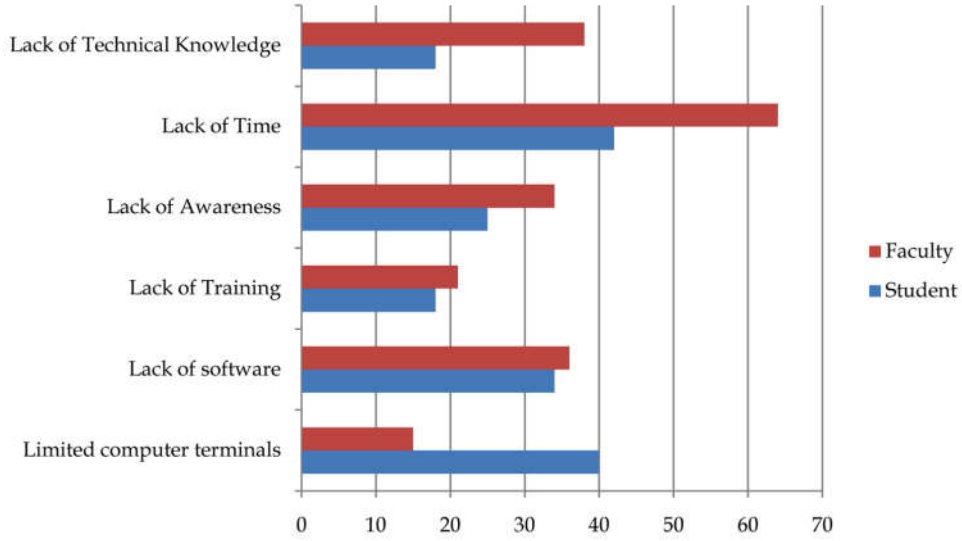


If we consider the student first we can see 40% search website for general purpose which is huge in number after those maximum students searched for multi journal search (16%), library E-books (12%), and e journal websites (10%).

While the same is observed and questioned to faculties, they gave more or less similar kind of answer like 33% said they search for generalpurpose, 17% search specific journal websites, and 13% search for Multi journal search and so on. The Table 8 indicates that the favorite different people have favorite search engines which are being shown in bar graph. Most favorite search engine used by students and faculty is Google and second is yahoo. 130 students and 160 faculty use Google search engine.

In every application there are some advantages as well as disadvantages. So when we asked about the problem related to the ICT, people have different opinion majority of student as well as faculties said that the problem is generated as because of lack of time (42 students, 64 faculties), lack of software (34 students, 36 faculties), lack of awareness (25 students, 34 faculties), limited number of computers (40 students,15 faculties), lack of training (18 students, 21 faculties) and lack of technical knowledge (26 students, 38 faculties).

The above table discussed about infrastructural problem about using ICT many students and faculties mentioned it was because of low internet connectivity (66 students, 74 faculties), problem in networking (42 students, 55 faculties). It means when we use ICT the internet connection should be fast there should not be any problem in networking otherwise it will not work properly.

Table 10: Infrastructural problemin usingICT

	Low Internet Connectivity	Problem In Networking	Compatibility Of Systems	Insufficiency Of Workstations
Student	66	42	24	38
Faculty	74	55	20	18

Table 11: Selective Measures to use ICT in Library

	Librarian Desk	Reference Librarian	Circulation Desk	Colleagues	IT In charge
Student	24	32	62	78	15
Faculty	45	18	70	05	24

Table 12: ICT Products mostly used in Libraries

	Library software	OPAC Search	E Library	Reprography	Total
Student	70	78	65	35	248
	28%	31%	26%	14%	100%
Faculty	87	48	19	12	166
	52%	29%	11%	7%	100%

Table 13: ICT used by libraries for library services

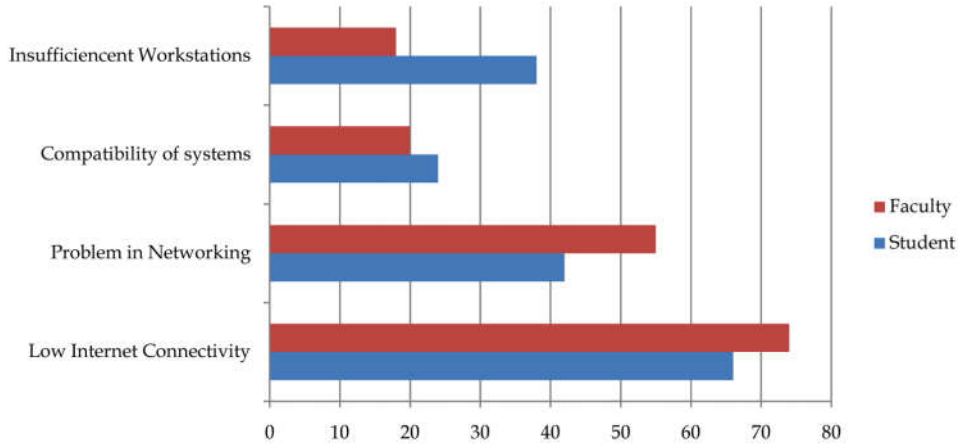
Services	Yes	No
Reprography	32	04
Informationservice	28	8
Inter-library loanfacility	4	32
Translationservice	2	34
CAS	24	12
SDI	14	22
Bibliographicservice	21	10
CD/DVD ROM	33	04
Onlineservice	28	08
Online journals/ databases	27	09

Table 14: Servicesassumed by computer

Services	Yes	No
Accessionlist	29	7
Bookorderlist	22	14
Currentawarenessservices	24	12
Circulation	28	8
Cataloguing	28	8
Documentdelivery	18	18
Respectiveliteraturesearch	21	15
Serialcontrol	25	11

Table 15: Shortcomings in library development

ProblemsAffectingtotheLibrary	Total	Percentage
Inadequatebudget	34	94%
Lackofplanning	32	88%
Lackofinterest inlibraryproblemat theorganizationlevel	33	92%
Shortageof staff	30	83%
LackofadequateICTfacilities	34	94%
Inadequately trainedstaff	33	92%
Improper salarystructureoflibrarystaff	28	77%
Lackofcentralizedlibraryoperations	5	13%



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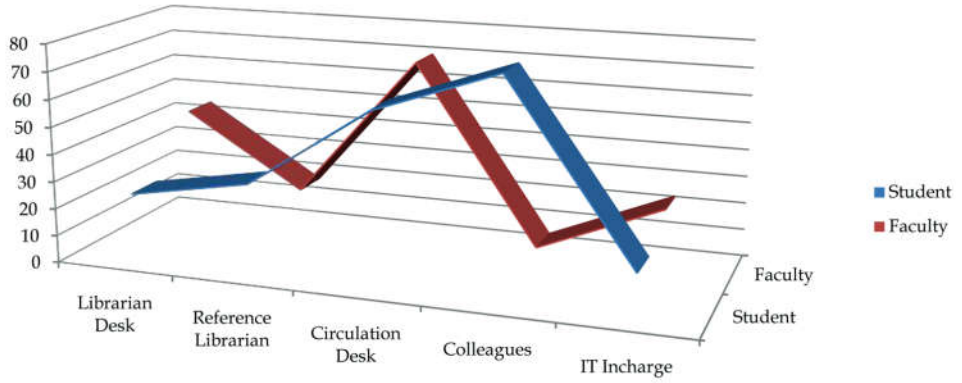

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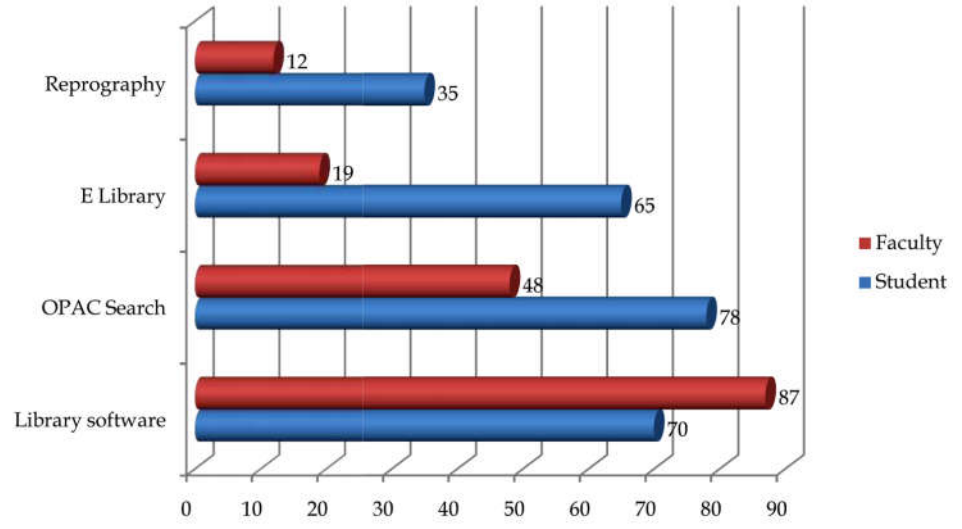
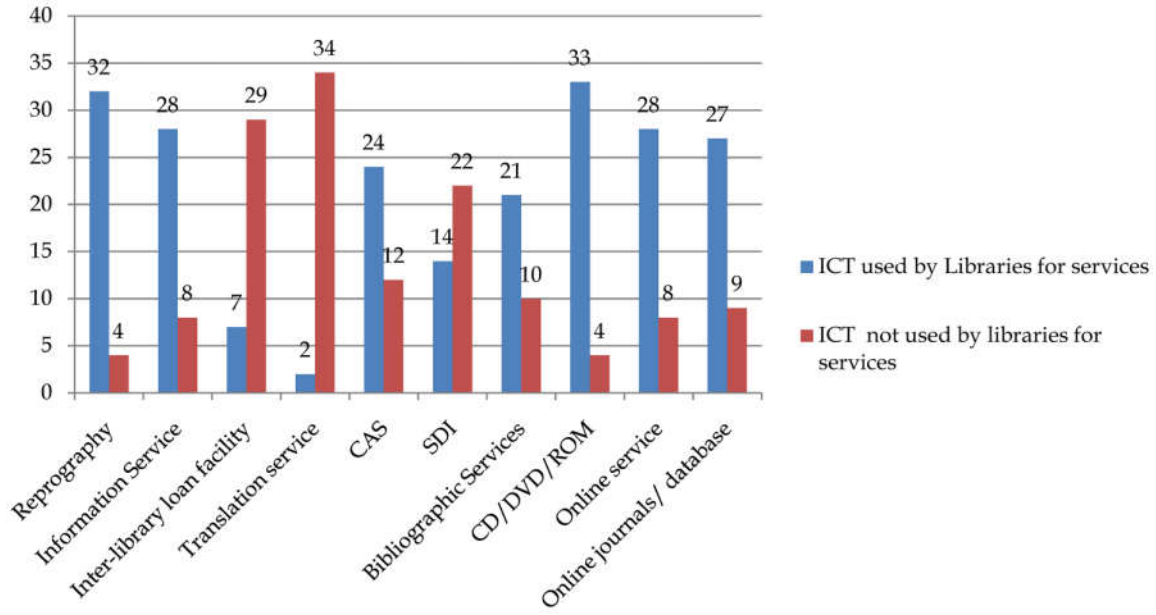


Fig. 14:

It should be kept in the mind that if you are using ICT product in that case college should have proper Wi-Fi connection especially in the library section.

The table indicates that there are different elective measures for getting help for using ICT for library access. Maximum people responded that they get help at circulation desk 62 students and 70 faculties respondent that they get their required information about ICT products at circulation desk only, Library reference desk (32 students, 18 faculties). From the graph 1 can be understood that most of the students learn about ICT product with the help of their friends.

Again we asked the same question but taking in different parameters. 28% students and 52% faculties said they use library software and 31% students and 29% faculty use OPAC search for accessing library.



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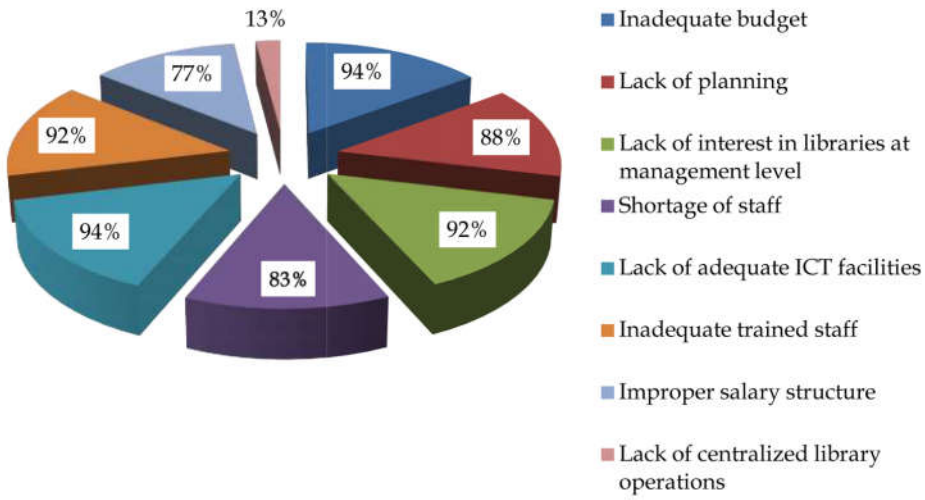

Fig. 16:

If we see the chart above we find that 32 libraries provide reprography service in their libraries, 33 libraries have rich collection of CD/DVD etc. 28 libraries give information service and online service to their users using ICT as tool. Out of 36 libraries upmost are not providing translation and inter loan facility to their users.

If we observe the above table we find that most of the services which were carried out manually are now assumed by computer use. Out of 36 private colleges' 78% college use computer and software in their libraries for routine work of library i.e. accession listing, cataloguing, circulation serial control and all other work. Only 22% libraries are working manually and their library automation is under process.

If we observe above pie chart we find that 94% of the colleges are facing the same problems of inadequate budget and ICT facilities. After that 92% colleges have major issue of lack of interest in library development at management level and insufficient trained staff. 88% libraries are also facing

Findings

It is found that the percentage of male is more as compared to female in respect to students, faculties and librarians. From Table 1 it is clear that 69% male and 31% female are students.

58% male and 42% female are faculties and 83% are male and 17% are female librarians. Although the ratio of females is less as compared to males but

we can say that females are also involved in various profession.

The study also concluded that ICT has its impact on libraries and changing traditional libraries to digital form. Most of the library work has been taken over by computers and smart technologies.

With the use of ICT it is easy to store information, to retrieve the information and to disseminate the information swiftly and effectively. Every information need is available at finger tips and everyone is using ICT very expertly. It is identified that private colleges hold up the latest tools to procure, integrate it. Lack of finances and investments somewhere affect the employees and student development and quality.

Suggestions

The study shows that internet surfing is most important for users, so the lab should be well equipped with enough numbers of computer and high speed internet connectivity must be available. Job of the library professionals should be rotated and every professional should have knowledge of ICT and be given the chance to work with ICT use.

Conclusion

This study examines the use ICT in private engineering colleges of Indore. Most of the objectives are met within the results. From the study it is clear from the study that most of the respondents are aware and use ICT application in computer, internet surfing, laptop etc. Mostly responses about use of ICT activities are common like using internet, e reading like e journals and e books, e mails and file transfers and e learning.

ICT application is very important and most of the work has become very easy and fast due to use of computers. Cataloguing, classification Listings of books, patrons/ users daily reports has become very easy. And in coming days ICT will be purely used in libraries. Most of the material will be available in electronic form.

Private colleges must provide best technology products in libraries so that the users can fulfill their needs and get quality knowledge for research and development. Professionals should develop their skills and expertise themselves for technology use and information dissemination so as to face the changing concept of libraries.

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A Survey on Students' Perception of Librarianship as a Profession for Marital Choice

Bulu Maharana[1], Subhashree Sahu[2], Sabitri Majhi[3]

Abstract

Librarianship has traditionally been considered to be a generalised service profession which involves the job of information management in a supporting role. The advancement of ICT mediated information processing has transformed librarianship as a highly specialised career opportunity. The paper carried out a study to find out the students perception toward librarianship as a profession for marital choices. 200 postgraduate students from both the gender have been surveyed and the result finds that boys are more inclined towards librarianship as a marital choice. The general perception of the students towards librarians is quite positive.

Keywords: Librarianship; Professional Status; Social Status-Librarianship; Marital Choices.

Introduction

Traditionally, librarianship is a profession associated with acquiring, organizing of books and other documents and disseminating information to the users according to their information need. The rapid technological developments like internet and World Wide Web have affected the role of a librarian. Now librarianship has become a very challenging profession collaborating with other profession. Of late librarian's role has been changed to information officer, innovator/website designer, educator, database manager, so and so forth. However, librarianship presumed to have not been attained the stature as it is expected to be at par with other professions such as medicine, engineering, education, etc. Professions are social facts, social/ economic categories highly valued for their services and commitment to the community and the society at large. Sociology of professions means to understand the role, status and position of various occupations, trades in society. Among others, profession is an important criterion for marital choice which indirectly signifies the image of professionals in the society. The present study is an attempt to find out the marital choice for librarianship among marriageable students of universities and thereby to trace the social image of the profession.

Objectives

- To find out the perceptions of postgraduate students towards librarianship as a career.
- To study the mind of the young students to accept librarians as their spouse.
- To find out the likes and dislikes about librarians.
- To make a comparison of male and female students marital choice for librarians.
- To understand the social and professional status of librarians.

Methodology

- The prepared research work is a social survey among university students to study their marital preferences for librarians.
- Survey instrument- a structured questionnaire (Appendix-1) was developed and distributed

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among 200 postgraduate students (100 Boys+100 Girls) of Sambalpur University.

- The data collected from the survey has been tabulated, analysed statically, interpreted and generalization developed.

Statement of the Problem

- Whether the postgraduate students like to marry librarians?
- Whether there is a visible difference of opinion of the boys and girls marital choices?
- Which qualities of the librarians the students like and which qualities they don't like while making marital choice?

Data Analysis and Interpretation

Knowledge about Library & Information Science subject

Since Library and Information Science is a non-traditional subject, it has not been generally offered as a subject at the undergraduate level. Obviously, the students seldom have any idea about the subject, its course content, scope and applications, etc. The following table discloses familiarity of the students with library and information science as a subject.

It is evident from the Table 1 that majority of boys (62%) and girls (61%) are of the opinion that LIS is both a science and an art. It reflects that majority of them have reasonable understanding of the subject.

Knowledge about Library & Information Science Profession

By and large, the students are unaware about the job profile of a librarian. The reason is that, the students have minimal interaction with the library professionals. Most of the library services, these days, are automatically available through computers and therefore, less direct interaction with the librarian. Unless someone is very closely associated with the back end activities of the librarian, it would not be possible to figure out the knowledge, skill and responsibilities involved in the job.

As per the data shown Figure 1, most of the boys (53%) and girls (72%) feel that librarianship involves both knowledge and skill. However, very few of both boys (16%) and girls (9%) understand it as knowledge based profession. Again boys are ahead of girls who think LIS is knowledge based as well as skill based.

Student's perception of the job of a librarian

Perception of the job profile of any profession decides the image and status of the professionals. In the present context, the librarians are mostly serving as teaching staff and in some cases as supporting professionals in the core pedagogical activities. In the era of information explosion driven by ICT, the librarian's job has become very challenging and interesting at the same time. The librarian plays the role of an academic councillor, information aggregator, facilitator for reliable personalised information to the entire academic community.

Figure 2 discloses that, as compared to girl

Table 1: Understanding of students about library and information science

Respondents Comments	Boys (*n=100*)	Girls (*n=100*)
It's a Science	18	15
It's an Art	13	18
It's both Science & Art	62	61
I don't know	7	6
Total	100	100

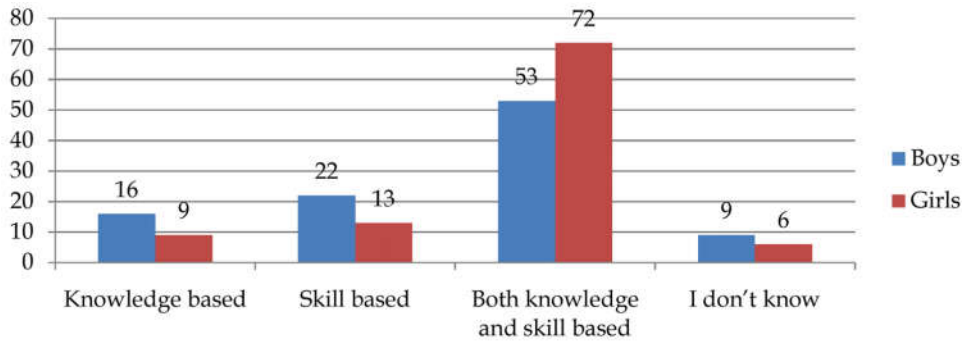

Fig. 1: Knowledge of librarianship as a profession

students, boys possess a more positive perception of the job of a librarian. About one third of boys (36%) found the librarian's job is interesting followed by one fourth (26%) who think the job challenging. On the other hand, one third of girls (33%) think librarian's job is monotonous. However, one fourth of the girls also feel the librarian's is challenging (24%) and interesting (25%).

Personality of librarians

According to Denham (2010), "Personality traits are distinguishing qualities or characteristics that are the embodiment of an individual's habitual patterns of behaviour, temperament and emotion. The building block of successful career development is comprised of four components: skills, values, interests and personality traits. In the present investigation, the postgraduate students of the university were questioned regarding the personality type of librarians and the students responded as indicated in Figure 3, it is clear that majority of both boys (32%) and girls (35%) feel that librarians are extrovert people. Most people believe that an *extrovert* is a *person* who is friendly and outgoing. An *extrovert* is a *person* who is energized by being around other people. This is the opposite of an introvert who is energized by being alone. Since the librarians keep silent inside the library most of the time, 30% of the girls feel that they are introvert and 18% boys also think the same way. As regards to intuitiveness of the librarians, boys (27%) have better opinion than (16%) girls. Only 15 % of each category of students feel librarians are decisive professionals.

Likeness of marrying a librarian

Marriage, also called matrimony or wedlock, is a socially or ritually recognized union between spouses that establishes rights and obligations between them, their children, and their in-laws. In Indian society, the selection of a bride for a groom or a groom for a bride involves a lot of criterions such as education, family, caste, religion, profession, etc. When it comes to profession, the choice is always for a profession which has a high social image and status. The marital choice for librarianship would certainly reflect the social image and status of the profession.

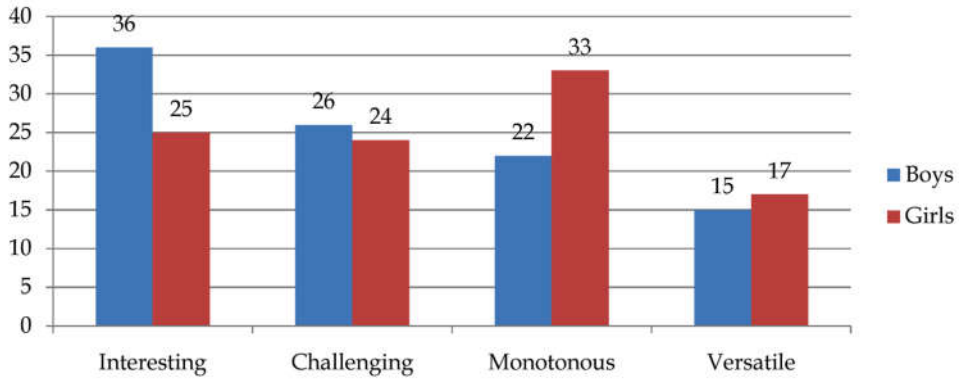

Fig. 2: Students perception of the job of a librarian

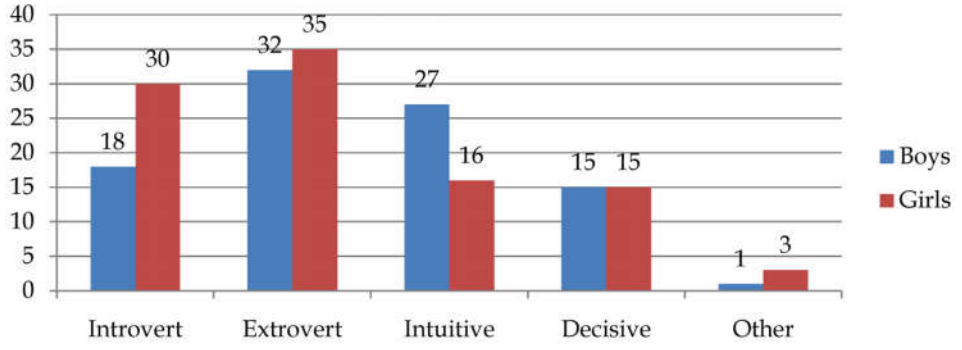

Fig. 3: Personality trait of the librarians

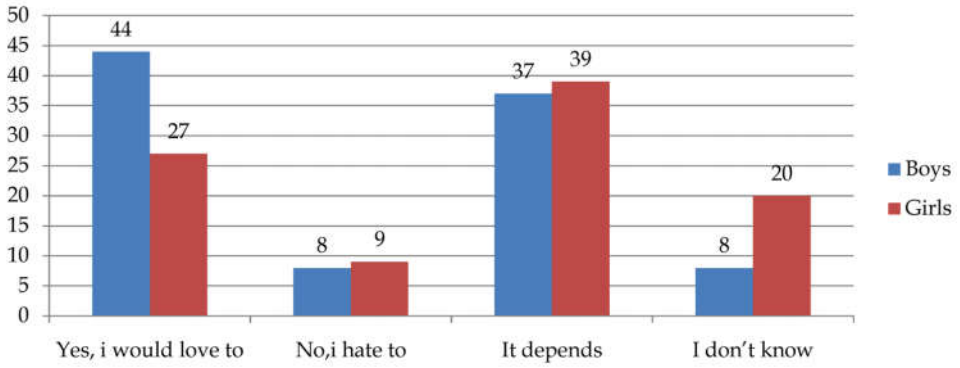

Fig. 4: Likeness of marrying a librarian

Figure 4 reveals that a majority of boys (44%) would like to have librarians as their spouse, but only a few (27%) girls are interested to marry a librarian. However, 8% boys and 9% girls hate to marry a librarian by profession. It was further observed from the table that their marital choice for librarians would depend upon other criterions such as his look, educational qualification, financial status, etc.

Reasons of marrying a librarian

The job of a librarian is non-hazardous and low risk like the teaching professionals. In India, the University Grants Commission (UGC) has given the librarians the status of a teaching staff. Similarly in Odisha, the government by an order of the Department of Higher Education has declared the librarians of degree colleges as academic staff. It is quite perceptible that librarianship is an intellectual and respectful job similar as teaching professionals in academic institutions. In the scientific organizations such as CSIR, DRDO, IARI, etc. librarians are designated as scientific positions.

In order to know whether the students are aware about the professional status of librarians and to find out why they would like to marry a person in librarianship profession, the data in the following table has been collected.

The data in the Table 2 is evident that majority of boys (40%) would like to marry librarians because they are respectful professionals and 25% girls also feel the same. While majority of girls (31%) designate the librarians as serious professionals, boys seem to disagree with only 8% responses. Almost one forth of both boys (25%) and girls (21%) opine that librarians are intelligent. As regards to the resourceful quality, the two categories of students differ in their opinion. While boys (16%) feel the librarians are resourceful who have the ability to find quick and clever ways to overcome difficulties.

Table 2: Why the students would like to marry librarians?

Respondent comments	Boys	Girls
Intelligent	25	21
Resourceful	16	8
Respectful	40	25
Serious professionals	8	31
Any other(please specify)	8	7
Total	97	92

Table 3: Why the students would not like to marry librarian?

Respondent comments	Boys	Girls
Boring	28	32
Stupid	7	3
Lethargic	12	7
Un privileged	9	6
Any other(please specify)	12	9
Total	68	57

Reasons of not marrying a librarian

There are many people who have strong dislikes to certain professionals for reasons associated commonly with the profession. The *skills/attributes/ traits/*knowledge that librarianship considered consider most valuable for the work include: communication *skills,* presentation *skills,* critical thinking *skills,* problem solving ability, intellectual curiosity, knowledge of academic subjects/ scholarly communication, etc.

However, the students in the present investigation and cited some of the reason why they did not like to marry a librarian as indicated in the table below.

Table 3 reveals that majority of boys (28%) and girls (32%) feel that librarians are boring as they are confined into the library, not much interactive, silent and docile. A few of boys (12%) and girls (7%) also viewed that librarians are lethargic. 9% boys also feel that librarians are unprivileged professionals.

Table 4: Ranking of Professions as marital choice for Girls

Professionals	Overall Points	1st Choice	1st and 2nd choice	Overall Ranking
Teacher/Professor	342	29	42	1
Banking Professional	345	20	39	2
Engineer	395	11	25	3
Doctor	383	3	24	4
Scientist	447	10	20	5
Business Man	541	10	14	8
Librarian	493	7	8	6
Legal Professional	514	4	7	7
Manager	565	2	6	9

Table 5: Ranking of Professions as marital choice for Boys

Professionals	Overall Points	1st Choice	1st and 2nd choice	Overall Ranking
Teacher/Professor	366	28	40	2
Librarian	315	12	27	1
Scientist	433	9	22	4
Doctor	427	3	16	3
Banking Professional	452	11	16	5
Business Man	477	13	16	7
Engineer	481	4	12	8
Legal Professional	474	3	9	6
Manager	539	2	4	9

Table 6: Students perception on Dr. Kalam's view of librarians

Respondent comments	Boys	Girls
It's very true, i agree	69	65
To some extent true, not always	11	15
Its kalam's greatness..but i don't agree	6	7
No idea.. can't comment	12	12
Total	98	99

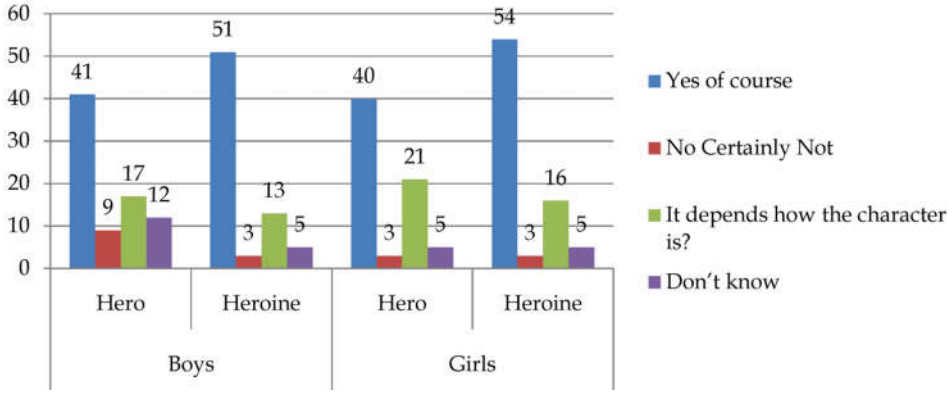

Fig. 5: Hero/heroine of the movie as a librarian by profession

Table 7: Hero/heroine of the movie as a librarian by profession

Respondent of Comments	Boys		Girls	
	Hero	Heroine	Hero	Heroine
Yes of course	41	51	40	54
No Certainly Not	9	3	3	3
It depends how the character is?	17	13	21	16
Don't know	12	5	5	5
Total	79	72	69	78

Ranking of professions as marital choices of girl students

The postgraduate girl students have responded to the question to which profession they would like to marry in order of their preferences ranking 1 (first choice) to 10 (last choice). As the girls were asked they cited the 9 professions whom they would prefer to marry are given in the Table 4. On the basis of the overall points (aggregated points from all the students), the first choice and the second choice of girls, the following table ranking has been reflected in the table below. In the ranking of professions on the basis of marital choice of girls, teachers/professors has been the rank-1 with a highest 29% of girls showing their first preference and 42% girls as first and second preference together. Nest to teaching professional, the banking profession is the second choice for girls followed by engineers as third choice. Librarian is the seventh rank as per the marital choice of girl students. Managers are at the last choice for marriage.

Ranking of Professions as marital choices of boy students

Traditionally, in Indian society the job of the boy is prime criteria for selection as a groom. In marriages girl's profession or job has never been given much importance. However, in the post modern society especially after the globalization, boys also started looking for jobs of the girls and thus the profession become criteria for marital choice. The following table embodies data relating marital choices of boys and the ranking of professions.

Table 5 reveals that marital choice of boys for spouse selection. The first choice for boys is teaching professional (teacher/professors) with 40% boys indicating as their first and second choice. For boys librarians are the second rank professionals for marital choice with 27% indicating their preferences. Surprisingly, the boys have a higher preference for librarians as their spouse than the other professionals.

Students perception of librarianship as a profession

Librarianship is a missionary profession and many people feel those who are blessed would become librarian. A librarian is a highly privileged human being as he live in the temple of knowledge and has access to world's best knowledge resources. Many academicians have perceived librarianship as highly intellectual profession who support the academic endeavours to take shape.

Dr. A.P.J. Abdul Kalam, the former president of India, a great academician, scientist par excellence, visionary and a philosopher has said, "*Librarian is the best academician in any university system*". A librarian understands, identifies, validates and channelizes treasures knowledge to the students and teachers in the university. In order to know whether the postgraduate student agree to this view point of Dr. Kalam, the following data has been collected and tabulated in Table 6.

A majority of boys (69%) and girls (65%) agree with what Dr. A.P.J. Abdul Kalam thought about the librarianship as a profession. They feel that librarian is the best academician who guides and supports the students and teachers in their academic discourses with desired information. Yet, a few of the boys (11%) and girls (15%) feel the statement of Dr. Kalam is true but not always. In some cases the librarians do not support to their expectation.

Students Perception of Librarianship as a role model

In the bollywood movies the hero and heroine play the character of a professional which the audience like a lot and that become role model profession for them. For example, in many films the hero is a teacher or a lawyer or a doctor or a scientist or a businessman or a policeman. The characters played by the heroes indirectly reflect the status of that profession in the society. Once the people like the profession, then only they would like to see the hero of the film as a professional. (Table 7 and Figure 5)

Interestingly, more than half of both the boys (51%) and girls (54%) would like to see the heroine of a hindi movie in the role of a librarian. On the other hand, equal number of both boys (41%) and girls (40%) want to see the hero of the movie playing the character of a librarian. Both the boys and girls designate librarianship a role model feminine profession.

Conclusion

Librarianship is a noble and knowledge based profession. Librarianship is a profession that is dedicated to serving the general public, providing timely and accurate information, thus contributing to the development of the society. Now librarianship profession is popular in all spheres of activities such as education, scientific, industry, public services, etc. The present study highlights the social image of librarians as professionals. The study finds that the general perception of the students towards librarians is quite positive. As compared to girls boys are more inclined towards librarianship as a marital choice. However, students of both the gender believe librarianship is a highly skilled and challenging profession.

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Use and Impact of E-Resources at NREC College Library: A Case Study

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Abstract

Today availability of e-resources in a university library is very common. But their proper and maximum use is a matter for discussion. The Library environment has current undergone drastic change in terms of collection and services. The proliferation of resources has a significant impact on the academic community the library users to a great extent. Accordingly; these resources have occupied a significant place in the collection and budget of almost all libraries. Student's attitudes seem to be very positive towards resources for their study and research and the role of libraries as gateway to provide assistance in accessing these resources. The college library should play a pivotal role in facilitating the students and teachers alike in the use of the resources and other library and information services. The college library should organize awareness and training programmes and seminars to educate the users on seeking information from resources and to maximize the use of library resources and services. The scope of the study is confined to the users of NREC College regarding the effective use of resources.

Keywords: Electronic Resources; Electronic Services; E-journals.

Introduction

The library and information centre is a part of any educational institution, which is the hub of the teaching, and learning activities where students, teacher and researchers get their required information according to their need. In the traditional libraries users have to spend much more time for searching a small piece of information and for that they have to depend mainly on the library professionals or library staff. But in the age of information communication technology, computers are being used for day-to-day housekeeping activity of the library, which saves the time of the end users, and library professionals also and at the same time avoid duplication of work and make the library service smooth and effective.

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Advances in computer applications during the past few decades have brought radical changes in the way information is gathered, store, organized, accessed, retrieved and consumed. The application of computers in information processing has brought several products and services to the scene. The Internet and the Web are constantly influencing the development of new modes of scholarly communication; their potential for delivering goods is quite vast, as they overcome successfully the geographical limitations associated with the print media. Further, the distribution time between product publication and its delivery has been drastically reduced. The Internet can be used for efficient retrieval and meeting information needs. This is very important for university libraries since most of them call for more and more research work. This important fact is convincing many libraries to move towards digital e-resources, which are found to be less expensive and more useful for easy access. This is especially helpful to distant learners who have limited time to access the libraries from outside by dial-up access to commonly available electronic resources, mainly CD-ROM, OPACs and Internet, which are replacing the print media.

The application of computers to information processing has brought several products and services to the scenes. Consequently, the academic community has undergone tremendous changes during these years, assuming new dimensions influenced by technology-driven applications. Libraries have witnessed a great metamorphosis in recent years both in their collection development and in their service structures. Thus Libraries are using technology to improve the management of scholarly information to strengthen and speed access to scholarly information not held locally. Over the last several years a significant transformation has been noticed in collection development policies and practices. Print medium is increasingly giving way to the electronic form of materials (Sharma, 2009)[12]. Ani (2008) [3] states that "the transition from print to electronic medium apart from resulting in a growth of electronic information, has provided users with new tools and applications for information seeking and retrieval. Electronic resources are invaluable research tools that complement the print-based resources in a traditional library setting.

Review of Literature

Ajuwon (2003) [1] also carried out a study of uptake of ICTs by health science students at the University College Hospital, Ibadan. This study found that 57% of students sampled could not use a computer, that the use of the database was poor, due to lack of awareness, lack of access to computers, insufficient training and the high cost of provision.

Ali (2005) [2] found out that 83% of students surveyed felt that using this source saved them time, and found it relatively easy to use. Two thirds of those surveyed stated that if the CD-ROM was busy, they would wait for it to become free rather than use the print tool. However, a study of online searching of scientific information in science and technology libraries of Delhi reveals a sizeable number of users (almost 60%) are facing numerous problems while browsing electronic information, such as lack of knowledge about the resources, lack of trained staff and inadequate terminals).

Ani (2008)[3] states that "the transition from print to electronic medium apart from resulting in a growth of electronic information, has provided users with new tools and applications for information seeking and retrieval. Electronic resources are invaluable research tools that complement the print-based resources in a traditional library setting.

Jagboro (2003) [4] had also emphasized the emerging reliance and attitude of users to electronic resources. In a study she conducted in some Nigerian Universities, it was found that 45.2% of respondents accessed electronic resources from cybercafés. Though this attitude, according to her is due to the proximity of cybercafés to user facilities.

Kebede (2002) [5] carried out a survey of the use of ICTs in ten African Public Library Services. The survey found that, although most libraries had internet connectivity, very few were offering web-based information services to their users. The study however, identifies four barriers to the effective provision of electronic resources in those libraries, namely: lack of strategic planning: lack of adequate or reliable funding; lack of use of Internet to provide information services to users and a lack of consistent training for users in new ICT services.

Madhusudhan (2008) [6] Studies have also been carried out on the use of electronic resources by teachers, students and research scholars of universities and research organizations. Seventy-eight percent (78%) of the respondents feel that the use of the UGC – Infonet e-journals has created high dependency value on their research work and they needed current article alert services and electronic document supply services.

Maxwell Akussah (2015) [7] The study investigates the relationship between impact of electronic resources and its usage in academic libraries in Ghana: evidence from Koforidua Polytechnic & All Nations University College, Ghana. The study was a quantitative approach using questionnaire to gather for data and information.

Oduwole and Akpati (2003) [8] investigated the accessibility and retrieval of electronic information at the University of Agriculture Library, Abeokuta, Nigeria. The 425 participants responded out of a survey population of 1,000, giving a response rate of 53.87 percent. The study revealed that electronic information cuts across all members of the University community that it was to a greater extent easy to use and were satisfied with their search outputs. The constraints identified included insufficient number of terminals available for use despite high demand and inadequate electricity supply.

Ojo and Akande (2005) [9] in a survey of 350 respondents examined students access, usage and awareness of electronic information resources at the University College Hospital (UCH) Ibadan, Nigeria. The study revealed that the level of usage of the electronic information resources is not high. A major problem however identified is lack of information

retrieval skills for exploiting electronic resources, thus making the level of usage of resources by medical students very low.

Okello-Obura and Magara (2008) [10] investigated electronic information access and utilization at the East African School of Library and Information Science, Makerere University, Uganda. Out of the 250 targeted students, 190 responded, giving a response rate of 76%. The study revealed that users derived a lot of benefits from electronic resources gaining access to a wider range of information and improved academic performance as a result of access to quality information.

Ray and Day, (1998) [11] The importance and wide ranging scope of electronic resources for general communication, information retrieval and instructional delivery to support teaching and research activities in tertiary educational institutions is acknowledged worldwide. The literature also shows that a number of relevant studies have been carried out on the use of e- resources by lecturers, research scholars and students worldwide. General user opinion towards the use of electronic resources, in particular CD-ROM, has been positive, with students enjoying using these sources and finding relatively few problems while using them.

Sharma, Chelan (2009) [12] Use and Impact of e-Resources at Guru Gobind Singh Indrapratha University (India): A case study Electronic Journal of Academic and Special Librarianship. The present paper examines the existence of various e-resource databases in Guru Gobind Singh Indraprastha University Library. The study also highlights the preferences and importance of online resources among the teachers and research scholars.

Thanuskodi (2010) [13] identified and tested ten e-journal sources: Highwire Press, MedBio World, Ingeta, All Health Net, Blackwell Synergy, Medind, Science Direct, LWW Online, Springer Link, and Health Inter Network India and found that the respondents preferred the Highwire Press CD-ROM database with a mean score of 4.15 on a 5 point rating scale. In effect, all the studies reviewed above are implemented on the assumption that uptake of electronic resources is highly desirable in that it leads to increased productivity of work, learning, teaching and research.

Research Methodology

Resources are becoming very important in these days as they are more up to data, and can be accessed anywhere, Crossing all geographical boundaries such resources add value in contact R and D Activities. Therefore the topic impact of resources by the NREC College was selected to study the various resources and analysis the utility and effectiveness in provision of Information Services.

The study is based on a survey method for which a structured questionnaire was designed and tested for the purpose of data collection. The collection data through organized and tabulated be using simple statistical methods.

In this study, the users who are pursuing research and the members of NREC College library were selected for the study.

Questionnaires are a tool to collect the data from the diverse large and widely scattered group. This method of data collection is quite popular. A questionnaires consists of a number of questions printed in a definite order. In this method a questionnaires was given to U.G, and P.G, of the NREC College with a request to answer the questions and return the questionnaires.

The pilot study was conducted with 20% of stratified random sampling taken from the total population of the NREC College in 2016. A questionnaire was designed and used to collect the data from undergraduate's postgraduates. The data was analysed on the basis of results of the pilot survey on the basis of pilot study the questionnaires was further improved and standardized.

The collection of data from the entire population of students was enough to be covered in a single study. Therefore, The total numbers of questionnaires distributed are 150 including undergraduates and postgraduates of NREC College. A Total number of 135 filled in questionnaires were returned back. There investigator selected 123 questionnaires for the analysis 12 questionnaires were not completed filled.

The data collected through questionnaires, Observation and interview were organized and tabulated by using statistical method.

Results and Discussion

Several methods can be used to collect primary data. The choice of a method depends upon the purpose of the study. The resources available and the skills of the researcher. These are time when the method most appropriate to achieve the objectives of a study cannot be used because of constraints such as a lack of resources and/or required skills. In such situations you should be aware of the problems these limitations impose or the quality of the data.

Which type of services use in the library?

Table 1 Show that U.G students 68 (91.89%) and P.G students 29 (59.18%) are using Circulation service, U.G students 52 (70.27%) and P.G students 45 (91.83%) are using Current awareness services, U.G students 64 (86.48%) and P.G students 44 (89.73 %) are using Reference and information, U.G students 56 (75.67%) and P.G students 33 (67.34 %) are using Bibliographic services, U.G students 14 (18.91 %) and P.G students 17 (34.69 %) are using S.D.I services, U.G students 48 (64.86 %) and P.G students 32 (65.30 %) are using Abstracting/ Indexing services, U.G students 38 (51.35 %) and P.G students 26 (53.06%) are using Reservation of Documents, U.G students 66 (89.18%) and P.G students 33 (67.34%) are using Internet services, U.G students 50 (67.56%) and P.G students 36 (73.46%) are using CD-ROM Database service, U.G students 38 (51.35 %) and P.G students 16 (32.65 %) are using Reprographic services, U.G students 22 (29.72%) and P.G students 23 (46.93%) are using OPAC, U.G students 64 (86.48%) and P.G students 34 (69.38%) are using Online Database/E journals, U.G students 64 (86.48 %) and P.G students 29 (59.18 %) are using Inter library loan services are in the library.

Purpose of using the library resources

Table 2 Show that U.G 72 (94.29%) students and P.G 49 (100%) students are using Borrow Books, U.G 50 (67.56%) students and P.G 30 (61.22%) students are using Consult Periodical, U.G 62 (83.78%) students and P.G 33 (67.34%) students are using Consult Reference Services, U.G 46 (62.16%) students and P.G 34 (69.38%) students are using Browse Internet, U.G 58 (78.37%) students and P.G 34 (69.38%) students are using CD-ROM Databases, U.G 66 (89.18%) Students and P.G 47 (95.91%) students are using Newspaper, of using the library resources. U.G 26 (35.13%) students and P.G 14 (28.57%) students are using Thesis/Dissertation purpose of library resources.

Table 1: Type of services use in the library

S. No.	Library Services	U.G. N = 74	%	P.G N = 49	%
1	Circulation services	68	91.89	29	59.18
2	Current Awareness services	52	70.27	45	91.83
3	Reference Services	64	86.48	44	89.73
4	Bibliographic services	56	75.67	33	67.34
5	S.D.I services	14	18.91	17	34.69
6	Abstracting /indexing services	48	64.86	32	65.30
7	Reservation of Documents	38	51.35	26	53.06
8	Internet services	66	89.18	33	67.34
9	CD-ROM Database services	50	67.56	36	73.46
10	Reprographic services	38	51.35	16	32.65
11	OPAC	22	29.72	23	46.93
12	Online Database/E –journals	64	86.48	34	69.38
13	Inter library loan services	64	86.48	29	59.18

(Multiple answer were permitted)

Table 2: Purpose of using the library resources

S. No.	Using the Library resources	U.G N = 74	%	P.G N = 49	%
1	Borrow Books	72	94.29	49	100
2	Consult Periodical	50	67.56	30	61.22
3	Consult Reference Services	62	83.78	33	67.34
4	Browse Internet	46	62.16	34	69.38
5	CD-ROM Databases	58	78.37	34	69.38
6	Newspaper	66	89.18	47	95.91
7	Thesis/Dissertation	26	35.13	14	28.57

(Multiple answer were permitted)

Table 3: Dose the library have adequate facilities for the following electronic resources

S. No.	Facilities of electronic resources	U.G N=74	%	P.G N=49	%
1	Sufficient access to computer terminal for internet usages	72	97.29	43	87.75
2	Online database	70	94.59	43	87.75
3	CD ROM multimedia	50	67.56	20	40.81
4	Online Public Access Catalogue (OPAC)	22	29.72	7	14.28

(Multiple answer were permitted)

Facilities of electronic resources

Table 3 Show that U.G student 72 (97.29%) and P.G students 43 (87.75%) are using Sufficient access to computer terminal for internet usages, U.G students 70 (94.59%) and P.G students 43 (87.75%) are using Online database, U.G students 50 (67.56%) and P.G students 20 (40.81%) are using CD-ROM multimedia, U.G students 22 (29.72%) and P.G students 7 (14.28 %) are using Online Public Access Catalogue (OPAC) for the electronic resources.

What are the problems faced while cussing electronic resources?

Table 4 Show that U.G students 72 (97.29%) and P.G students 44 (89.79%) are using Too much information is retrieved , U.G students 46 (62.16%) and P.G students 33 (67.34%) are using Lack of IT knowledge and skill for effective utilization of services, U.G students 54 (72.97%) and P.G students 39 (79.59 %) are using Limited access to computer, U.G students 58 (78.37%) and P.G students 11 (22.44%) are using Information scattered in too many services, U.G students 38 (51.35%) and P.G students 32 (65.30%) are using Lack of power supply the problem faced electronic resources.

How often do you use electronic information sources?

Table 5 Show that U.G students 38 (51.35%) and P.G students 23 (46.93%) are using Internet resources, U.G students 14 (18.91%) and P.G students 8 (16.32%) are using E-journals, U.G students 38 (51.35%) and P.G students 38 (77.55%) are using Online databases, U.G students 10 (13.51%) and P.G students 11 (22.44 %) are using E-Book electronic information sources.

Do you agree that training is required for lasting and using information sources?

Table 6 Show that U.G Students 68 (91.89%) and P.G students 33 (67.34%) are using Learning more about internet and search engine, U.G students 70 (94.59%) and P.G students 39 (79.59%) are using Information retrieval skill, U.G students 18 (24.32%) and P.G students 10 (20.40%) are using OPAC searching, U.G students 70 (94.59%) and P.G students 44 (89.79%) are using Database searching knowledge for lasting information sources.

Table 4: Problem faced cussing electronic resources

S. No.	Problem faced cussing electronic resources	U.G N=74	%	P.G N=49	%
1	Too much information is retrieved	72	97.29	44	89.79
2	Lack of IT knowledge and skill for effective utilization of service	46	62.16	33	67.34
3	Limited access to computers	54	72.97	39	79.59
4	Information scattered in too many services	58	78.37	11	22.44
5	Lack of power supply	38	51.35	32	65.30

(Multiple answer were permitted)

Table 5: Do you use electronic information sources

S. No.	Do you use electronic information sources	U.G N=74	%	P.G N=49	%
1	Internet resources	38	51.35	23	46.93
2	E-journals	14	18.91	8	16.32
3	Online databases	38	51.35	38	77.55
4	E-Book	10	13.51	11	22.44

(Multiple answer were permitted)

Table 6: Do you agree that training is required for lasting and using information sources

S. No.	Using information sources	U.G N=74	%	P.G N=49	%
1	Learning more about internet and search engine	68	91.89	33	67.34
2	Information retrieval skill	70	94.59	39	79.59
3	OPAC searching	18	24.32	10	20.40
4	Database searching knowledge	70	94.59	44	89.79

(Multiple answer were permitted)

Which search functions do you use while searching for information you many chose more than one?

Table 7 Show that U.G students 24 (32.43%) and P.G students 9 (18.36%) are using Keyword search, U.G students 48 (64.86%) and P.G students 27 (55.10 %) are using Title search , U.G students 6 (8.10%) and P.G students 8 (16.32%) are using Author search, U.G students 4 (5.40%) and P.G students 5 (10.20%) are using Boolean operates, U.G students 10 (13.51%) and P.G students 25 (51.02%) are using Subject search for information.

What is the method used for locating information?

Table 8 Show that U.G students 44 (59.45%) and P.G students 22 (44.89%) are using search the shelves yourself, U.G students 30 (40.54%) and P.G students 23 (46.93%) are using Ask the library staff, U.G students 8 (10.81%) and P.G students 10 (20.40%) are using Consult the library catalogue OPAC, U.G students 8 (10.81%) and P.G students 13 (26.54%) are using Take the help of the friend/college for locating information.

How did you get informed about the online database sources of information?

Table 9 Show that U.G students 20 (27.02%) and P.G students 15 (30.61%) are using Course contents and syllabus, U.G students 18 (24.32%) and P.G students 16 (22.65%) are using Library personal, U.G students 36 (48.64%) and P.G students 25 (51.02%) are using Computer literature, U.G students 16 (21.62%) and P.G students 7 (14.28%) are using Discussion with professional, U.G students 2 (2.70%) and P.G students 8 (16.32 %) are using Conference/ workshop etc.

Table 7: Which search functions do you use while searching for information you many chose more than one

S. No.	Searching for information you many chose more than one	U.G N=74	%	P.G N=49	%
1	Keyword search	24	32.43	9	18.36
2	Title search	48	64.86	27	55.10
3	Author search	6	8.10	8	16.32
4	Boolean operates	4	5.40	5	10.20
5	Subject search	10	13.51	25	51.02

(Multiple answer were permitted)

Table 8: What is the method used for locating information

S. No.	Used for locating information	U.G N=74	%	P.G N=49	%
1	Search the shelves yourself	44	59.45	22	44.89
2	Ask the library staff	30	40.54	23	46.93
3	Consult the library catalogue OPAC	8	10.81	10	20.40
4	Take the help of the friend /college	8	10.81	13	26.54

Table 9: How did you get informed about the online database sources of information?

S. No.	You get information about the online database sources of information	U.G N=74	%	P.G N=49	%
1	Course contents and syllabus	20	27.02	15	30.61
2	Library personal	18	24.32	16	22.65
3	Computer literature	36	48.64	25	51.02
4	Discussion with professional	16	21.62	7	14.28
5	Conference/workshop etc	2	2.70	8	16.32

(Multiple answer were permitted)

Table 10: How often do you use internet

S. No.	Do you used internet	U.G N=74	%	P.G N=49	%
1	Daily	34	45.94	13	26.53
2	Once a week	32	43.24	26	53.06
3	Once a fortnight	4	5.40	4	8.16
4	Once a month	2	2.70	4	8.16
5	Rarely	4	5.40	9	18.36

(Multiple answer were permitted)

How often do you use internet?

Table 10 Show that U.G students 34 (45.94%) and P.G students 13 (26.53%) are using Daily, U.G students 32 (43.24%) and P.G students 26 (53.06%) are using Once a week, U.G students 4 (5.40%) and P.G students 4 (8.16%) are using Once a fortnight, U.G students 2 (2.70%) and P.G students 4 (8.16%) are using Once a month, U.G students 4 (5.40%) and P.G students 9 (18.36%) are using Rarely the internet.

What is the purpose of using internet?

Table 11 Show that U.G students 52 (70.27%) and P.G students 34 (69.38%) are using Research work, U.G students 16 (21.62%) and P.G students 12 (24.48%) are using Online journals, U.G students 4 (5.40%) and P.G students 7 (14.28%) are using Download text, U.G students 8 (10.18%) and P.G students 11 (22.44%) are using Chatting purpose of internet.

Where do you avail the facility of internet?

Table 12 Show that Often U.G students 70 (94.29%) and P.G students 26 (53.06%) and sometime U.G students 6 (8.10%) and P.G students 10 (20.40%) and never U.G students No Response and P.G students 14 (28.57%) are using University/college, Often U.G students 16 (21.62%) and P.G students 22 (44.89%) and sometime U.G students 54 (72.97%) and P.G students 25 (51.02%) and never U.G students 2 (2.70%) and P.G students No Response are using Home, Often U.G students 22 (29.72%) and P.G students 18 (38.77%) and sometime U.G students 52 (70.27%) and P.G students 25 (51.02 %) and never U.G students No Response and P.G students 3 (6.12%) are using Cyber café, Often U.G students 20 (27.02%) and P.G students 2 (4.08%) and sometime U.G students 52 (70.27%) and P.G students 29 (59.18%) and never U.G students 2 (2.70%) and P.G students 4 (8.16%) are using Others the facility of internet.

Are you satisfied with the internet facilities?

Table 13 Show that U.G students 42 (56.75%) and P.G students 15 (30.61%) are Full satisfied, U.G students 22 (29.72%) and P.G students 25 (51.02%) are partially satisfied, U.G students 10 (13.51%) and P.G students 11 (22.44%) are Law satisfied, U.G students 10 (13.51%) and P.G students 3 (6.12%) are Not satisfied with internet.

Table 11: What is the purpose of using internet?

S. No.	Purpose of using internet	U.G N=74	%	P.G N=49	%
1	Research work	52	70.27	34	69.38
2	Online journals	16	21.62	12	24.48
3	Download text	4	5.40	7	14.28
4	Chatting	8	10.18	11	22.44

(Multiple answer were permitted)

Table 12: Where do you avail the facility of internet?

Avail the facility of internet	U.G N=74 Often	%	Sometime	%	Never	%	P.G N=49 Often	%	Sometime	%	Never	%
University/College	70	94.29	6	8.10	0	0	26	53.06	10	20.40	14	28.57
Home	16	21.62	54	72.97	2	2.70	22	44.89	25	51.02	0	0
Cyber café	22	29.72	52	70.27	0	0	19	38.77	25	51.02	3	6.12
Others	20	27.02	52	70.27	2	2.70	2	4.08	29	59.18	4	8.16

(Multiple answer were permitted)

Table 13: Are you satisfied with the internet facilities

S. No.	You satisfied with the internet facilities	U.G N=74	%	P.G N=49	%
1	Full satisfies	42	56.75	15	30.61
2	Partially satisfied	22	29.72	25	51.02
3	Law satisfied	10	13.51	11	22.44
4	Not satisfied	10	13.51	3	6.12

(Multiple answer were permitted)

What do you find to be the biggest problems while using the internet?

Table 14 Show that U.G students 12 (16.21%) and P.G students 29 (59.18%) are Slow access speed, U.G students 6 (8.10%) and P.G students 6 (12.24%) are Difficulty in finding relevant information, U.G students 18 (34.32%) and P.G students 5 (10.20%) are Overload of information on the internet, U.G students 42 (56.75%) and P.G students 21 (42.85%) are It take too long to view/download page.

Which search engine do you use for searching?

Table 15 Show that U.G students 68 (91.89%) and P.G students 47 (95.91%) are using Google, U.G students 6 (8.10%) and P.G students 7 (14.28%) are using Yahoo, U.G students No Response and P.G students No Response are using Alt vista, U.G students No Response and P.G students 1 (2.04%) are using Rediff, U.G students 1 (1.35%) and P.G students 5 (10.20%) are using Google scholar for searching.

When you search for information on a computer system including internet search engine?

Table 16 Show that U.G students 58 (78.37%) and P.G students 29 (59.18%) are using Keyboard, U.G students 18 (24.32%) and P.G students 23 (46.93 %) are using Subject, U.G students No Response and P.G students 1 (2.04%) are using Full text, U.G students 2 (2.70%) and P.G students 5 (10.20%) are using Bibliographies, U.G students No Response and P.G students 3 (6.12%) are using Abstract for information on a computer system including internet search engine.

Table 14: What do you find to be the biggest problems while using the internet?

S. No.	Biggest problems while using the internet	U.G N=74	%	P.G N=49	%
1	Slow access speed	12	16.21	29	59.18
2	Difficulty in finding relevant information	6	8.10	6	12.24
3	Overload of information on the internet	18	34.32	5	10.20
4	It take too long to view/download page	42	56.75	21	42.85

(Multiple answer were permitted

Table 15: Which search engine do you use for searching?

S. No.	Which search engine do you use for searching e	U.G N=74	%	P.G N=49	%
1	Google	68	91.89	47	95.91
2	Yahoo	6	8.10	7	14.28
3	Alt vista	0	0	0	0
4	Rediff	0	0	1	2.04
5	Google scholar	1	1.35	5	10.20

(Multiple answer were permitted)

Table 16: When you search for information on a computer system including internet search engine.

S. No.	Search for information including internet search engine	U.G N=74	%	P.G N=49	%
1	Keyboards	58	78.37	29	59.18
2	Subject	18	24.32	23	46.93
3	Full text	0	0	1	2.04
4	Bibliographies	2	2.70	5	10.20
5	Abstract	0	0	3	6.12

(Multiple answer were permitted)

Table 17: Purpose of which you use web resources

S. No.	Purpose of use web resources	U.G N=74	%	P.G N=49	%
1	For study and research	42	56.75	23	46.93
2	For improving knowledge	30	40.54	23	46.93
3	Carrier development	4	5.40	11	22.44
4	Finding quick information	2	2.70	5	10.20
5	Any other	0	0	4	8.16

Table 18: How frequently do you use web resources?

S. No.	Do you use web resources	U.G N=74	%	P.G N=49	%
1	Every day	18	24.32	7	14.28
2	2-3 time in a week	52	70.27	37	75.51
3	Weekly	4	5.40	9	18.36
4	Monthly	0	0	4	8.18
5	Occasionally	0	0	6	12.24

(Multiple answer were permitted

Purpose of which you use web resources?

Table 17 Show that U.G students 42 (56.75%) and P.G students 23 (46.93%) are using For study and search, U.G students 30 (40.54 %) and P.G students 23 (46.93 %) are using For improving knowledge, U.G students 4 (5.40%) and P.G students 11 (22.44%) are using Carrier development, U.G students 2 (2.70%) and P.G students 5 (10.20%) are using Finding quick information, U.G students No Response and P.G students 4 (8.16%) are using Any other purpose of web resources.

How frequently do you use web resources?

Table 18 Show that U.G students 18 (24.32%) and P.G students 7 (14.28%) are using Every day, U.G students 52 (70.27%) and P.G students 37 (75.51%) are using 2-3 time in a week, U.G students 4 (5.40%) and P.G students 9 (18.36%) are using Weekly, U.G students No Response and P.G students 4 (8.18%) are using Monthly, U.G students No Response and P.G students 6 (12.24%) are using Occasionally web resources.

Conclusion

The fast growths of information and communication technologies and particularly internet and electronic resources have changed the traditional methods of research, storage, retrieval and communication of scholarly information. Now a day's internet has emerged as most powerful medium for storage and retrieval of information. In order to retrieve relevant information, users have to make use of different electronic and web resources.

The Library environment has current undergone drastic change in terms of collection and services. The proliferation of resources has a significant impact on the academic community the library users to a great extent. Accordingly; these resources have occupied a significant place in the collection and budget of almost all libraries. Student's attitudes seem to be very positive towards resources for their study and research and the role of libraries as gateway to provide assistance in accessing these resources.

The college library should play a pivotal role in facilitating the students and teachers alike in the use of the resources and other library and information services. The college library should organize awareness and training programmes and seminars to educate the users on seeking information from resources and to maximize the use of library resources and services.

The present study revealed the following major points:

- The study show that high percentages of U.G students (91.89%) are used Circulation Services. While mostly P.G students (91.83%) are used Current Awareness services in the library.
- The high percentages of the users were use Borrow Books in the library resources.
- The high percentage of the users was use Borrow Books purpose of the library resources.
- The high percentage of the adequate facilities sufficient access to computer terminal for internet usages for electronic resources.
- The high percentage of the users are the problems faced Too much information is retrieved while cussing electronic resources.
- The high percentages of the users were use online database.
- The high percentage of the users are used information sources Database searching knowledge.
- The high percentages of the users are used searching for information Title search.
- The study show that high percentage of U.G students (59.45%) is used Search the shelves yourself. While mostly P.G students (46.93%) are used ask the library staff for locating information
- The high percentage of the users get informed Computer literature about the online database sources of information.

- The study show that high percentage of U.G students (45.94%) is used Daily. While mostly P.G students (53.06%) are used once a week the internet.
- The high percentage of the users was use internet for their Research work.
- The study show that high percentage of U.G students often (94.29%) University/College and sometime (72.97%) Home. And never (2.70%) Other. And P.G students often (53.06%) University/College. And sometime (59.18%) Others. And never (28.57%) University/College avail the facility of internet.
- The study show that high percentage of U.G students (56.75%) are Full satisfied. While mostly P.G students (51.02%) are partially satisfied with the internet.
- The study show that high percentage of U.G students (56.75%) are used it takes too long to view/download page. While mostly P.G students (59.18%) are slow access speed find to be the biggest problems.
- The high percentages of the users were use Google for searching.
- The high percentage of the users was use Keyboards search for information on a computer system, including internet search engines.
- The high percentages of the users were use web resources for study and research.
- The high percentages of the users were use web resources 2-3 times in a week.

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Legal Learning Support Services through Building Collections and Capacities in Libraries

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Abstract

The law profession and its challenges are pervasively known to professionals of other disciplines as well as people in society. The Libraries have been playing a great role in supporting the Law profession by providing the legal information resources and services at great precision and speed. The paper explores the literature for the current practices applied in various libraries in different parts of world as well as discusses the collection building in law information services. The paper also highlights the capacity building at libraries through various services and collection building at Jawaharlal Nehru University (JNU) library in context of serving the academic users in the field of Law and Governance. The in-depth literature review provides a wide spectrum of legal information scenario.

Keywords: Law; Collection Building; Legal Information Services; India.

Introduction

Need to understand the Law Libraries and Users

The law profession demands continuous update of the current developments as well as retrospective information. Due to the intricate legal system in the country and the diverse resources in the field, the distinct working system of law libraries specially catering to the services to lawyers and judicial officials needs introspection and rethinking.

The functions of libraries are designed to meet the purpose and information needs of law professionals. The information seeking methods of law students, lawyers and other legal information users vary due to variations in their motives and aims. There are some very high end users of the law libraries such as top notch judges and legal luminaries and then there are students who are preparing for examinations or moot courts etc. To study users may require a large level of sampling but the close observation of law practitioners brings some others musings before libraries. Sometimes the questionnaire serves as a tool that functions effectively to collect data whereas at other times, the use of "the focus group interview method" may prove fruitful to understand the users' problematic behaviors.

The observations and interviews provide qualitative data about the role of legal information systems and their relation with law professionals.

This paper attempts to look at the issues concerned with library-user relationship as well as collection building efforts by Dr. B.R. Ambedkar Central Library and the library of the Centre for the Study of Law and Governance (CSLG) which is based in Jawaharlal Nehru University, New Delhi, India.

This is a fairly new Centre which has rapidly established itself as a citadel for higher learning in the field of law and governance through law. It conducts M.Phil. and Ph.D. prgrammes in the field of law and as is evident very fine and novel and path breaking legal areas are taken up for consideration by the centre.

Considering the uniqueness of the Centre, it increases the need for a very robust legal research system in the Centre.

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Designing of Law Collection, Services and Serving the Users

The legal learning and its ancillary services and tools have been based on continuous application of information technology in the form of inclusion of online resources and services meant for speedy access to the resources. In the past, inclusion of "know how database systems, marketing and training functions, business information specialists and information technology (including online access)" has been popular. The designing of law library may require forecasting space requirements and proper lighting, requirements for electronic data access. Consideration of law libraries' practice using computer laboratories has been discussed by Margeton (1995) along with bringing traditional features together with technology. Miles (1996) discussed about the concern of law firm's library to be modernized involving the outsourcing in the areas such as cataloguing. Studies have been conducted to understand the information search behavior and practices (Stephanie Ellis, Stephann Makri, Simon Attfield, 2014) of law information seekers. The legal information demand is accompanied with keeping up-to-date with newly arrived information as well as legal developments. As more and more quasi-legal bodies and judicial fora are created in the country there is an ever increasing need to tabulate and collate the decisions made by such authorities which are relied upon by researchers in the field. This raises the challenges of the library systems that are in place. A unique feature of legal research is that many of the previous judgments and decisions serve as precedents for future cases and therefore their sanctity and original character has to be preserved while providing library services.

The concept described as "maintaining awareness of developments in an area (known as "monitoring")" has been instrumental in information needs fulfillment. The necessity to reach and access to the information in order to update the self-knowledge is inevitable. The professional requirements of law scholars and lawyers compel them to seek the latest as well as retrospective information. The identification of various kinds of "electronic, printed and people-based current awareness resources" is helpful in creating awareness of publishing literary developments. Such factors determine the choice as well as decisions made regarding the usage of them. The monitoring behavior of law information seekers invite attention "to feed into the design of new and improvement of existing digital current awareness resources." The response and feedback from users is significant to assess the current awareness among the law scholars and utilization of resources (Terry Ballard, Anna Blain; 2010). The table of contents replaced by 'virtual shelves' can be helpful for creating awareness the library staff as well as users. Law users are keen to explore the IT based facilities such as web OPAC in university system.

The Collection Building for Law Discipline

The collection building and capacity of library in the context of law subject depends on the factors such as:

- Identification of information needs, variation in demands and futuristic approach.
- Understanding of micro-subject areas collection, their usage and analysis in the perspective of collection building as well as expenditure.
- Evaluating the users' approach by classification of users and their respective needs.
- Inducing and studying the level of information literacy among users. The variation of level may exist due to nature and needs of various kinds of professional necessities.
- Creation and increasing level of awareness of various collections and gaps within among the users. This may help in increasing the capacity of an existing collection and may build a new one, too.

Collection Building of Law Information Resources at JNU

Table 1: Print books purchased by the JNU Library

	2013		2014		2015	
Name of the School/ Centre	Recommended Titles	Titles Acquired	Recommended Titles	Titles Acquired	Recommended titles	Titles Acquired
CSLG	50	35	13	10	45	37

Table 2: Online Data bases

CSLG	2015	2016	2017
Hein Online	Yes	Yes	Yes
Lexis-Nexis	Yes	Yes	Yes
Manupatra Online	Yes	Yes	Yes
Westlaw	Yes	Yes	Yes
Integrum Profile	Yes	Yes	Yes

Table 3: Print Journals

CSLG	2015	2016	2017
Harvard International Law Journal	Yes	Yes	Yes
Environmental policy and Law	Yes	Yes	Yes
India Journal of International Law	Yes	Yes	Yes
Journal of Law and Economics	Yes	Yes	Yes

** Above journals are recommended by School of International Studies

Table 4: Books recommended and acquired during the years

Name of the School /Centre's Name	2013 Recommended Titles	2013 Titles Acquired	2014 Recommended Titles	2014 Titles Acquired	2015 Recommended titles	2015 Titles Acquired
CSLG	50	35	13	10	45	37

Table 5: Student Strength and Budget for the CSLG (PRINT AND E-BOOKS 2017-18)

Name of the School	Centre's Name	School-wise strength of Students	Break-up strength of Students	Total School-wise	No. of Faculty	Break-up strength of Faculty	Total Students and faculty as per school/Centres
CSLG		119	119	₹ 89,947.34	10	₹65,466.50	₹155,413.84

Table 6: Student Strength and Budget for the CSLG (PRINT AND E-BOOKS 2016-17)

Name of the School	Centre's Name	School-wise strength of Students	Break-up strength of Students	Total School-wise	No. of Faculty	Break-up strength of Faculty	Total Students and faculty per school/Centres
CSLG		119	119	₹ 59,965.29	10	₹32,733.22	₹92,698.51

The data from Table 1, 2 and 3 reflect the collection building of Law related information resources in various media as well as scattered in last couple of years. The presence of significant databases, purchasing of printed books along with subscribing the journals are primarily done on the recommendations of faculty members as well as requests from students of JNU. The table related with print books is showing data of years during 2013-15. The online databases and journals related information is presented since the years 2015 and till 2017. The library is providing access to major databases in the field of law.

The above Table 4 reflects the data about recommended titles by the Centre for the Study of Law and Governance (CSLG) during the three consecutive years from 2013 to 2015. The number of titles acquired till 2015 since 2013 is 82. The demand of recommended titles is specific in nature and covers the wide range of topics related to law and governance.

The Tables 5 and 6 inform about the budget allocation for the financial years 2016-17 and 2017-18. The student strength is provided along with the budget provisions for CSLG. Whereas the collection building comes in scenario, the understanding of collection usage is very instrumental. This helps in finding the micro areas of learning as well as usage patterns. The collections of varying sizes may belong to different specializations in 'law' field' yet leave

scope for further inclusion or extension. Few studies have indicated "overinvesting in legal materials" thus stressing on researching the collection needs. Michael Levine Clark, Margaret M. Jobe (2009) have suggested the following aspects: In lean budgetary times, understanding collection use is key to making informed decisions about resource allocation for collection development.

Libraries may be able to use the data to better manage the information materials, budgets and collecting practices. Utilization of library collections in JNU may be observed in the perspectives of following parameters:

- The usage of web-based resources
- Various methods of browsing and access to the collections
- The role of library staff in making the collection accessible
- Creating awareness of new additions as well as the extent of use of previous collections

Resources on Internet and Web-based Legal Information Services

The use and popularity of internet and sources available has been investigated (Robert Hinson, Raymond Atuguba, Dan Ofori, Julius Fobih; 2007) in a qualitative manner. The study and investigation of internet related behavior of law professionals is exploratory in nature. It is significant to understand the nature, behavior and patterns of law professionals because there are a number of areas in which the law professionals provide contributions. Studies have shown the impact of internet in terms of improvement in productivity and a communication tool. Internet plays the role of a platform as information provider as well as maintaining the professional relations.

The web-based information delivery system (Rita John Okeke; 2008) also demand introspection in law libraries in academic set up due to increased interference of World Wide Web. The benefits of interactive web technologies are pervasive in law information services to fulfill the demands of profession such as finding and interpreting the law. The web based information services related to law profession have been discussed in literature at broader level.

The web technologies related to web 2.0 are creating blogs, RSS feeds, and various channels of exchange of information such as instant messaging, and podcasting have been popular.

Law Information Seekers and Common Mistakes while Seeking Information

While the usage of digital information in wrong manner (including downloading or sharing in a way that is prohibited) requires the learning lessons for students, there has been a study in Taiwan (Huan Chueh Wu, Chien Chou, Hao Ren Ke, Mei Hung Wang; 2010) with the aims "to explore common copyright related problems that arise when librarians promote the use of digital library resources; and to investigate college students' misconceptions of copyright laws that arise when the students use these resources". The marketing of digital library resources informs about various ways to access and explore these resources but the users forget the limitations mentioned in the licenses etc. The law students should also be taught about the copyright aspects while using and downloading the digital resources. In the study, the identified facets of such problems are "systematic downloading, distribution to unauthorized users, and going beyond the purpose and character of academic use." The authors have shared the misunderstood areas on the part of students such as:

a. The digital resources should be shared;
b. The downloaded digital resources are all legitimately authorized and permitted;
c. All educational use is fair use; and
d. Any downloading is permitted as long as students are paying tuition.

The librarians need to develop instruction tools in a manner that can cope with the raised questions and doubts in the minds of law researchers as well as practitioners for using the electronic information. The understanding of users' behavior and patterns of browsing are sure components of librarians' concern. Chou, Chan and Wu (2007) have found out the few misconceptions in the minds of students. These framed ideas are related with resources available on Internet and their usage such as:

a. All internet content is open for the public to use;
b. The internet is always free; and
c. All educational use is fair use.

Academic Users of Law Resources and Legal Information

The law faculty members have also been a concern for library researchers. The law teachers, as other faculty members use information as well as direct the law scholars to the library resources. The libraries are center for providing information resources in

print and digital format for legal education and legal research. With the availability of various information products such as databases including law cases, the information behavior of users as well as relation with library has witnessed tremendous changes. With the advent of compact information products as well intricate information needs, the perception of users and library staff are continuously changing. The law subject academicians can help libraries in building the law collection. The aspects such as "update a core, qualitative and need-based collection" are imbibed in library's services to the fulfillment of information needs of users. The law teachers have a wide range of purposes to seek information. This range is not limited to only imparting teaching, conducting and guiding the research and other needs. Sometimes a component of information literacy may help the faculty members as well as the law students to explore the available law resources. The knowledge of databases such as 'HeinOnline', 'Westlaw India' and 'Manupatra' in Indian context may prove advantageous among users. The usage of these law online research tools is complex and requires training to be imparted. There are various ways in which the Supreme Court and High Courts judgments can be accessed. Then there are the All India Reporters, Labour law journals etc. The date, forum and level of court are various aspects that need to be kept in mind while deciding this issue.

Factors behind the Innovative Legal information Services

A study in neighboring country reflects (Ghalib Khan, Rubina Bhatti; 2015) the "determinants" of usage of resources and exploring services of the academic law libraries. The primary use of library resources is related with providing teaching services and other professional reasons. The law libraries have special clienteles with urgent and time bound information needs (Khan *et al.*, 2011). Where the ICT has paved way for speedy information, the diversity in information sources and media has been playing a supportive role in information access. The digital law libraries are modern wonders. The use of personal libraries, conversing with senior advocates is among the few significant steps towards information access. Brandon Nichole Wright (2016) identifies the challenges in a different scenario, other than the academic environment. Their study explores the evolution of "the prison law library doctrine". Their interesting findings include the outcome that there is no clear definition of alternative measures to a prisoner's right to access a library in the doctrine. The study can be helpful for various stakeholders such as information providers, lawyers, community leaders as well as the prison inmates to inform about "the vital information necessary to uphold the prisoners Due Process right to meaningful access to the court."

Variation in Law Professionals' Information Needs and Methods

The lawyers require information (Thanuskodi, 2010) for a variety of needs. The information needs of lawyers are related with case preparation. Use of law reports is very common in various studies the personal library and collections are preferred place (Thanuskodi, 2010; Al-Daihani and Opprenhein, 2008). This is the reason why all courts and judicial authorities usually have rich libraries in their premises. During the course of proceedings it is not uncommon to find judges and lawyers heavily relying on the library resources.

The lawyers are seen seeking adjournments to rush and procure a previous decision of the court to win arguments before the judicial bench. With the advent of technology this information can now be available at the click of a button. So many times the interaction with library staff along with guidance from the library tends to be supportive. Tahir *et al.* (2008) have mentioned the "consulting with experts" as a preferred method along with "conversations with colleagues". The other resources from library supply the information to the practicing lawyers. Updating the information is also very significant (Makri *et al.*, 2008)where the information seeking methods and models functions as "theoretical lenses to analyse users' behavior", certainly "at a high level of abstraction".

Law information in Indian Scenario

The law profession in India has been prominent and the library services for the same have been specific and speedy kind. The availability of information sources has been associated with the well-coordinated services with the inclusion of web 2.0 applications. In a study, Bhardwaj and Madhusudhan (2016) have found out that "legal information sources are lagging behind in exploiting the full potential of Web 2.0 features." They studied the relation of legal information source and integration of Web 2.0 tools in context with:

i. Contents,
ii. Provision to contribute the contents by user any time,
iii. Location.

The e-resources are devoid of few features such as:

i. Search features,

ii. General features,

i. Web 2.0 tools,

ii. Better help features,

iii. Provision to contribute contents by the users.

Also, it has been found out that mobile-based view is not available in majority of sources, and open access resources are lacking user-friendly features and citations search parameters. The libraries can redesign the services and maximize the utilization of law related resources by additional guidelines, and help features.

The law libraries keep on studying their users' behavior as well as the impact of services on users. The application of various methods such as "monitoring behavior", "large-scale analysis", and "strategic-based measures" has been implemented. The interactions with law faculty members, scholars, practitioners and library and information science professionals provide insights into the current practices as well as relevance of resources and services. The attention is required towards the factors such as (Ghalib Khan, Rubina Bhatti, Amjid Khan, Rahim Jan, (2017):

- Outdated collections
- Scarcity of information
- Communication technologies
- Budgetary issues
- Inactive roles of regulating bodies and professional associations
- Limited roles of professional library staff
- Limited access to the Higher Education Commission digital library
- Absence of proper library setup and
- Moral obligations and responsibilities of institutional administrations

Conclusion

With the advancement and rapid expansion of the legal profession in India there is a heavy reliance on the digital law library resources to augment the already existing civil and criminal jurisprudence in the country. The libraries have to rise to challenge and provide standardized and reliable tools to the practitioners and users oflegal education in the country. Also, the current trend is the five year law courses which have almost overtaken the three year law degree courses. The five year law programmes are much more in-depth and require much more resources at the disposal of students. These students are also participating in national and international moot courts where there is heavy reliance on the library resources. This will be an interesting area to watch out for and for the law libraries to augment their resources and capabilities with the dynamic scenario. There is already tremendous competition amongst the current lot of online databases. It needs to be seen if the library resources can match upto the ever changing demands of the legal profession.

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Dimensions of Reference Accuracy and Citation Errors: A Review of Literature

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Abstract

The consequences of the findings from the concerned literature on reference accuracy, citation error and other related sub-topics for the use of reference accuracy in scientific studies are discussed. Worse, this literature is highly scattered outside the library and information science field. Unquestionably, the list of references appended at the end of a scholarly article is a most important part of a publication. Referencing correctly according to a given citation style guide is a prime responsibility of authors, since it protects them from charges of academic theft and plagiarism as well as it enhance the quality and maintain the credibility of both authors and journals. Various burning issues of the citation errors, a decades-long problem in scholarly communication, are discussed.

Keywords: Reference Accuracy; Citation Errors; Reference Lists; Scholarly Communication.

Introduction

References, which support comments and theories of authors and help readers to search the topic comprehensively, are the very important attachment of a scientific paper. *Reference* is an individual entry found in a reference list, while *reference list* means the list of information sources given at the end of a scholarly communication. Most scientific research, if not all, is motivated by earlier research studies. Subsequently, no researcher can claim that his/her research study has been completed independently, without reference to other scholars' study. Amazingly, the important facet of the system of scholarly communication is sloppy and inaccurate [1].

Writing scientific article based on empirical research is a very difficult task, since it consists reporting with accuracy, brevity, clarity, and precision in a strong shape or layout giving no room for flexibility [2-4]. A manuscript is written and then rewritten many times and, ideally revised by intellectually sound subject experts and/or experienced colleagues prior submitting to the selected journal [4]. Once a manuscript has been sent to the scholarly journal, it should essentially be a responsibility of editors and peer reviewers to examine the inaccuracies and enhance its quality, and if needed consecutive process of peer reviews can be adopted [2,5-6]. Nevertheless, peer review may be an anxiety-creating process for some young and new-comer scholars [5,7-8]. It is no exaggeration that peer review is the best known method for maintaining the quality and uncompromising in scientific publishing. Albeit, many walls established by the scientific publishing system give no guarantee at all times that published papers are free from faults, omissions and inaccuracies [7,9].

References or citations fulfil many objectives. They link the present study to the structure of research that has completed earlier. Frank Place, Jr. (1916, p. 697) commented on good references in relation to the scientific method, "substantiate your statement by proof, either of your own or by the work that others have done before you" [10]. Citations also permit the reader to confirm or refute the author's claims.

Reference accuracy and citation error is not a new phenomenon in academic world. Reference accuracy

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is important in scholarly communication and scientific progress. Erroneous, incomplete, and inaccurate references make it complicated and time-consuming to the researcher to retrieve references and verify the concerned information to which the text of the scholarly article refers. In the words of Garfield (1969, p. 40), who is deemed as the Guru of Citation indexing, "shoddy citations cost everyone time, money, and energy. In the average library and research lab, an incredible percentage of staff time is expended in completing incomplete citations at the expense of more productive tasks for professional librarians and technicians who are in increasingly short supply" [11]. Garfield's views were later tested and confirmed by many authorities. According to Azadeh and Vaez (2013), wrong citations create dilemma, mistrust in the accuracy of a research, wastage of time and unwanted financial charges for information centres, libraries and researchers [12].

Sometimes, authors read the original papers but later they copy and paste the inaccurate references from an online source or bibliographic database. According to an investigation, which is based on a stochastic modeling of the citation process that explains empirical studies of misprint distributions in citations, conducted by Simkin and Roychowdhury (2003), about 80% of authors cited the papers but not read them. Only 20% of authors cited an article had really read it [13].

Reference accuracy and citation errors are the two opposite sides of a coin. They both are reciprocal in nature, means if one decreases then other increases. A hundred percent accurate reference list contains zero citation error, i.e. no citation error.

Citation Errors

A study entitled as "Citation Errors in Library Literature," and carried out by Pandit (1993, p. 185) shows that "errors focus on the citations themselves and exclude the extent to which authors correctly quoted a text or acknowledged an intellectual debt" [14]. On the basis of the ranked list of journals in *ISI's Journal Citation Reports* and selected studies that have identified core journals, Pandit chose the five library science journals including the *Library Trends* for analysis [14]. Doms (1989, p. 442) illustrated an accurate, or correct reference as "one in which all included elements are identical to the source" [15]. Yankauer (1990, p. 38) also described citation errors as, "errors of commission or omission in the printing of the reference" [16].

In general, omissions and mistakenly transcriptions of various elements of citation in reference lists, viz. names of author(s) and/or editor(s), book title, journal title, article's name, volume number, year, pagination etc. can cause serious bibliographical problems, and such errors often exist in published reports, indexing and abstracting sources for a long time. It is a very common phenomenon, existed in scholarly communication. Citation error can create problems in scholarly communication, and becomes self-perpetuate, and later makes embarrassing situations. As such, miscitations or citation errors not only raise questions and create doubts about the credibility and integrity of the author; they also badly influence both the validity of the important research outputs and the trustworthiness of the cited documents [17-19].

Need of the Study

With the dawn of World Wide Web (WWW), Information and Communication Technology (ICT), bibliographic database programs- viz. RefWorks, online bibliographic databases- viz. Web of Science (originally produced by the ISI, now maintained by Clarivate Analytics), Elsevier's Scopus, etc., and rapid growth in online reference management tools and services- viz. Zotero, Mendeley, CiteULike, Citation Machine, ResearchIndex (formerly CiteSeer), etc., a new kind of problem in citation-linking has taken birth. Citation-linking means linking from a citation or reference in an online article to the item cited. If references are incorrect, citation-linking is not possible [20]. The prime responsibility of reference accuracy in scientific articles rests on the authors. They ensure that their articles are "honest, clear, accurate, complete and balanced, and should avoid misleading, selective or ambiguous reporting" [21]. But it is felt that the authors of scientific articles consider reference accuracy as a trivial matter. In this matter, the views of June E. Goodrich and Charles G. Roland (1977, p. 19) are as follows: "The question of relative responsibility of author and of journal is moot. Both parties should have vested interests in ensuring optimal accuracy" [22].

Making scientific journals acceptable for application and indexing in international databases, and maintaining long-term existence, they should adhere to qualitative as well as quantitative standards for their acceptance by the scientific fraternity.

Empirical knowledge about *reference accuracy* and *citation errors* is sparse and difficult to access to the majority of researcher and author who might benefit from it. Many scholars, however, are exposed to articles on such topic in non-library and information

science journals, namely *Indian Journal of Otolaryngology and Head & Neck Surgery, Complex Systems, Burns, Journal of the American Medical Informatics Association, Anaesthesia, Canadian Journal of Anaesthesia, Research in the Schools*, *World Journal of Surgery, Journal of Bone & Joint Surgery, Journal of the Korean Medical Sciences, Emergency Medicine Australasia, British Medical Journal, Journal of Nematology, Journal of Dental Research, American Journal of Public Health, Editors' Bulletin, Clinical Otolaryngology, Lancet, Nature, Science*, and much more. Most of the articles on *reference accuracy* and *citation errors* are appeared in different disciplines like health and medical sciences and its sub-fields, but very less in library and information science discipline.

Literature in the field of library and information science is flooded with few areas such as bibliometrics and citation analysis, information seeking behaviour and user studied, and applications of ICT. Articles on reference accuracy and citation errors in Indian LIS journals are scarce. There is, therefore, need for the new literature in the hidden subfield of reference accuracy and citation errors in library and information science. Hence, the present study attempts to fill this long-standing gap.

Reference Management

For a young researcher, reference management is one of the most difficult tasks, because of the tedium of compiling references on the basis of a given citation style guide (for example APA, MLA, Chicago, Turabian style, etc.). This boring process leads researchers towards online and web-based reference management tools, which help them at all levels of referencing. A wide range of online reference management tools, viz. Citation Machine, Research Index, Zotero, RefWorks, Mendeley, CiteULike etc. are available on internet. Some of them are free and some are subscription based. These tools are well known among the scientific community [23-24].

What We Know About Surnames?

An old quotation, famed in Hollywood, is "I don't care what you say about me- just be sure to spell my name right" truly fits here in the context of the topic. Educated individuals are generally very sensitive about the method their names are voiced, as well as how they are penned on paper. In the same line, some people could feel it an insult or dishonour to their heritage when someone abbreviates their names for his/her comfort [25].

The terms, *surname* and *compound surname*, as used here repeatedly contain "any name that is used as a family name (except in the case of Romans of classical times)" and "two or more proper names," respectively [26].

Change and variation is the supreme law of nature, but this law does not fit into the surnames of authors at all. All reference citations to an author should come under a fixed "standardized" surname so that readers could not miss their desired papers which generally listed under variant spellings. The spelling variation in surnames is a source of pain and anxiety among readers, bibliometricians, librarians, as well as compilers of citation indexes. Citation counts of a scientific author's articles for numerous objectives (such as promotional, award fellowships, appraisal and evaluative), citation indexes are used as the basic tools. Many grammatical and spelling errors observed in translated contents pages published by non-English literature.

Compound surnames although consist only nearly 5% of all the names processed in formation of citation indexes. Various compound surnames indicate clan or family roots, and they are usually prefixed by foreign articles and/or prepositions that translate into English as "of" or "from"- for example (presented in alphabetical order), George de la Tours, John Dos Passos, Louis de Broglie, and Wernher von Braun. Hyphenated surnames also represent the coupling the two different family lines, such as Albert Szent-Györgyi, Cecil Day-Lewis, Hans Lykke-Seest, and Solange Chaput-Rolland. Patronymic surnames show father or family relationships- for example, Douglas MacArthur, Gene McCarthy, and Pat O'Brien [25].

Islamic Surnames

There are *nine* distinguished variety of surnames, a Muslim writer can use, in addition to the order of their presentation changes from country to country. Depending on the land of origin, Islamic or Muslim surnames also create a problem. Anis Khurshid (1977), the former Director of the Islamic Library Information Center at University of Karachi in Pakistan, exhibits the following interesting illustration of an Egyptian Arabic name: "*Fahr-ad-Din Abu Abdullah Muhammad Ibn Umer Ibn al-Hasan Al-Hatib Ar-Razi*." As it reveals, *Fahr-ad-Din* is an honorary title, while *Abu Abdullah* is yet another name indicating descent. *Muhammad* would be denoted his "first" or given name; *Ibn Umer Ibn al-Hasan* his father's or forefather's name; and *Al-Hatib* his genealogical or tribal descent. Lastly, *Ar-Razi* expresses the country or town of origin. [27].

Oriental Surnames

Oriental surnames, in particular, often create confusion among the selection of first, middle and last name. The Chinese authors write the "surname" (means last name) first. While Chinese authors having a non-Chinese "given name", write the "given name" first. There are no more than 200 familiar Chinese surnames, which pose a compounded problem. The similar pattern is followed by Korean authors. Albeit, there are only about 300 familiar Korean surnames, out of which only three, viz. *Kim, Pak,* and *Yi*, hold by the majority of population [28].

Clearly, because of a majority of oriental surnames hold by a less fraction of familiar surnames, which creates a crucial problem of homographs. This problem may be solved by using two or more initials along with authors' surnames [29].

Hungarian Surnames

The authors of Hungary write the "surname" (means "last" name) first when publishing in own country's publications. But the same authors publishing in foreign (out of Hungary) journals will write the "first" name first.

Game of Numbers- Year, Volume and Page Number

As Robert N. Broadus (1983) opined that a mistake in date or year of publication is very serious since it may create misconception about how historic or current a specific research is. Major errors, such as year, volume, and page number make access to the journal difficult; while minor errors, like as author's name impact negatively on the academic profiles of the authors. To prevent perpetual errors of reporting historical errors in the literature, a critical and scientific attitude regarding the use of historical data is necessary [30].

In this connection, E. Garfield pointed out that volume and page numbers, since both are the key elements of bibliographic information, most frequently omitted. He further stated: "The volume number is an added degree of redundancy which reduces the possibility of error or offsets the effect of errors, which are especially frequent in the cited year" [11].

Simple mathematical probability makes it scarce that two or more uniformly abbreviated journal names have the same volume number in the same year. The volume-year combination balances the impact of an unclear abbreviated journal names. For example, the abbreviated journal AUST J PHYS 1999, 2007 could indicate the Austrian Journal of Physics, page 1999, year 2007, or Austrian Journal of Physiology, page 2007, year 1999, or Australian Journal of Physics, page 1999, year 2007, or Australian Journal of Physiology, page 2007, year 1999, and much more. This type of abbreviated citation creates a bibliographic chaos [11].

Causes of Criticism

In 2006, D. Henige, an editor and historian, critically commented that scientists are least accurate in referencing among the all academicians [31]. Later on Stephen K. Donovan (2006) tried to save the prestige of whole scientific fraternity, especially paleontologists, but could not be completely successful. The palaeontologists generally contained references to page and figure number of cited references [32].

Ingelfinger (1976) also advised that maybe all reference lists should be "cut in half" to weed out inaccurate, invalid, irrelevant or misleading citations [33]. Garfield (1991, p. 14) emphasized that "acknowledging prior research and intellectual debts is of crucial ethical importance," [34] and he used the term "citation amnesia" for omission of relevant and pertinent references, considering it an important form of bibliographic misbehaviour. The enormous waste in the form of time, money, man power, etc. is only caused by the journal publishers, as they show high degree of irresponsibility [11].

Generally, it is assumed that it is best not to converse too much in public about one's shortcomings, inadequacies, failings, etc. Most publications as well as institutions, do best, as Napoleon recommended, "to wash their dirty linen at home" [35].

Gupta (2017) also critically reviewed and evaluated the literature on citation errors in scholarly communication, focusing solutions provided by the various authorities [36]. The quantity of reference errors occurred is inversely related to the diligence of the research scholars and the time span consumed by them in compiling and rectifying the bibliographical references.

Author name ambiguity may lead to irrelevant retrieval results in a query from the database. Due to the lack of universal standards for name information, this critical problem occurs. With the rapid growth of scientific literature, author name ambiguity has become a critical issue in managing information at the individual level. The variations in the name of authors, use of special symbols and characters in standard citation styles are some genuine factors affecting the verification process of the reference errors.

The bibliographical references cited in scientific articles are as noteworthy as any other segment of the scientific article, because of their applicability to the scientific and academic community and to indexing and abstracting services and citation databases. But it is unfortunately that references are deemed as a less important part of scientific publications [37]. The higher academic community is in serious trouble. The higher educational institutions, universities, R&D organizations etc. are producing so much research in the form of journal articles, monographs, conference proceedings, theses and dissertations etc. in all over the World. Citation errors, the decades-long problem in scholarly communication, have not disappeared till now.

Author, editor, peer reviewer, and publisher are the four pillars of the system of journal publication in scholarly communication. Any fault by anyone of them will directly affect the readers and damage the culture of scientific scholarship.

Solution of the Problem

Some journals, for example *The Journal of the American Medical Association*, *The New England Journal of Medicine,* and much more carefully verify each and every reference cited in the manuscript with the original sources or journal articles. This verification process requires a sufficient and well skilled staff, but a majority of journal publishers do not have the staff to examine all the cited references. De Lacey, Record & Wade (1985, p. 884) suggested an option examining a fraction or sample of cited references in every manuscript submitted for publication. They suggested for eliminating a high level of errors that articles received for publication with citation errors should be returned to the author and verified totally and a "permanent column specifically for misquotations could be inserted into the journal" [37].

For getting promotion through Academic Performance Indicator (API) the authors especially teachers publish their sub-standard articles abundantly in sub-standard publications in Indian higher education system. These publications neither check the reference accuracy nor force the authors to prepare an accurate reference list. The words of Goodrich and Roland (1977) in this relation fit correctly, as they wrote: "What reliance can readers have in authors and in journals, despite their combined efforts, permit the publication of such slipshod work?" [22]. The reference list is an inseparable part of the article, which embodies the literary manifestation of the research. If the reference list is significantly inaccurate, what about the data in results and conclusions section? A robust mechanism is needed to develop in which while calculating the API, if citation errors occurred than API points will be reduced according to the number of references cited and citation errors existed. Full reference accuracy counts full API points.

Recently in December 2016, the *International Committee of Medical Journal Editors* (ICMJE) published a revised set of recommendations, entitled "*Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals*" focusing the necessity for citing primary sources and ignoring unethical references, which are acceptable to the international scientific fraternity [38]. With the exponential growth and development of literary items and related references, it becomes crucially important to describe tasks of all major stakeholders of scholarly communication for controlling the issue of unethical and irrational references and thereby enhance the quality and indexability of scholarly communication, especially journals [39].

Conclusion

When Frank Place, Jr. (1916, p. 699) penned about citation error as a very old problem almost hundred years ago. He critically indicated that many esteemed scholars take "a reference from another's bibliography as though it were thereby Gospel truth itself" [10]. Most probably, the errors in citations and bibliographical references have appeared since the authors have started citing other authors. Generally, omissions and mistakenly transcriptions of various elements of citation in reference lists, viz. names of author(s) and/or editor(s), book title, journal title, article's name, volume number, year, pagination etc. can cause serious bibliographical problems, and such errors often exist in published reports, indexing and abstracting sources for a long time.

The key function of references in the academic world is as oxygen for human beings on the earth. Furthermore, quality works and their references alive the scholars after death. Editors of the periodical publications in fact are capable enough to enhance the quality of citations and improve the accuracy of the references in their publications through the minor variations in their publication policy. Editors can demand author(s) the first and/or last page of the cited references and can provide proof for the final correction. This process can diminish the "perpetual errors," in which references are copied and pasted from the incorrect or erroneous references of another

paper, since the author(s), at least, should look a copy of the original paper. This publication policy of the *Canadian Journal of Anaesthesia* (CJA) had reduced the citation errors astonishingly in the CJA. Reviewers should also verify a sample of references appended in the submitted paper for publication. Journal publishers should provide the correct citation at the beginning or ending of the article [40-41].

Reference errors are crucial phenomenon in almost all subject fields, such as anaesthesia, biomedical informatics, burn, dental, drugs, educational sciences, emergency medicine, hand surgery, health sciences, library and information science, manual therapy, medical science, nursing, obstetrics and gynecology, ophthalmology, otolaryngology and head & neck surgery, personnel and guidance, psychology, public health, social work, etc, but by the combined efforts of the editors, reviewers and authors, it can be minimized.

Referencing correctly according to a given citation style guide is a prime responsibility of authors, since it protects them from charges of academic theft and plagiarism as well as it enhances the quality and maintains the credibility of both authors and journals. At all times, there is space for betterment in all human endeavours. Journal articles in the all field of knowledge are no exception. As expressed by Asai & Vickers (1995, p. 1063) "humans are born to make mistakes, but should never give up the attempt to conquer this tendency" [42].

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Short Communication

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Library Security Systems

Jagadish T. Patange

Abstract

The security of library collections has many facets, all linked to the physical conservation of the holdings. Librarians focus their, attention on stabilizing the library environment and properly handling the materials, balancing current collections for future use. The most pervasive problem concerning the collection security, however, remains the theft of library collections i.e. Books, Conference papers, Research articles, Project reports, Journals etc. Most academic libraries need electronic security systems to deter theft from circulating the collections and policies to control access to the rare and valuable materials among their holding.

Keywords: Library Security Systems; RFID; Electronic Security; Security Systems in Libraries.

Need of Library Security Systems

1. Security system helps us to maintain our collection intact and available for users to check out.
2. Library having a big number of collection which include general books, periodicals, reference sources, compact discs, floppy disc, etc.
3. Information explosion increase User's demand, labour intensive nature of work, changing concepts of documents.
4. There is a major threat libraries are facing that is Missing Materials. We have to plan a system that can reduce the missing amount.
5. The library have to improve its circulation and inventory control, which helps to optimize the allocation of labour and financial resources.
6. Self-service checkout and check-in is enjoying greater and greater acceptance at libraries around the world.
7. No one wants to imagine that happen before with caution or not the wisdom of a collection agency and any other security problem affects the entire system. So we can make our library's collection in safe custody.
8. Our first purpose is to serve best service to the person who is using your library. By providing the materials they want, we can fulfill their requirement as well as ours.
9. When user come to take a particular book and it doesn't found in the library, it makes the users unsatisfied. Now the question is, what happen to the missing material. Whether it is not kept in its place or might be it is stolen. So we need security system.
10. In addition to printed materials, professional thief libraries and library patrons simply lose both audiovisual software and hardware Implementations
11. In order to prevent theft protection should include a good collection of security.
12. In devising a security program that is compatible with long-range library goals, library budget, service philosophy, staff and collection size, library managers should consider several questions.

Security Systems in Libraries

1. Radio Frequency Security System
2. Electromagnetic Security strips
3. CCTV Camera

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1. Features Radio Frequency Security System

- RFID is a method of remotely storing and retrieving data using devices called RFID tags.
- RFID technology is a new promising technology that will spread in the near future to enter most of our everyday activities.
- This technology helped in activity the misplace resource with hand held scanner like structure from stack.

Advantages of RFID Systems

1. Rapid check-out / check-in
2. Simplified patron self check-out / check-in
3. High-speed inventorying
4. Automated Materials handling
5. Long tag life

2. Electromagnetic Security Strips

Features

1. System used to apply 3M™ Tattle-Tape™ Security Strips to library print materials 3-5 times faster than manual application.
2. May be used in the stacks or in the back room. Tattle-Tape Security Strips and 3M Detection System have been carefully designed to work effectively as an integrated system.
3. 3M utilizes the highest quality raw materials combined with Statistical Process Control methods to control and improve manufacturing methods, yielding a specific strip that when used with the 3M Detection System results in a system which provides balance of detection and system reliability while minimizing unwanted alarms.

Advantages of Electromagnetic Security Strips

1. As a result of a proprietary testing method 3M can guarantee that every strip manufactured will perform to the necessary level required for detection by the 3M Detection System
2. 3M Tattle-Tape Security Strips and 3M Detection Systems have been carefully designed to work effectively as an integrated system

CCTV Camera

1. Close circuit television, or CCTV, is defined as the use of video cameras to transmit video to a limited set of monitors. This type of system differs from broadcast television in that the signal is not openly transmitted, but is transmitted only to specific television monitors programmed or wired to receive a signal from those cameras.
2. CCTV is often used for surveillance. Businesses, offices, schools, information centres and even residences may employ CCTV. The most common businesseand offices that utilize CCTV are banks, airports, casinos, military installations, schools, convenience stores, grocery stores and hospitals.

Advantages of CCTV Camera

1. CCTV systems are designed to operate continuously. They can be as simplified or complicated as you wish.
2. It reduces crime.
3. CCTV is the use of video cameras to transmit a signal to a specific place, on a limited set of monitors. It differs from broadcast television in that the signal is not openly transmitted, though it may employ point to point (P2P), point to multipoint, or mesh wireless links.

Conclusion

As we seen all the tools using in security systems nowadays in Libraries. But it is not possible for us to apply all of them because of budget and others reasons. So we can use the Electromagnetic System Whether a library uses open stacks (allowing readers direct access to the bookshelves) or closed stacks (requiring readers to locate a book in the catalogue and rely on staff to retrieve it), staff need to observe readers from time to time to discourage deliberate mutilation or vandalism of librarymaterials. As we seen all the tools using in security systems nowadays in Libraries. But it is not possible for us to apply all of them because of budget and others reasons. So we can use the Electromagnetic System using Tattle-Tape.

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